The Environmental Implications of Privatization

Lessons for Developing Countries

Magda Lover
Bradford S. Gentry

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(Continued on the inside back cover)
The Environmental Implications of Privatization

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Magda Lovei
Bradford S. Gentry

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Attention to the environmental and social aspects of private sector development is increasingly seen as an integral part of sustainable development. Progressive business leaders around the world are starting to recognize that the financial, environmental, and social aspects of business performance are all important elements of shareholder value—as expressed in the triple bottom line concept.

The worldwide trend toward privatization of state-owned enterprises that set in during the 1980s was largely motivated by the promise of improved efficiency and economic gains. But what effects does large-scale privatization have on the environment? If, as some studies suggest, privatization can yield positive environmental change along with economic benefits, what conditions need to be present for this to happen?

One way to look at the linkages between privatization and environment is to analyze real-world examples. This report accordingly draws on what is now a large and varied roster of cases to explore the environmental implications of privatization, with a focus on pollution management. It points out that privatization offers an opportunity to make strategic decisions with long-term economic, environmental, and social benefits; and outlines the conditions necessary to lead to such sustainable outcomes.

This report also examines what the World Bank can do to help client countries establish the conditions necessary to realize the potential environmental benefits of privatization, reviews the World Bank’s experience with addressing environmental issues during privatization, and makes recommendations for using lessons from good practices.

Kristalina Georgieva
Director
Environment Department
Governments worldwide have increasingly recognized the economic potential and fiscal advantages of privatization. What is less well recognized is that, under the right conditions, privatization can also yield environmental benefits and contribute to sustainable development. This report reviews a number of case studies to draw lessons about the environmental implications of privatization. It emphasizes that privatization offers an opportunity for making strategic decisions with longer-term impacts; stresses that integrating environmental and social considerations into the privatization process leads to better, more sustainable outcomes; and recommends approaches to building on the positive linkages between privatization and environmental protection.
Acknowledgments

This report was prepared as part of a larger effort by the World Bank’s Environment Department to identify effective environmental policies and tools that can help client countries improve their environmental management frameworks and practices.

The paper was prepared by Magda Lovei, lead environmental economist in the World Bank’s Environment Department, and Bradford S. Gentry, director, Research Program on Private Finance and the Environment, Yale Center for Environmental Law and Policy.

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As part of the work on Azerbaijan and Kazakhstan, in the spring and summer of 1999 Bradford Gentry and his associates interviewed government officials, businessmen, academics, and representatives of nongovernmental organizations and international financial institutions in six cities: London, England; Washington, D.C., United States; Baku, Azerbaijan; and Almaty, Astana, and Kokshetau, Kazakhstan. Literally scores of people assisted with information, analysis, comments, and presentation of these case studies. In particular, the authors thank Michelle Broege and Pradeep Kurukulasuriya, Yale Center for Environmental Law and Policy; Timothy Murphy and Robert Coyle, European Bank for Reconstruction and Development; Samir Suleymanov and Piotr Krzyzanowski, Environmentally and Socially Sustainable Development Department, Europe and Central Asia Region, World Bank; Chingiz Mamedov, at the time with the World Bank Resident Mission, Azerbaijan; Aida Tapalova and Kuralai Abdykaliyevain, World Bank Resident Mission, Kazakhstan; and Sonia Heaven, Almaty Institute of Power Generation and Telecommunications.

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In writing this paper, the authors drew on their earlier research (summarized, for example, in Gentry (1998) and Lovei (1999)), a review of the literature, practical experience, and case studies of Azerbaijan and Kazakhstan. The Appendices to this report encapsulate the results of a number of case studies as follows: Appendices A, Azerbaijan: The Promise and Drawbacks of an Economy Based on Natural Resources, and D, Kazakhstan: A Legacy of Pollution, are summa-
ries of the case studies prepared for this report by Bradford S. Gentry and his team. Appendix B Bulgaria, Addressing Environmental Liabilities to Facilitate Privatization, was prepared by Adrianna Damianova and Magda Lovei based on their work on two World Bank projects. Appendix C, Germany’s Treuhandanstalt: Environmental Assessment as an Integral Element in Privatization, was prepared by Magda Lovei based on Dodds and Wächter (1993), Paczi (1994), and Rötschke (1997). Appendices E, Malaysia: Ups and Downs of a Privatization in the Sanitation Sector, F, Mexico: Spelling Out Environmental Provisions in a Steel Industry Privatization, and G, Providing Environmental Services: Options for Private Involvement, were prepared by Bradford S. Gentry drawing on Gentry (1996) and Water Technology Online (2001) for Appendix E, Gentry (1998) for Appendix F, and Gentry and Abuyuan (2000) for Appendix G.

The authors are grateful to the governments of Norway and the Netherlands for their financial support for various aspects of this work.

The opinions expressed herein are solely those of the authors and should not be attributed, in any fashion, to the World Bank or to Yale University.
## Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>APL</td>
<td>Adaptable program loan</td>
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<tr>
<td>BOT</td>
<td>Build-operate-transfer</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act (United States)</td>
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<tr>
<td>EA</td>
<td>Environmental assessment</td>
</tr>
<tr>
<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<td>EIA</td>
<td>Environmental impact assessment</td>
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<td>EMS</td>
<td>Environmental management system</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<td>FDI</td>
<td>Foreign direct investment</td>
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<td>FESAL</td>
<td>Financial and enterprise sectoral adjustment loan</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GEF</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
</tr>
<tr>
<td>ICID</td>
<td>International Centre for Settlement of Investment Disputes</td>
</tr>
<tr>
<td>IDA</td>
<td>International Development Association</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
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<tr>
<td>LIL</td>
<td>Learning and innovation loan</td>
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<tr>
<td>MBO</td>
<td>Management buyout</td>
</tr>
<tr>
<td>MIGA</td>
<td>Multilateral Investment Guarantee Agency</td>
</tr>
<tr>
<td>MSC</td>
<td>Marine Stewardship Council</td>
</tr>
<tr>
<td>NEAP</td>
<td>National environmental action plan</td>
</tr>
<tr>
<td>NGO</td>
<td>Nongovernmental organization</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>---------</td>
<td>--------------------------------------------------</td>
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<tr>
<td>ODA</td>
<td>Official development assistance</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<tr>
<td>PCF</td>
<td>Prototype Carbon Fund</td>
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<tr>
<td>PIF</td>
<td>Privatization investment fund</td>
</tr>
<tr>
<td>PRS</td>
<td>Privatization and restructuring project</td>
</tr>
<tr>
<td>PSA</td>
<td>Production-sharing agreement</td>
</tr>
<tr>
<td>PSD</td>
<td>Private sector development</td>
</tr>
<tr>
<td>SAL</td>
<td>Structural adjustment loan</td>
</tr>
<tr>
<td>SEA</td>
<td>Sectoral environmental assessment</td>
</tr>
<tr>
<td>SECAL</td>
<td>Sectoral adjustment loan</td>
</tr>
<tr>
<td>SOE</td>
<td>State-owned enterprise</td>
</tr>
<tr>
<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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<tr>
<td>WWF</td>
<td>World Wildlife Fund</td>
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Executive Summary

The recent worldwide trend toward privatization of state-owned enterprises has been highly visible. Governments’ motives in pursuing privatization are also clear: to improve economic performance while reducing the burden of ownership and the budgetary strain of loss-making firms. What is not so well recognized is that, under the right conditions, privatization can generate environmental as well as economic benefits, and that privatization provides an opportunity to make strategic decisions that affect long-term environmental performance and sustainability.

Over the past several years, thinking about the environmental impacts of privatization has gone through an evolutionary process, mirroring the more general debate on the relationship between private capital flows and environmental issues. Initially, some viewed privatization and environmental objectives as incompatible. This perception started to change as experience demonstrated that the environmental performance of formerly state-owned enterprises often improved after privatization and that taking care of environmental problems could result in more successful privatizations.

Attending to the environmental and social aspects of private sector development is increasingly seen as an integral part of sustainable development. Business leaders around the world are starting to recognize that the financial, environmental, and social aspects of business performance are all important to shareholder value (the “triple bottom line” concept). Now the challenge is to learn from past experience and make the most of the potential of privatization to support environmentally sustainable outcomes.

The environmental promise of privatization

Experience and empirical evidence indicate that in most sectors and locations, private enterprises usually outperform public ones, as measured by economic efficiency, responsiveness to a changing business environment and to technological challenges, and ability to gain entrance to new markets. Many of these improvements promise environmental benefits through more efficient resource use, increased access to capital, greater investment in clean technologies, exposure to advanced management techniques, and access to markets for environmentally friendly goods and services.

A growing body of experience and research in Central and Eastern Europe, Latin America, and Asia is revealing positive links between privatization of state-owned enterprises and improved environmental performance. In most cases analyzed to date, commercial pressures—beyond simple changes in ownership or in enforcement patterns—have been driving the concern for environmental issues:

- New owners have usually brought new capital, technology, and management techniques to the business. Their focus on improving competitiveness in global markets frequently leads them to strive for increased resource efficiency, implying
reduced emissions. International companies have also been known to help their suppliers improve their own environmental performance.

* The European Union and the North American Free Trade Agreement area—the main target markets for exporters from Central and Eastern Europe and Latin America—have stringent environmental standards in place. To access these markets, exporters often must give heed to environmental matters.

* Multinational companies increasingly feel the need to preserve a “social license to operate” in order to maintain and expand their global operations. Important components of such a social license are a responsible approach toward managing the environmental aspects of the business and adherence to internationally accepted environmental management practices in the firms’ worldwide operations.

The incentives affecting environmental performance may differ by type of investor, sector, and privatization method. Investors that operate in countries with stringent environmental requirements usually face strong commercial incentives and public pressure to improve their performance in all their operations. Firms operating in “spotlight” sectors—such as oil and gas, chemicals, mining, timber, and power—are more likely to be under strong public scrutiny than firms in environmentally less sensitive sectors.

The privatization methods that are commonly applied each offer different opportunities for improving management and efficiency, raising capital for new investments, transferring technology, and accessing foreign markets. These factors, in turn, influence the environmental impacts of privatization. Although there are good examples of commercial pressures leading to environmental improvements even without special government intervention, not all privatizations confer such “automatic” benefits, and not all privatizations improve environmental performance. Questions have also been raised as to whether increased economic activity following privatization leads to growing pollution and pressure on natural resources.

Foreign direct investment (FDI)—the largest component of the increasing private capital flows to emerging markets—plays an important role in privatization and is associated with many of the expected improvements. As the volume of FDI increased in the 1990s, some observers voiced concern about its potential adverse impacts on the environment. To date, however, little empirical evidence has been found for a presumed “race to the bottom” or for “pollution havens.” The main reason is that for most firms, environmental protection costs are only a small proportion of the overall costs of doing business. Differences in environmental standards among countries do not appear to have a significant influence on decisions about direct investments or firm location, at least at the national level.

The issues outlined here all point to the need for a sound environmental policy and regulatory framework, along with other incentives, to help determine the environmental behavior of enterprises. Even if the environmental performance of a formerly government-run facility improves under private control due to the economic incentives and the commercial and public pressures mentioned above, it will do so only to the extent consistent with the commercial incentives facing the new owner.

**Making the most of privatization — Capturing environmental opportunities**

Privatization provides an opportunity to make strategic decisions with long-term economic, social, and environmental benefits. The extent to which the positive links between privatization and improved environmental performance are recognized and built on at the time of privatization and afterward determines the sustainability and development outcomes of privatization programs. The first step is to recognize that attending to environmental issues during privatization can bring benefits both to investors and to privatizing governments.

**Business perspective**

Although environmental concerns are generally minor considerations for investors, uncertainties can represent serious investor risk in two key areas:

* Uncertainty about liability for historical contamination, both at the plant site and outside plant boundaries, with the concomitant risks of cleanup requirements and of third-party claims for compensation (pollution stock issues)

* Uncertainty about the environmental requirements for ongoing operations, the risk of penalties, and
the potential need for additional investment to meet the requirements (pollution flow issues).

The potential liability for historical environmental damages is generally associated with accumulated hazardous waste and the threat it poses to ecosystems and human health through the contamination of drinking-water resources and soil. This kind of risk is particularly important in certain sectors such as downstream oil refining and distribution, nonferrous metallurgy, and mining. As case studies have shown, unresolved environmental issues can break deals or cause delays in negotiations.

Investors and enterprises have become particularly concerned about liability for historical environmental damages since the adoption in the United States of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which imposed retroactive and joint liability for environmental damage on past and current owners and financiers. Other countries have introduced similar provisions. Even in countries where the legislation is not as stringent as in the United States, potential liability of this kind causes concern for prospective investors, particularly well-funded ones that may be targets for unforeseen demands to contribute to cleanup costs in cash-strapped economies.

Experience has shown that investor risks associated with environmental issues can be mitigated if:

- Good baseline information exists about the extent and nature of past environmental damage
- There is clear allocation of liability for past damages
- The privatization agreement clearly sets out expectations about remediation, the actions to be taken, the responsible parties, and the costs and financing of such actions
- Environmental requirements for ongoing operations are clearly stipulated.

Environmental audits and detailed assessments have become universally accepted tools for evaluating both past and ongoing environmental issues in enterprises to be privatized and have become an integral part of the investor's due diligence in preparation for bidding. In addition, audits often outline requirements for detailed remediation, compliance, and environmental management plans.

**Government perspective**

Since governments set the rules for privatization, they are in the best position to ensure that the design of the privatization process facilitates the achievement of locally important objectives. It is in the best interest of governments to integrate environmental issues, as well as economic and social considerations, into the privatization process in order to achieve sustainable outcomes.

Several countries have embarked on large-scale privatization programs without sufficient information on existing environmental conditions and the potential risks, and without clear domestic environmental standards and guidelines. Many privatization officials have seen environmental matters as presenting only problems to be avoided, not risks to be reduced and benefits to be captured. A number of governments, however, have decided to integrate environmental issues into their privatization programs. There are two key reasons for doing so:

1. **Pressure from investors, financiers, and civil society.** Reputable investors, aware of the risks posed by environmental liabilities and by uncertainties about environmental requirements, often demand that environmental issues be addressed. In addition, civil society in many countries is becoming increasingly vocal about the environmental performance of enterprises. The result can be that, at a minimum, an otherwise reluctant government comes under pressure to address environmental risks as part of the privatization process.

2. **Financial benefits.** In the absence of clear information about the environmental standards and requirements to be applied and the measures to be taken to deal with past environmental liabilities, privatization of certain large enterprises may fail, or governments may learn the hard way that being unprepared to address environmental issues can lead to financially unattractive deals. As a result of such experiences, many governments have concluded that attending to environmental issues helps the privatization process.

If environmental issues are not specifically addressed during the privatization process, improvements may still occur, but they will be limited to those resulting from the broader incentives and capacities the new investors bring with them.
Integrating environmental aspects into the privatization agreement

Strategic decisions made at the time of privatization have long-lasting impacts on the company's future performance. The integration of environmental issues into the privatization process requires that governments take the following actions:

Provide environmental information and clarify requirements. Although reputable investors are likely to carry out their own environmental investigations, governments are well advised to obtain the necessary environmental information in advance and to include such information, together with references to environmental requirements, in the bidding documents.

Establish rules and mechanisms for addressing past environmental liabilities. Approaches for addressing past liabilities include price reductions, indemnity agreements, escrow accounts, earmarked funds, and guarantees. No matter which approach is used, it has to be based on a comparison of the costs and benefits of the required measures. It is often sufficient to contain and monitor contamination instead of carrying out expensive cleanups. Decisions about the extent of cleanups have to be guided by reasonable expectations about the future use of the sites and the risks posed, as well as by consultations with affected stakeholders.

Include environmental agreements in sale contracts. When environmental issues are significant, environmental agreements, based on terms acceptable to both the government and investors, should be part of the privatization contract. Where there is a need to remedy past environmental damages, a remediation agreement should specify requirements, a timetable, responsibilities, and financing issues. If companies are not able to meet existing environmental requirements at the time of privatization, compliance agreements can spell out the obligations of investors. Good compliance agreements recognize that making the changes in the company's operations necessary to improve its environmental record will take time. They establish clear targets and timetables for improving environmental performance and reaching compliance with the set standards.

Improve institutional coordination. Even though privatization agencies lack experience with environmental issues, many refuse to coordinate with environmental authorities for fear of slowing the process. Environmental agencies, on their part, may find it difficult to participate in the process without a clear mandate to do so. In facilitating collaboration between privatization and environmental agencies, governments are advised to:

- Build capacity in privatization agencies to understand the importance of addressing environmental issues, particularly where such issues represent significant risks to investors.
- Build capacity in the environmental agency to understand privatization procedures and their linkages with environmental requirements, to enable better collaboration with the privatization agency.
- Establish mechanisms for interagency coordination and consensus building during privatization and postprivatization.
- Include environmental provisions in the postprivatization oversight mechanism in cases where environmental issues are an important part of the privatization agreement.

Initiatives for supporting environmental capacity building and private sector development can be mutually reinforcing if they establish the conditions for integrating environmental considerations into privatization programs. Such efforts should not slow down the privatization process; on the contrary, they should facilitate sustainable privatization outcomes.

Maintaining regulatory control after privatization

Privatization brings a set of new actors—the investors in the privatized firms—into the local market. A variety of approaches may be needed in dealing with them. Environmental issues included in the privatization agreements should be part of a broader postprivatization oversight mechanism.

In order to facilitate good environmental performance after privatization, particular attention has to be paid to the following areas:

Monitoring environmental performance and enforcing compliance. The environmental performance of the privatized enterprise should be subject to regular monitoring, both as part of the broader postprivatization oversight (particularly concerning the environmental obligations and penalties stipulated in the sale agreement) and, as part of the regular environmental
monitoring and enforcement system, by the environmental agencies. The transparent provision of public information about environmental obligations, emissions, and compliance records can help key stakeholders become involved in monitoring environmental performance and can put pressure on the privatized firm to comply.

Resolving conflicts. The emergence of disputes and conflicts concerning the privatized firm's obligations after privatization is not uncommon. It is essential that a reliable conflict resolution mechanism be available to resolve such disputes. In some cases the resolution may imply renegotiation of some conditions of the privatization contract.

Building partnerships. Collaboration among private companies, government, civil society, and other stakeholders is important in monitoring the company's fulfillment of its contractual obligations, addressing new environmental issues, and resolving conflicts. Without such collaboration, there may be little understanding of or respect for the others' goals and working practices, and few forums for effectively bringing the parties together.

Whether privatization and the incentives that motivate private firms lead to sustained improvement in a particular case depends both on the economic incentives and, more importantly, on the regulatory requirements and public pressures facing the firm after privatization. Without an effective environmental regulatory system or commercial pressures for good environmental performance, incentives for making environmental improvements remain limited.

Privatization of environmental infrastructure services

A number of infrastructure services, such as water supply, sanitation, and waste management, confer strong environmental benefits, reduced environmental health risks, and improved environmental conditions. Experience in developing countries has shown that government agencies are often not able to operate infrastructure companies efficiently or to provide the desired quality of services while meeting environmental objectives.

Governments are turning to various forms of private sector involvement in an effort to increase efficiency and the adequacy of services. Private providers entering into such arrangements need to feel confident that they can obtain a reasonable return on their investments and that they will be able to meet both government requirements and customer expectations. Given the political sensitivity of some infrastructure services, particularly water supply, balancing the divergent goals and expectations of government, the private sector, customers, and civil society can be difficult.

As with privatized industrial operations, so in environmental infrastructure services many long-term private investors are concerned about the environmental conditions and obligations of the companies involved. In this area, as elsewhere, reasonable and predictable government regulations and requirements are essential.

Two key issues should be considered at the outset of any effort to privatize environmental services such as water supply and waste management: the coverage and quality of the environmental services to be provided, and the environmental and public health goals to be met. These requirements play a major role in determining the costs of providing the desired services, as they influence both the connection fees for new services and the user fees.

Agreement on environmental standards such as sewage treatment targets may be difficult. The environmental benefits may not be obvious or may accrue only in the long term or at a distance from the site of the investments, making it hard to use tariffs to internalize the costs of such investments. The level of standards to be required is a political choice, but it should be informed by careful technical analysis of the various alternatives and their short- and long-term impacts, and it should be based on a broad consultation of the affected stakeholders.

Over the longer term, changes in environmental priorities, circumstances, and requirements are unavoidable. The initial set of environmental standards is often revised as the contract evolves. Nonetheless, it is essential to define the provider's obligations carefully at the time of the contract award in order to establish a clear baseline that can be used in assessing the cost and other implications of proposed revisions. Revisions should normally be scheduled for implementation over a time period that is consistent with the regular process of price reviews.

Whatever privatization method is chosen, private involvement does not relieve the government of its responsibility for ensuring that service levels and en-
The Environmental Implications of Privatization — Lessons for Developing Countries

Environmental guidelines are met—on the contrary. Fulfilling these responsibilities requires that the government shift from being a provider to being an overseer and regulator and that it understand and respond to customers' needs. Users have repeatedly shown that they are willing and able to pay for water services—provided that they are satisfied with what they receive.

The government's regulatory capacity is one of the most critical considerations for potential private investors. If the government's regulatory and policy-making capacity is weak, in most cases little international private capital will flow into the sector, and the only options beyond public finance will be short-term management contracts or domestic private investment. If the government's general framework for private investment is strong, and if it is building credible regulatory structures, many more opportunities will exist for using private involvement to improve the delivery of environmental services.

**Linking environmental improvement and private sector development — World Bank experience**

Addressing the environmental aspects of privatization programs is important for facilitating sustainable private sector development and good environmental management. In the first place, environmental issues are often key elements of privatization deals, particularly in environmentally sensitive areas. Second, environmental provisions (or the lack thereof) in privatization agreements can influence strategic choices about future investment plans, technologies, and suppliers and can have long-lasting impacts on the environmental performance of the enterprises and the overall environmental outcomes of privatization programs.

Since the 1980s, the Bank’s assistance has focused on helping countries develop competitive markets, support institutional reform, and improve the governance, policy, and regulatory frameworks for effective private sector-led development. Its assistance to privatizations has been part of this broader agenda of facilitating private sector development. The Bank has also supported projects and programs for improving environmental regulatory and management frameworks. Only recently, however, have these two broad areas of assistance — private sector development and environment — been systematically linked, with the aim of harnessing the role of the private sector in promoting environmentally responsible and sustainable private sector development. In response to the changing functions and responsibilities of the private sector and governments, the nature of the Bank’s environmental assistance has shifted toward supporting the role of markets in environmental regulation and seeking partnerships with a range of stakeholders to improve environmental management.

A recent review identified several cases in which World Bank projects and programs have built on the positive linkages between environmental improvements and privatization support and in which environmental assistance has facilitated privatizations—for example, by addressing historical environmental liabilities and the environmental aspects of ongoing private operations. The review also identified several broad approaches that are being used for assessing and dealing with the environmental aspects of privatization in Bank projects and programs:

1. **Assessment of and support to the environmental policy and regulatory framework** (used in one-fourth of the reviewed projects)
2. **Sectoral environmental assessments (SEAs)**, undertaken in connection with several adjustment programs in environmentally sensitive areas
3. **Environmental audits** to assess the environmental management and liability issues of the entities to be privatized (applied in one-fourth of the projects reviewed)
4. **Integration of environmental aspects into bidding documents and sales contracts** (applied in one-fourth of the projects reviewed)
5. **Environmental compliance, management, and monitoring plans**, agreed on with the privatized company (used in one-third of the reviewed projects)
6. **Parallel technical assistance loans**, provided in the context of several adjustment loans that involved significant environmental concerns
7. **Lending**, extended, in some cases, to assist privatizing governments in financing certain aspects of environmental improvements, such as the remediation of past environmental damages.

As the role of the private sector increases in many areas of the economies of client countries, it is essential that the Bank's projects and programs harness the potential of the sector as a driver for sustainable development. To do this, the Bank has to learn from good
practices and take a systematic approach toward integrating environmental considerations into advisory services, technical assistance, projects, and programs supporting privatization.

The characteristics of privatization programs, their sectoral coverage, and the extent of Bank involvement all influence the environmental assessment tools and the environmental assistance approaches to be applied. The broader the privatization program is, the less feasible it becomes to apply environmental assessments or audits on a case-by-case basis, and the more important it is to assess and strengthen the environmental regulatory and institutional framework, its links with the privatization process, the environmental aspects of contractual arrangements, and the capacity of environmental agencies to oversee and enforce the implementation of the environmental requirements set for the privatized enterprises. These tasks, in turn, call for systematic and up-to-date information on the environmental regulatory and institutional framework, targeted capacity development, support for consensus-building mechanisms, and monitoring of the environmental outcomes of privatization programs.

Conclusions and lessons

Privatization provides an opportunity to improve the environmental performance of previously government-run operations through more efficient resource use, expanded access to capital, increased investment in cleaner technologies, exposure to foreign environmental management and market requirements, and greater regulatory freedom. But without a special effort to integrate environmental issues into privatization deals, and without an effective environmental regulatory framework, most of the potential environmental gains from privatization will not be captured. If governments do not include environmental issues in the privatization process, improvements may still occur, but they will be limited to those resulting from the broader incentives and capacities the new investors bring with them.

The cases described in this report point to important lessons for structuring and carrying out privatizations:

- Commercial incentives for efficient resource use, waste minimization, and a share in the market for "clean" products may promote better environmental performance even without special government action.
- Reputable private investors and other stakeholders often require that environmental issues be addressed during privatization. Better and more sustainable deals can be made if the government is well prepared for negotiation of environmental issues. This requires good collaboration between environmental and privatization authorities from the start.
- Environmental requirements have to be clear and predictable so that investors can build them into their offers and investment plans.
- The government’s role does not end with the sale of a firm; rather, the government must move from being the “doer” to being the enabler and overseer of private activity. Environmental regulation, monitoring, conflict resolution mechanisms, and enforcement are essential instruments for ensuring environmental improvement.
- A transparent public dialogue with civil society and key stakeholders about the environmental and social aspects of privatization is important in ensuring the sustainability of privatization agreements and avoiding future conflicts.
- Even after privatization, considerable opportunities exist for marshalling the support of civil society, as well as public and private resources, to address priority local environmental issues—for example, through training, the provision of public information, and transfer of technology and know-how.
- Through its lending and nonlending services, its dialogue with both privatization and environmental authorities over a range of sectors, and its capability to convene diverse stakeholders, the Bank can play an important role by working with countries undertaking privatization programs to facilitate environmentally sustainable outcomes.
Government worldwide have increasingly recognized the economic potential and fiscal advantages of privatization. The inward-looking, import-substitution, public sector-led industrial development policies that most developing and socialist economies pursued from the 1950s through the 1970s resulted in low productivity, large budget deficits, economic stagnation, and current account imbalances. Since the 1980s, developing countries, recognizing the limitations of these policies, have made a serious effort to privatize, sometimes as part of their stabilization, deregulation, and structural adjustment programs.

Privatization increases the private sector’s involvement in many sectors of the economy previously under government control. It can take various forms. Some of these—such as management contracts, leases, and concessions—grant to a private firm the right to use or operate state-owned resources but maintain state ownership. Others, such as joint ventures, voucher privatization, public offering, and direct sale, transfer the title to state-owned assets to the private sector.

Trends in privatization and foreign direct investment

In 1997 proceeds from privatization in developing countries were estimated at US$66.6 billion; in 1998 the total was US$49.3 billion. Although the amount subsequently declined, mainly because of the East Asian and Russian economic crises, the volume of the transactions indicates the magnitude of privatization activities (World Bank 2000). The Latin America and the Caribbean region alone generated privatization revenues amounting to US$154 billion during the period 1990-98 (Figure 1). Privatization has proceeded at a much slower pace in Africa, the Middle East, and South Asia.

On average, revenues from privatizations in the manufacturing sector (including highly polluting subsectors such as chemicals and metallurgy) and in primary sectors such as petroleum and mining amounted to 38 percent of total privatization revenues worldwide during 1990-97. In 1998 the share reached 58 percent. Estimates of privatization revenues in 1999

**Figure 1. Privatization revenues by Region, 1990-98**

[Graph showing privatization revenues by region]
showed that the largest share of revenues came from divestitures of infrastructure-related enterprises (World Bank 2000).

In parallel with the privatization of productive assets, economic and trade liberalization, and the growing integration of world markets, flows of private capital to developing countries and economies in transition grew rapidly from the mid-1980s to the late 1990s, surpassing the volume of official flows (Figure 2). Worldwide, FDI has been the largest component of private capital flows to developing countries (Figure 3).

The share of developing countries in global FDI grew from 24 percent in 1991 to 36 percent in 1997 before falling back to an estimated 25 percent in 1998 (World Bank 2000). FDI flows to the developing world were estimated at US$192 billion in 1999.

FDI can play a significant role in privatization by increasing the pool of potential bidders and making available additional financial resources. In 1998 FDI was the main source of foreign revenues raised through privatization activity, accounting for 93 percent of the total. While total portfolio equity flows to developing countries declined by almost 50 percent between 1997 and 1998, total FDI flows remained about the same (World Bank 2000).

As Megyeri and Sader (1997) point out, the amount of FDI received reflects the attractiveness and size of the privatization program. Privatization may have a multiplier effect on FDI (Sader 1995; IFC 1997a). Because of this effect, even after global privatization revenues began to decline in 1993, FDI continued to rise (Megyeri and Sader 1997). Factors that encourage FDI include political stability, favorable business and regulatory conditions, and strong export orientation.

**Economic gains and environmental promise**

Privatization is widely viewed as an opportunity for governments to improve efficiency and to promote competition, good management, improved access to product and capital markets, and export earnings while reducing the burden of ownership and the budgetary strain of loss-making enterprises. What is less well recognized is that many of these improvements may also generate environmental benefits.

**The effect of ownership on economic performance**

According to neoclassical economic theory, ownership should not make a difference to the efficiency of an enterprise that operates under competitive conditions and has an autonomous, performance-oriented management. It has been argued that most of the conditions necessary for the efficient operation of public enterprises can be established without ownership change. These conditions generally include:

- A hard budget constraint and strong financial discipline
- The possibility of bankruptcy, liquidation, takeovers, and closure
- Freedom from political interference
- Strong representation of the owners' interests.

**Figure 2. Long-term net financial flows to developing countries, 1990–99**

![Graph showing long-term net financial flows to developing countries, 1990-99](image)

**Figure 3. Composition of net private capital flows to developing countries, 1999**

![Pie chart showing composition of net private capital flows, 1999](image)
Nevertheless, empirical evidence indicates that private enterprises usually outperform public ones, although the results vary across sectors and locations. Funkhouser and MacAvoy (1979) examined the performance of more than a hundred Indonesian enterprises, including firms in manufacturing, agriculture, and transport, and found that state-owned enterprises (SOEs) had both higher operating costs and lower profit margins than private companies. An analysis by Meggison, Nash, and van Randenborgh (1994) of the pre- and postprivatization performance of a large sample of companies in a wide range of industries showed that the privatized firms were more profitable and efficient, invested more, and had higher net sales. A World Bank study that yielded similar results concluded that ownership does matter and that newly privatized firms do improve their performance (Boubakri and Cosset 1998). The International Finance Corporation (IFC) reported that the percentage of firms in its portfolio with "good" profitability more than doubled after privatization (from 29 to 67 percent) and that two-thirds of the firms improved their profitability (Donaldson 1995).

As Nellis (1994) points out, the private sector outperforms the public sector because governments are rarely committed to, or capable of fulfilling, all of the theoretical conditions listed above. Their reform efforts typically remain partial, and the results are short lived. SOEs, for example, often have great difficulty in responding to changing business environments or to market demand, competition, and technological challenges. Public enterprises are likely to succeed in capturing regulatory bodies. Governments typically fail to reward successes or punish failures in either the economic or the environmental performance of SOEs (Birdsall 1994).

**Opportunities for environmental improvement**

Many of the economic improvements associated with privatization can be linked with potential environmental benefits. The main sources of these environmental benefits are:

- **More efficient use of resources.** Most forms of privatization introduce more effective corporate governance and management, leading to greater attention to waste reduction, more efficient use of resources and technologies, and an overall increase in the productivity of assets. Privatization can open an opportunity for industrial restructuring, which, under public ownership, often becomes stalled or is unsustainable because of wavering government commitment. Industrial restructuring is aimed at improving corporate efficiency and profitability in the context of a changing economic environment. These improvements yield direct environmental benefits. The massive restructuring of almost all aspects of industrial enterprises in the reforming transition economies, for example, made possible investments in newer, cleaner capital stock and the introduction of more sustainable environmental management practices.

  - *Increased access to capital and greater investment in cleaner technologies.* Many state-owned enterprises are starved for investment capital. Usually, they have to compete with other public priorities during the annual budget cycle and must contribute their revenues directly to the general fund. Privatization can increase the amount of investment capital dedicated to the firm's operations through access to the investor's resources. New capital investments typically represent cleaner, more efficient technologies. Improving enterprises' financial strength and balance sheets also increases their access to financing for environmental investments.

  - *Increased exposure to advanced environmental management techniques and access to markets for environmentally friendly goods and services.* Making exports more competitive has been one of the main objectives of privatization in many countries. Greater access to new markets—particularly markets with strong environmental regulations and demand for environmentally friendly goods and services—and strengthened links to business partners with advanced environmental management practices make available wider opportunities for developing new business lines and improving environmental performance. Environmental management systems such as ISO 14001 are frequently introduced in connection with privatization to improve firms' competitive positions in Western markets (Box 1).

  - *"Regulatory freedom."* Environmental regulatory instruments, whether command-and-control or incentive based, are often ineffective in economies dominated by the public sector because of the regulators' reluctance to enforce environmental requirements against public entities and the regulated entities' failure to respond to incentives. As productive assets
Box 1. Environmental management systems — Yardsticks for environmental improvement

Environmental management systems (EMSs) are structured programs of continuous environmental improvement. A good EMS allows an enterprise to understand, direct, and track its environmental performance and to introduce improvements step by step. It can help an enterprise demonstrate to domestic and international customers, business partners, vendors, and the public its commitment to environmental goals and its progress in meeting them.

The best-known EMS framework is ISO 14001, drawn up by the International Organization for Standardization and based on the widely used ISO 9000 quality management standards. ISO 14001 is part of the ISO 14000 family of standards covering environmental evaluation of products and organizations. ISO standards are voluntary. The adoption of ISO 14001 by a country’s national standards organization normally signifies recognition of the ISO version as the EMS standard.

Among the challenges facing many developing and transition economies is the restructuring of their industries to increase efficiency, find new markets, and overcome the burden of the poor environmental practices of the past. The adoption of an EMS can be part of this process. The use of cleaner production methods, for example, can become a precondition for deeper and broader economic relationships with world markets. The prospect of improved access to Western export markets is an important incentive for adopting an EMS. As a result, EMS adoption has made considerable progress in many developing and transition countries, notably in Latin America, Central Europe, and elsewhere. For example, in Samara, Russia’s most industrialized region, the administration and the Ministry of Environmental Protection are actively seeking to attract foreign investment and stimulate industrial growth through regional planning strategies that emphasize environmental management. Several enterprises in the region have achieved ISO 9000 certification and are moving toward ISO 14001 certification.


move away from direct ownership and control by government, economic and regulatory decisions become separated, the close ties between regulators and the regulated are loosened, and the protection of inefficient industries interferes less with government enforcement decisions.

Incentives affecting environmental performance may differ by ownership, sector, and the size of the company. Companies with headquarters in countries with stringent environmental requirements usually face greater commercial incentives to improve their performance in all the countries where they operate than do firms based in countries without effective environmental protection programs. Similarly, firms operating worldwide, particularly in certain “spotlight” sectors such as oil and gas, mining, timber, and power, are more likely than local firms to be criticized for inadequate environmental performance by international media or environmental groups (see Box 2). The various privatization methods, too, have different implications for generating environmental incentives (see Table 1).

Many of the expected environmental benefits are associated with FDI, particularly those linked with strategic investments through direct sale by environmentally sensitive companies. Such transactions often foster the establishment of links with new export markets and access to environmental management skills, practices, and techniques. These tools, which are often lacking in developing countries, can be used to bring about long-term improvements in the environmental performance and sustainability of industrial operations. Foreign direct investors can influence environmental management regimes in the host countries by working to raise environmental awareness within the government, by adhering to international good practice, and by requiring improved environmental performance from their domestic suppliers and business partners (see Box 3).

Environmental issues in privatization

For the reasons discussed above, experience and many case studies have found that privatization often improves the environmental performance of existing
Box 2. Influences on corporate environmental behavior

Welford and Gouldson (1993) suggest that three key external factors influence industry's response to the environmental challenge:

- **The need for efficiency** (cost minimization through waste reduction, recycling, and utilization of waste)
- **Government regulations** (environmental legislation, standards, policies, and instruments)
- **Stakeholder pressure** (by consumers, business partners, investors, insurers, local communities, and advocacy groups).

In addition to external factors, some analysts point to the existence of internal drivers that seek acceptance by society of the firm's legitimacy. Dobson (1992) and Welford (1995) consider corporate environmental performance an aspect of ethical performance. It is likely that ethical behavior is partly dependent on external pressure, especially stakeholder influence.

For multinational corporations, the external factors are complex. They include driving forces not only in the countries where the individual companies operate but also in industrial countries. Multinational corporations based in industrial countries tend to comply with the environmental standards and rules of conduct prevailing there, even when the firms operate in countries with more relaxed environmental regulations. Companies with significant exports to markets where "green" consumerism is strong may put pressure on subsidiaries and suppliers to adopt environmentally friendly strategies, especially in consumer goods production.

*Source: Clarke and Walley 1998.*

state-owned production facilities. Questions have been raised, however, about the potential negative environmental impacts of privatization in connection with (a) the transfer of polluting industries to developing countries seen as "pollution havens"; (b) the development of previously undisturbed resources (as in new oil drilling or mining activities); (c) the cumulative impact of many small-scale polluting operations (such as in urban transport or fuel distribution and retail networks); and (d) the exceptions from regulatory requirements that are sometimes part of privatization transactions. The key concern in each case is that privatization may increase the environmental pressures caused by existing market, policy, and institutional failures or stemming from weak governance structures.

Table 1. Environmental implications of various privatization methods

<table>
<thead>
<tr>
<th>Privatization method</th>
<th>Improvement in efficiency and management</th>
<th>New capital</th>
<th>Technology transfer</th>
<th>Access to foreign markets</th>
<th>Expected positive environmental impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management contract, lease</td>
<td>XXX</td>
<td></td>
<td>X</td>
<td>X</td>
<td>XX</td>
</tr>
<tr>
<td>Concession</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
</tr>
<tr>
<td>Direct sale</td>
<td>XXX</td>
<td></td>
<td></td>
<td></td>
<td>XXX</td>
</tr>
<tr>
<td>Public offering</td>
<td></td>
<td>XXX</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Joint venture</td>
<td></td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
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<tr>
<td>Voucher privatization</td>
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<tr>
<td>Management buyout</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

*Note: Strength of environmental implications is indicated as follows: XXX, great effect; XX, moderate effect; X, slight effect; blank, no effect.*

*Source: Authors' assessment.*
Box 3. Encouraging good environmental management in small supplier firms — The Guadalajara Pilot

Environmental management systems (EMSs), described in Box 1, can be an effective tool for firms wishing to operate in an international marketplace that is increasingly concerned about environmental safety and responsibility. Foreign partners from industrial countries often urge or require their suppliers and subsidiaries to adopt EMSs. Small and medium-size firms, however, tend to see environmental management systems (or even general management systems) as too costly and complicated for their capacities. A 1996 survey in Mexico found that whereas 70 to 80 percent of the country’s large domestic and multinational companies had key EMS elements in place, fewer than 20 percent of the small companies did. Analysis of the survey showed that having an EMS was a leading factor in good environmental performance.

In November 1996, 11 large companies in Guadalajara, in cooperation with Mexico’s environmental authority (SEMARNAP), agreed to mentor small suppliers in implementing EMSs. Each company invited one to three of its small suppliers to participate in a two-year EMS pilot program. The mentors and the World Bank provided the smaller enterprises with funding for EMS training, which was carried out by a team of international and local university consultants.

By mid-1998 dramatic progress had been made, as the smaller firms reported significant improvements in their environmental performance. The program had yielded other benefits as well: better economic performance, improved waste handling, increased efficiency in use of materials and energy, and better environmental conditions for workers. About two-thirds of the firms reported improved compliance with environmental regulations. Companies also found that their public image and ability to attract new clients had improved. Environmental awareness was heightened too—a good omen for the sustainability of the performance improvements. Moreover, companies outside the program have expressed interest in EMSs and have even hired pilot-trained consultants to provide EMS assistance.

Sixteen firms are participating in the second phase of the pilot, under the leadership of a coordinating committee consisting of representatives of the enterprises and the cooperating universities. The reasons for continued participation include firms’ need to meet customer requirements for EMS development; their desire to enhance relations with current and potential customers and to improve their management, operational efficiency, and compliance; and a genuine commitment to improving environmental performance.

The international market may eventually require firms to have EMS certification. Even without that incentive, the experience of the Guadalajara pilot suggests that there are good economic, as well as environmental, reasons for firms to implement EMSs.

Source: Provided by Kulsum Ahmed and Paul Martin, World Bank. For additional information, see World Bank (1998b)

Pollution havens: Fears and facts

Despite concerns about the potential negative effect of FDI on the environment, differences in environmental standards among countries do not appear to have a significant influence on decisions about firm location (at least at the national level), largely because for most firms environmental protection costs are only a small proportion of the overall costs of doing business. This is one of the main reasons why little empirical evidence has been found for the presumed “pollution havens” (see, for example Wheeler 2001; and World Bank 2002). Environmental considerations may, however, have a strong effect on investment if an enterprise’s historical environmental liabilities might prove to be large compared with the value of the company (see “Understanding and Managing Environmental Risks: The Business Perspective,” Chapter 2).

Exploitation of new resources

Analysis of the environmental impacts of privatized production activities—such as mining and oil and gas exploration—in new locations requires consideration of such factors as the environmental value of the site being developed, the relative environmental performance of private and state-owned firms, whether the new development would have occurred at all without private involvement, and the ancillary impacts of the new use of the affected area. If a country has no environmental safeguards to prevent the excessive and unsustainable use of natural resources, if vested interests can influence resource use for short-term gain
without attention to long-term sustainability, or if enforcement of pollution abatement requirements is weak or nonexistent, then the expansion of economic activities will exacerbate or accelerate the environmental pressure and damage associated with weak governance structures and regulatory frameworks. The situation may become even worse if the expansion of economic activities in environmentally sensitive areas such as oil exploration and forestry is accompanied by deterioration of the regulatory system, as has occurred in some former Soviet republics.

**Cumulative effects of micro decisions**

In determining the cumulative environmental impacts of multiple small privatization decisions, it is necessary to compare data on environmental performance before and after privatization and to identify the causes of impacts (changes in economic activity, in the regulatory framework, in enforcement capacity, and so on). For example, increased vehicular emissions have been observed in many parts of the former Soviet Union, in parallel with the growth of private vehicles and the privatization of commercial vehicle fleets. There are indications that the pollution record of privatized commercial vehicle fleets has been worsening as a result of the collapse of the administrative structure and operations of the vehicle inspection and maintenance systems, the deterioration of fuel quality and of quality control, and the weakening of other regulatory mechanisms (for example, border controls on fuels and vehicles).

In some other cases, too, the privatization and deregulation of public transport services resulted in most often temporary increases in the number of vehicles operating and thus in increased total emissions. This could be of particular concern in cases when the increase in the number of new buses does not result in reduced waiting time for consumers but only to increased frequency, with low load factors. The latter happened, for example, in Santiago, Chile, where the initial complete deregulation had some very undesirable environmental impacts. The shift back to competitively tendered franchising both reduced the number of vehicles in the sensitive central areas and improved their emissions characteristics.

**Exceptions from environmental compliance**

Another area of concern is the potential for negative environmental effects when governments and investors agree to exceptions from compliance with existing environmental requirements. These agreements, however, should not be regarded as sanctioning the violation of environmental standards; rather, they hold a promise of positive change. Environmentally conscious investors often enter into agreements with governments in which they promise to bring the privatized entity into compliance with existing requirements within a specified period. Good compliance agreements recognize that making the changes necessary to meet requirements never met by government owners will take time, but they set clear targets and schedules.

It is true, however, that investors may be able to, and will, negotiate more favorable compliance agreements if the government is not interested in ensuring improvement in environmental performance or is unprepared for negotiations on environmental compliance. For example, in the case of the Ispat-Karmet steel mill in Kazakhstan, the LNM Group was able to negotiate a seven-year timeframe for reaching compliance (see Box D2, Appendix D). By contrast, in 1997 Union Minière and the government of Bulgaria negotiated a four-year schedule for the MDK Copper Smelter; in this instance, serious environmental preparatory work and World Bank technical assistance preceded the deal (Appendix B). In the privatization of the AHMSA steel complex in Mexico, a three-year compliance period was agreed on, although it was subsequently extended (see Appendix F).

**The necessity of a sound regulatory framework**

The concerns outlined in the preceding section point to the need for a sound environmental policy and regulatory framework and other incentives to help guide the environmental behavior of enterprises. Even if the environmental performance of a formerly government-run facility improves under private control due to the economic incentives and the commercial and public pressures discussed above, it will do so only to the extent consistent with the commercial incentives facing the new owner.

Whether privatization and the incentives that motivate private firms lead to sustained improvement in a particular case therefore depends not only on the economic incentives but also, and more importantly, on the regulatory requirements and public pressures facing the firm after privatization. Without an effec-
The Environmental Implications of Privatization – Lessons for Developing Countries

tive environmental regulatory system or commercial pressures for good environmental performance, incentives for making environmental improvements remain limited.

The ingredients of environmentally sound privatization

The extent to which the opportunities for environmental improvements that privatization offers can be effectively exploited depends on many factors, including:

- The commitment of the government to include environmental considerations in the sale negotiations and agreements
- The existing framework of environmental regulations, standards, and institutions
- The institutional capacity for and the commitment to environmental enforcement
- The buyers' environmental incentives and commitment.

Host governments, for their part, can take advantage of the opportunities offered by privatization to ensure that the privatized firms meet domestic environmental requirements and conditions and that they use their financial resources to generate environmental benefits in their operations. More sustainable privatization outcomes can be achieved if attention is paid to environmental and social considerations as part of the broad regulatory framework facing privatized enterprises.

Governments, the business sector, and civil society play important roles in establishing the conditions for realizing sustainable environmental outcomes from privatization. The next chapter discusses the procedures and mechanisms available for structuring privatization so as to reap the maximum feasible environmental benefits.
Chapter 2

Making the Most of Privatization — Capturing Environmental Opportunities

Privatization provides an opportunity to make strategic decisions with long-term economic, social, and environmental benefits. The sustainability and the development outcomes of privatization programs depend on the extent to which the positive links between privatization and improved environmental performance are recognized and built on at the time of privatization and thereafter. This chapter discusses the rationale and conditions for integrating environmental considerations into privatization from the business and government perspectives.

Understanding and managing environmental risks — The business perspective

In comparison with considerations such as economic and political stability, the rule of law, the size of the market, and the financial and tax system, the size and salience of environmental liabilities are of secondary importance to investors in most industries. In some cases, however, unresolved environmental liabilities are significant in relation to the overall value of the enterprise — a fact that may deter reputable firms from investing (Box 4).

There are two key areas of investor risk:

1. Uncertainty about the liability for environmental contamination caused in the past, both at the plant site and outside the plant boundaries, with the concomitant risks of cleanup requirements and of third-party claims for compensation (pollution stock issue). The potential liability for historical damages is generally associated with accumulated hazardous waste and its threat to ecosystems and human health through the contamination of drinking-water supplies and soil. Typically, much of the contamination is concentrated at plant sites, but it may have spread to neighboring areas, including agricultural land and human settlements. The risks can be particularly significant in sectors such as downstream oil refining and distribution, nonferrous metallurgy, petrochemicals, and mining.

2. Uncertainties about the environmental requirements for ongoing operations, the risk of penalties, and the potential need for additional investment to meet the requirements (pollution flow issue). In many cases the entities being privatized are persistent violators of domestic environmental requirements or international environmental performance guidelines. Uncertainties about fines and other penalties and about future performance requirements can have serious financial consequences.

Investors and enterprises operating in environmentally sensitive sectors have become increasingly conscious of the magnitude of environmental risks since the adoption and implementation of the U.S. Superfund law (the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA). Under Superfund, which has counterparts in many other countries, purchasers of historically contaminated land may be held liable for the costs of
Box 4. Investor fears — Troubles of a mining privatization in Peru

The Compañía Minera del Centro del Perú (Centromín Perú) became a thorn in the relatively successful privatization process that the Peruvian government initiated in 1991 to invigorate the economy. Centromín Perú, with operations in the central Andean region, was then the country’s biggest state-owned copper, lead, zinc, silver, and metallic gold mining company.

Once the decision was made in 1992 to privatize the firm, the government hired First Boston Bank and a local company, Macroconsult, to value the company’s assets in preparation for auction. A base price of US$340 million was set, and an additional commitment was made to invest US$240 million in the company over a period of three to five years. Another condition of sale was that the company be sold as a single entity.

Because of Centromín Perú’s enormous productive potential, its proven and expected mineral reserves, and the prospects for increased productivity, 28 companies, among them several reputable firms from Canada, China, Japan, and the United Kingdom, signed up to participate in the auction. Despite the initial interest, none of the companies submitted a proposal during the first call for bids, in April 1994, and the auction had to be declared a failure.

Officials from the privatization authority learned that several days before the auction, *Newsweek* magazine had published an article entitled “How Brown Was My Valley. Peru: Selling Off an Environmental Mess,” by Corinne Schmidt, an environmental reporter. The article described the environmental damage caused by Centromín Perú’s activities and pointed out that the Peruvian government had not yet clearly defined who would be held responsible for the environmental liabilities of the company once it was privatized. In addition, an article in the Peruvian press entitled “The Agony of the Lake” alerted the public to the environmental damage caused by mining activity at the Lake Junín National Reserve.

The government initially adopted a defensive position, denying that there was a problem and claiming that the articles were politically motivated. Once it became clear that the environmental liability issue really was why the first call for bids had failed, the government began to discuss ways of mitigating the damage. After a series of debates, the government unofficially adopted a proposal presented by members of the Group for Analysis of Development (GRADE), a nongovernmental organization dedicated to the study of economic and social topics. The proposal called for setting aside US$80 million from the sale of the company to create a fiduciary fund to be used for reviving the environmental areas affected by mining. The company was restructured and was later sold, after the environmental problems had been addressed.


Cleaning up the site even if the contamination was caused well before they first came in contact with the property. Similar issues have arisen under the laws of many countries in Europe, Latin America, and Asia. Even where governments have not pursued such remedies in the past, the potential for liabilities of this kind may be a cause of concern for prospective investors, particularly large and well-funded ones that may be prime targets for contributions to cleanup costs in cash-strapped economies.

Experience has shown that investor risks associated with environmental issues can be mitigated if:

- Good baseline information exists about the extent and nature of past environmental damage
- There is clear allocation of liability for past damages in the country’s legal system (for example, in the privatization law)
- The privatization agreement clearly sets out expectations about remediation, the actions to be taken, the responsible parties, and the costs and financing of such actions
- Environmental requirements for ongoing operations are clearly stipulated.

In response to the growing awareness of and concern about liability for environmental damage, several tools have been developed to manage investor risk:

*Environmental audits.* Audits are vital for identifying and evaluating existing environmental liabilities and problems related to the operation of plants and for designing a comprehensive environmental management plan. Multi-disciplinary auditing teams can be effective in addressing a range of concerns including the property’s environmental liabilities, esti-
mate the costs of cleanup and of prevention or control of pollution discharges, and analyze the risks of pollution fines, penalties, and lawsuits and of lost business due to damaged reputations or shutdowns. Audits also often identify cost-effective measures for improving the environmental record of the enterprise (Box 5).

Environmental impact assessments (EIAs). The EIA is an essential tool for limiting the negative environmental impacts of new operations and investments. New buyers often commit themselves to an investment program, and any such program should be subject to EIA. The process typically involves public consultations about investment alternatives and stakeholder concerns.

Environmental compliance plans. Compliance plans are important for reducing uncertainties about the environmental obligations of the company. They are often linked with the new investor’s future investment plan and set a timeframe for reducing emissions and reaching full compliance with environmental requirements. In the absence of clear domestic requirements, benchmark international guidelines can be applied.

Environmental management systems (EMSs). EMSs—often based on findings of environmental audits—guide positive changes in management approaches and in the behavior of polluting enterprises. In some countries privatization has been linked to the introduction of EMSs (see Box 1). Privatized companies often seek certification under international EMSs such as ISO 14001. A business guided by an EMS is expected to be less subject to environmental risks than one that is not properly managing its environmental affairs.

Achieving sustainable outcomes — The government perspective

Since governments set the rules for privatization, they are in the best position to ensure that the design of the privatization process facilitates the achievement of locally important objectives. It is important for governments to recognize that it is in their own best interest to integrate environmental issues, as well as economic and social goals, into the privatization process to achieve sustainable outcomes.

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Box 5. Too big to be shut down, too cash-poor to invest in environmental improvements — Finding ways out of the dilemma

Although countries of the former Soviet Union have strict environmental legislation, enforcement is weak, and policies lack uniformity even within countries. For example, Russia and Ukraine have pollution charges and fees, but usually only a fraction of the charges is ever collected, and few corrective actions, shutdowns, or criminal prosecutions are carried out. The reasons for weak, inadequate inspection regimes include harsh economic conditions that make it difficult for struggling enterprises to comply, and inadequate regulatory inspections.

The example of Azovstal Iron and Steel, Ukraine’s next-to-largest integrated steel plant, now 65 percent privatized, illustrates the regulatory problems and the beginnings of a solution. The regional environmental protection agency had repeatedly cited Azovstal as the second-largest air polluter in the region. Since the plant is strategically important to the regional steel industry, the Ministry of Industry thwarted attempts to impose pollution fines or shutdowns. Azovstal’s management argued that the enterprise lacked the resources to modernize its air pollution controls and that until its foreign markets were developed, it could not begin dealing with major point-source discharges.

The impasse was broken by an extensive pollution prevention audit that identified large- and small-scale opportunities to reduce pollution. A small pilot program, costing US$180,000, was undertaken with the goal of mitigating air pollution caused by graphite and smelter fumes. A technology was introduced to recover graphite, and another unit was retrofitted, resulting in a 98 percent reduction in particulate and vapor emissions. The overall reduction in air emissions was nearly 50 percent, and the recovered graphite had a market value of about US$45 per ton. This result encouraged Azovstal to replicate the pilot program in another part of the process. Regularly conducted pollution prevention audits are now part of the company’s management practices.

Source: Cheremisinoff and Van Epp 1999
Several developing and transition economies have embarked on large-scale privatization programs without sufficient information on existing environmental conditions and potential risks. Privatization authorities typically lacked the experience, expertise, or interest needed in dealing with such issues. Many privatization officials saw environmental matters as presenting only problems to be avoided, not risks to be reduced and benefits to be captured. This attitude stemmed from concerns about imposing additional costs on the company, delaying the process, or reducing privatization revenues.

A number of governments, however, decided to integrate environmental considerations into privatizations. There are two key reasons for doing so:

1. **Pressure from investors, financiers, and civil society.** As discussed above, many investors are increasingly aware of the risks posed by environmental liabilities and by uncertainties about environmental requirements. Therefore, reputable investors often demand that environmental issues be addressed. The global context in which some multinational investors work makes them sensitive to the potential impacts of environmental issues on their operations. This sensitivity can take many forms. For example, a multinational company may decline to take responsibility for historical contamination, or an international financial institution such as the IFC may refuse to invest in a company unless it meets the World Bank Group’s environmental guidelines (World Bank 1999b). In addition, an increasingly vocal civil society often urges international companies and privatizing governments to consider environmental issues. The result can be that, at a minimum, otherwise reluctant governments come under pressure to address environmental risks as part of the privatization process.

2. **Financial benefits.** In the absence of clear information about the environmental standards and requirements to be applied and the measures to be taken to address past environmental liabilities, governments may fail to complete the privatization of certain large enterprises, or they may learn the hard way that being unprepared to address environmental issues can lead to financially unattractive deals. An example of the first case is given in Box 4. An example of the second is the sale of the Lehel refrigerator factory in Hungary to the Swedish firm Electrolux. With no agreed plan and no estimates of the costs of addressing past environmental damages, the Hungarian government agreed that Electrolux would undertake the remediation of hazardous waste storage and that the costs would be retroactively reimbursed from the privatization revenues. The government was taken by surprise when the bill for remediation amounted to half the total sale price for the company. Learning from these experiences, many governments have concluded that integrating environmental factors can help the privatization process and may increase the sale price by reducing the uncertainty facing potential investors. For example, in the Mexican steel privatization described in Appendix F and the Bulgarian copper smelter privatization described in Appendix B, environmental agreements facilitated the sale.

If governments do not include environmental issues in the privatization process, improvements may still occur, but they will be limited to those resulting from the broader incentives and capacities the new investors bring with them. If governments opt to reflect environmental factors in the privatization process, steps to do so should be taken both before and after privatization, as outlined later in this chapter.

### Including environmental considerations in privatization agreements

Experience with successful past privatizations shows that to address environmental issues during privatization, a number of conditions need to be taken into account. These include the availability of environmental information, applicable environmental requirements or standards, contractual issues and incentives, environmental regulatory issues, a supportive institutional framework, and follow-up after privatization. Table 2 summarizes steps that can help governments capture the basic opportunities for improving environmental performance.

### Providing environmental information and clarifying requirements

Obtaining the necessary baseline information about the environmental performance and problems of an enterprise through environmental audits and detailed environmental assessment is an essential element of the preprivatization and due diligence process. Al-
through reputable investors are likely to carry out their own environmental investigation, governments are well advised to obtain the necessary information in advance and to include such information, together with references to the applicable environmental standards and requirements, in the bidding documents, negotiations, and privatization contracts. Some governments may find that, to clarify the requirements, it is necessary to review and revise their environmental regulations.

**Addressing past environmental liabilities**

The environmental information should be used to help structure the terms of the privatization contract in a way that meets the needs of both the government and investors. As noted in Table 2, extensive contractual provisions can be used to allocate responsibility for historical pollution and to manage appropriately the risks posed, and environmental compliance plans can set out a schedule for bringing operations into compliance with national or other agreed requirements.

Individual privatizations are usually just one part of a broader package of efforts to change the economic, political, and social structures of the country involved. In some cases entirely new market frameworks are being established that include definition of private property rights and responsibilities. In others the task is to create regulatory systems for newly private industrial firms and utilities. These regulatory frameworks for markets and private investment, together with the environmental policy framework, have major implications for the environmental performance of the privatized firms. Ensuring that existing statutory and regulatory requirements are consistent with both privatization legislation and the resulting contractual obligations is key. This is particularly true when assigning responsibility for historical pollution and enforcing environmental operating requirements immediately after privatization.

Governments have handled historical environmental liabilities in sale contracts in various ways:

<table>
<thead>
<tr>
<th>Table 2. Addressing environmental factors during privatization</th>
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<tbody>
<tr>
<td>Preparation for sale</td>
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<td>Request for bids</td>
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<tr>
<td>Due diligence period</td>
</tr>
<tr>
<td>Negotiations and sale</td>
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<tr>
<td>Postprivatization oversight</td>
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Source: Lovei 1999.
Price reductions have been applied when the new owners were expected to accept the liability for past pollution damages. Price discounting, however, does not relieve the parties from assessing the magnitude of liabilities, and it deprives the government of revenues. Since the new owners are likely to ask for price discounts on the basis of their most pessimistic assessments of the risks associated with environmental liabilities, the amount of forgone government revenues is likely to be larger than the actual costs of addressing liability issues. Additionally, price reductions offer no promises for addressing past liabilities.

Indemnity agreements are a way of relieving the new owners of potential environmental liabilities associated with conditions at the time of the sale. Germany, for example, applied indemnity agreements during the privatization of former East German assets (see Appendix C). In some cases, especially at the beginning of the privatization programs in Central and Eastern Europe, investors succeeded in negotiating open-ended indemnification agreements. The large cleanup costs thus assumed by the government could approach the size of the privatization revenues (as in the Hungarian example described in the preceding section). Indemnification agreements should clearly state how the government’s obligation to pay is to be determined, whether private party claims are allowed, and the limit of the government’s obligation. The use of indemnity agreements can be accompanied by the establishment of a mechanism for financing the necessary cleanup costs from general or earmarked revenues. In the long term, however, the existence of such funds may distort private incentives for ongoing risk management, and there is a risk that the funds may be politically influenced.

Government guarantees have been extended in some cases—for example, in Hungary. These guarantees provide assurance to the new owners, but they do not solve the problem of past environmental damage if the environmental regulatory framework is weak. In Hungary, for example, the Ministry of Environment did not require that past environmental liabilities be addressed, and very few guarantees were “called” (Szabo 1998).

Earmarked funds may be created by reserving a portion of privatization revenues for environmental remediation. For example, under Czech law the country’s National Property Fund compensates the purchaser up to 100 percent of the purchase price for costs incurred in discharging environmental liabilities (Boyd 1996). In Hungary, too, a fund has been established to finance the remediation of contaminated sites under a national program that sets priorities on the basis of risk assessment. In principle, the existence of such a fund may facilitate a systematic approach to priority setting. However, experience with environmental funds in many transition economies shows that such funds can have weaknesses as regards setting priorities and establishing a transparent accountability system (see, for example, Lovei (1995)).

Individual escrow accounts can be set up from privatization revenues to reimburse the privatized company for the costs of environmental remediation on the basis of an agreed remediation plan. Because most of the remediation measures are to be undertaken on the company’s site, and because they are often linked with its investment plans and operations, the companies are in the best position to undertake agreed remediation measures. Escrow accounts provide comfort to both parties—to the investor, who sees that the funds in escrow will be available to cover the costs of remediation, and to the government, which is assured that the funds will be used to finance the agreed measures. An alternative to escrow accounts may be performance bonds issued by the company and guaranteed by reputable financial institutions.

No matter which approach is taken, it has to be based on careful comparison of the costs and benefits of the measures required to deal with past liabilities and contaminated sites. The risks assessed, particularly human health effects and irreversible ecosystem damage, have to be balanced against the costs associated with remediation. It is often sufficient to contain and monitor contaminated sites instead of carrying out expensive cleanups. The extent of cleanups has to be guided by reasonable expectations about the future use of the sites and the risks involved, and by consultations with affected stakeholders. (Public consultations are increasingly accepted in many countries as part of decisionmaking about issues with serious environmental and social impacts.) Well-developed methodologies exist for conducting quick and detailed risk assessments that can help in setting a reasonable plan for dealing with past liabilities. (See Appendix C, on the quick-assessment method used in the German privatization program, for an example.)
Including environmental agreements in sale contracts

When environmental issues are significant, environmental agreements, based on terms acceptable to both the government and investors, should be part of the privatization contract. Where there is a need to repair past environmental damages, a remediation agreement should specify the detailed requirements, a timetable, responsibilities, and financing issues.

If companies are not able to meet existing environmental requirements at the time of privatization, compliance agreements can spell out the obligations of investors. Good compliance agreements recognize that making the changes in the company’s operations needed to improve its environmental record will take time. They set clear targets and timetables for improving environmental performance and reaching compliance with the set standards (see, for example, the Bulgarian case described in Appendix B).

Improving institutional coordination

Privatization is always a difficult and complicated political process. As Megyeri and Sader (1997) point out, if there are an excessive number of objectives in the privatization process, they may conflict with each other and may jeopardize the viability of the privatization program. Environmental objectives typically do not play a strong role in the bargaining process. Governments sometimes choose to sacrifice these aims or simply ignore them in pursuit of short-term gains, ultimately forgoing significant long-term benefits and an opportunity to set clear rules.

The strong political aspects of privatization are often reflected in frequently changing institutional arrangements, policies, priorities, and strategies for privatization. Such changes cause confusion and uncertainty among investors. Poland, for example, had five privatization ministers in as many years (Megyeri and Sader 1997), and in Hungary the institutions responsible for privatization were reorganized several times (see Box 6). Given these complex political and institutional conditions, it is often the case that neither the institutional framework nor the political will exists to draw environmental authorities into the privatization process, and environmental authorities are often too weak to initiate collaboration.

Even though privatization agencies lack experience with environmental issues, many have refused

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**Box 6. Institutional arrangements for privatization in Hungary and Poland**

**Hungary**

The main objective of privatization in Hungary was the rapid transfer of public ownership to private hands at the highest possible price. Structural adjustment was an assumed consequence and benefit of privatization. In the early phases of privatization, both the Privatization Agency and the Ministry of Finance rejected proposals for a systematic approach to environmental issues. Such short-sighted views ignored the longer-term costs, which remained a government liability.

The Privatization Agency’s stance was that there was no need to address environmental issues specifically since, according to civil law, all liabilities were automatically transferred to the new owner. Sale contracts typically did not contain binding environmental obligations. The state was obligated to provide complete information about the enterprise to be sold, and buyers were expected to discover problems during their due diligence. No warranties were provided against liabilities that could have been so discovered. Soil contamination was the largest concern for environmentally aware investors.

In some instances case-by-case bargaining determined how environmental issues were addressed. For example, Eternit Corp., a producer of asbestos-cement products, was privatized on condition that within three to five years 75 percent of the company’s products would not pose a threat to human health. Occupational health problems were to be addressed by a special fund set up for this purpose. Third-party claims have been rare, but in the case of the Hungarian enterprise Metallochema, residents in the company’s neighborhood sued the firm for compensation for health damages.
Poland

In Poland the methods used to privatize state-owned enterprises have included direct sale, initial public offering, liquidation, mass privatization, joint ventures, and various combinations of these approaches. Although the Ministry of Privatization had primary responsibility for the process, because of complicated ownership structures other government agencies could also be involved. In the ministry itself, conflicts could arise among the various departments responsible for different privatization methods.

Negotiations for sales were carried out by the Ministry of Planning, but the responsibility for environmental permitting and enforcement belonged to district governments. This, in practice, required a separate negotiation process on environmental compliance issues. In 1993 the Defense and Environment ministries established an interministerial unit to alleviate the administrative burden.

Environmental audits were prepared for 30 to 40 percent of the enterprises in the industrial sector. An underlying assumption of the environmental audits was that responsibility for site contamination, as well as for current pollution, would be passed to the investor.

Since no legal standards existed for cleanup, the procedure for addressing past environmental liabilities varied from transaction to transaction. Escrow accounts were often set up as a well-defined portion of the sale price, to be used for site remediation during a limited time in order to address problems identified by the site assessments. Indemnities, always capped, have been only rarely provided by the government, mainly in cases in which the audits indicated little cause for concern.

help drive the firm's postprivatization performance. As was emphasized above, private companies often face commercial incentives that lead to better environmental performance:

- Increased efficiency of raw material use (which implies decreased emissions)
- Increased access to financing from institutions that review environmental performance as part of their investment due diligence
- Increased access to export markets, particularly those, such as the European Union, with high environmental standards that have to be met
- Increased access to customers, especially those for whom environmental considerations are important factors in purchasing decisions
- Concern about environmental liabilities, particularly responsibility for contamination caused prior to privatization
- Reduced risk of penalties, through compliance with local environmental requirements
- Reduced risk of protests by neighbors and local environmental groups
- Reduced risk of international criticism by media and environmental groups.

Whether these motives actually lead to improved performance in a particular case depends on the nature of the investor and the sector and context in which the firm operates. Is there effective enforcement of environmental requirements, or public opposition to poor environmental performance? Are there charges, fines, or other penalties for violating environmental requirements? Are there customer pressures—local or export—for responsible environmental management?

If environmental issues are included in the privatization agreements, they also have to be part of a broader postprivatization oversight mechanism. For example, compliance with contractual obligations—including those set forth in the compliance and remediation agreements—has to be monitored and enforced, and disputes have to be resolved. In cases where the broad economic, regulatory, and postprivatization oversight frameworks are weak or environmental obligations were not clearly agreed on at the time of privatization, companies, governments, and people around the facilities have to face prolonged environmental problems and unresolved issues (Box 7).

In order to follow up on environmental obligations and facilitate real improvements, particular attention has to be paid to the following areas:

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**Box 7. A regulator's nightmare — Uncontrolled hazmats from a dying firm**

Around 1995, a synthetic rubber facility that had operated for years in Kazakhstan was converted into a joint-stock company, AO Carbide, which was 70 percent state owned and 30 percent worker owned. From 1950 to 1976 the plant had carried on mercury-based production without treating its wastewater. Some treatment began in 1976, after mercury contamination was discovered in the Nura River. A couple of years after its renaming, AO Carbide was split into three companies. One is profitable in local markets and is now run by local, private shareholders. The other two are another story.

The second company received the carbide furnace and was sold to a foreign consortium that included investors from Iran and the United Arab Emirates. Initially, the managers were local. The company did well for a while, but when it ran into economic difficulties, the local manager disappeared, one of the local lenders assumed control, and the foreign investors were left to pursue remedies through the Kazakh courts. Its management stated that it was not responsible for pollution associated with past operations. It was reportedly in financial distress with no resources available to address such issues.

The third company was bankrupt when formed. It was designed to hold all of the previous firm's liabilities—unpaid taxes, other debts, and pollution liabilities. Under state management, the assets were liquidated in an effort to pay off the firm's back taxes. Metals, often containing substantial mercury contamination, were sold first and were carted away to destinations unknown—dispersing the pollution. The proceeds from the sale of assets covered approximately 10 percent of the debts, and nothing was left for continuing productive operations. A legacy of pollution, including corroding storage vessels, has not been dealt with, and there is no environmental management in the firm. The government has few options for what to do with the remaining debt and pollution, and little capacity for addressing the problems.

*Source:* Interviews conducted during visit to Kazakhstan, July 1999.
Monitoring environmental performance and enforcing compliance. The environmental performance of the privatized enterprise should be subject to regular monitoring. Good compliance agreements do not exempt the privatized firms from adherence to environmental requirements; rather, they set detailed requirements for gradual improvement of the firm's performance that have to be regularly monitored. Penalties should be imposed if the agreed improvements do not materialize. In countries where the environmental regulatory framework is weak, monitoring and enforcement of the environmental provisions of the sale agreement as part of the privatization oversight are particularly important. The transparent provision of public information about environmental obligations, emissions, and the compliance record can help key stakeholders become involved in monitoring environmental performance and put pressure on the privatized firm to comply with its obligations.

Resolving conflicts. The emergence of disputes and conflicts over the privatized firm's obligations after privatization is not uncommon. The environmental aspects of the firm's operations are only part of a complex set of issues that may become subject to such conflicts. Environmental compliance plans and agreements are often linked to the firm's commitment to a larger investment and restructuring program that could be delayed or blocked by a variety of factors, including government action. It is essential that a reliable conflict resolution mechanism be available to resolve such disputes. In some cases the resolution may imply renegotiation of some conditions of the privatization contract.

Building partnerships. Collaboration among private companies, government, civil society, and other stakeholders is important in monitoring the companies' fulfillment of their contractual obligations, addressing new environmental issues, and resolving conflicts. Without such collaboration, there may be little understanding of or respect for the others' goals and working practices, and few forums for effectively bringing the parties together. Overcoming these barriers is one of the objectives of current experiments with public-private and three-party partnerships.

Privatization of infrastructure services — Environmental considerations

Certain infrastructure services, such as water supply, sanitation, and waste management, generate environmental and health benefits but can also give rise to environmental concerns. For example, is the water supply drawn from a fragile aquifer? From ecologically sensitive surface water bodies? What is the final destination of wastewater and household wastes? Is the quality of water downstream adequate for the intended use? Can the remaining water flow maintain the ecological integrity of the ecosystem? Are emissions from waste incinerators harming the health of local people? Such considerations demand that the management of infrastructure services be integrated with the country's wider environmental policies and strategies. Moreover, because many infrastructure services are natural monopolies, government regulation and oversight are essential to ensure that goals for service coverage and quality, as well as environmental requirements, are met.

The government agencies responsible for infrastructure services and environmental protection need to reconcile widely divergent expectations and priorities:

- Business and residential customers want reliable service, at lowest cost, and reliable continuing access.
- People without service are concerned about gaining access on reasonable terms in the near future.
- Governments wish to ensure that poor services do not hinder growth, that equity considerations are reflected in service coverage, and that environmental objectives are met.
- Environmental groups may demand high-level treatment of waste and full protection of the ecosystems affected by water abstraction and pollution.

Experience in developing countries has shown that many government agencies have serious difficulties in operating infrastructure companies efficiently and providing the desired quality of service while meeting environmental and social objectives. Many subsidized water systems in developing and transition countries have fallen apart, leading to high operating costs, poor maintenance, limited coverage, lost revenues, and other problems. How to square the costs of adequate, reliable service with an affordable level of fees charged to users is the key issue.

From ancient times to the present, water and wastewater services have been provided by a mix of
private and public actors. Both roles continue today in areas where governments cannot or do not provide basic water services. Increased private involvement in the delivery of infrastructure services is seen as one way to mobilize resources for expanding services and improving quality. Appendix G outlines the options for private involvement in infrastructure services, discusses the implications of the various choices, and gives some examples.

Enhancing regulation and responding to people’s preferences

Private involvement does not relieve the government of its responsibility for ensuring that service providers take environmental and social considerations into account. To fulfill their obligations in this area, governments need to understand and respond to the needs of users and affected populations. User demand and public preferences, not the technical supply of water services, must drive service supply planning. Differentiated or decentralized services may meet users’ needs more effectively than traditional centralized systems. Education programs may have to be undertaken to help users understand the constraints on the system, the options for addressing the constraints, and the costs of the different approaches.

Setting environmental goals from the start

As with privatized industrial operations, so in environmental infrastructure services many long-term

private investors are concerned about the environmental condition and obligations of the companies involved. They recognize that environmental management is a core element of businesses such as water and sanitation services and waste management, but they may be apprehensive about being viewed as having “deep pockets” and about having to face unreasonable and unexpected demands. In this area, as elsewhere, reasonable and predictable government regulations and requirements are essential.

Two key environmental performance issues should be considered at the outset of privatization: the coverage and quality of the environmental services to be provided, and the environmental requirements that must be met by the operation (for example, the quality of receiving water bodies, or limits on emissions from waste incinerators). These objectives determine the costs of providing services and influence both the connection fees for new services and the user fees to be charged. Privatization cases such as that of Buenos Aires (see Box 8) offer lessons on the importance of setting workable environmental objectives when negotiating the terms of private involvement.

Agreement on environmental standards such as sewage treatment targets may be difficult. The environmental benefits may not be obvious or may accrue only in the long term or at a distance from the site of the investments, making it hard to use tariffs to internalize the costs of such investments. Various interest groups may be involved in discussions about the re-

Box 8. Benefits and difficulties — A water and sewerage concession in Buenos Aires

As part of Argentina’s extensive privatization program in the early 1990s, control over the Buenos Aires water and sewerage system was awarded to Aguas Argentinas, a consortium led by the French company Lyonnaise des Eaux. In order to win the bid, Aguas Argentinas offered the greatest reduction in existing water tariffs. In addition, it agreed to a 30-year, US$4 billion investment plan to connect 100 percent of the population in the concession area to drinking water and 90 percent to sewerage.

Since winning the concession, Aguas Argentinas has connected over 500,000 new residents to drinking water and 300,000 to sewerage. Drinking-water supplies have been expanded, and quality has improved. Increased efficiency has led to economic and environmental benefits through the reduced use of chemicals. Commercial incentives have led Aguas Argentinas to check water quality more frequently than required by regulations and to reexamine wastewater treatment issues.

Although Buenos Aires successfully used a concession agreement to improve water services, two parts of the agreement have generated significant controversy. First, connection fees were expected to finance the expansion of services to new, mostly low-income, neighborhoods. Low-income customers, however, were unwilling to pay fees as high as US$1,000 per connection for water or sewerage, even where connection to networks was compulsory for public health and environmental reasons. Eventually, changes in the tariff (continued)
Box 8. Benefits and difficulties — A water and sewerage concession in Buenos Aires (continued)

system made it possible to eliminate the connection fees. Second, the contract required the concessionaire to make a large investment in specified sewage treatment facilities. Questions have been raised as to whether these particular facilities were the most cost-effective means of addressing the wastewater issues facing the city. The concern was that they would yield only small environmental benefits, since sewage and effluent were being discharged into the River Plate with a huge dilution factor. The pursuit of more efficient investment plans led to the disqualification of one bidder and efforts to renegotiate the concession by the winning bidder.

Both of the requirements described above have been the source of continuing disputes between the concessionaire and its regulators, greatly complicating the first major revision of tariffs. The situation was exacerbated by the overlapping authorities involved in regulation of environmental matters. It was not clear whether the concessionaire was subject only to the regulatory structure authorizing the concession — including environmental standards enforced by a specially created regulatory body — or, in addition, to separate, conflicting environmental requirements imposed by national, provincial, and municipal authorities.


requirements. Environmental advocates point to the need to protect the ecosystem functions of water resources and to avoid repeating the historical experiences of Western countries that allowed their rivers to be used as open sewers. Economists may call attention to the apparently low measurable benefits from sewage treatment.

The choice of standards and environmental requirements is always a political one, but it should be informed by careful technical and cost analysis of the various alternatives and their short- and long-term impacts, and it should be based on broad consultations with the affected stakeholders. In the case of Rio de Janeiro, for example, detailed studies and discussions were conducted before the water company was offered for privatization. Two main alternative strategies were considered for protecting water quality in the bay: extending sewer networks, or making larger investments in sewage treatment capacity. The outcome of the process was a decision to focus the limited resources on simple sewage treatment and to upgrade treatment facilities over a 20-year period in the parts of the bay where the improvements will have the greatest effect on the indicators of water quality that are of most interest to the general public (especially those that affect whether the water can be used for bathing).

Two misconceptions are common when considering environmental requirements in the course of infrastructure privatizations:

1. Governments, especially environmental agencies, often assume that a privatized company can quickly remedy service deficiencies and the consequences of past deferral of environmental investments. This can lead to goals for sewerage services and wastewater treatment that are unrealistically ambitious, especially where willingness to pay or the economic benefits of the required services are not obvious.

2. Governments may overestimate the capacity of privatized utilities to obtain large amounts of cash by raising funds and servicing additional debt. Such capacity often depends on the maturity of local capital markets. The East Asian financial crisis provides an example of the vulnerability to exchange rate risk of infrastructure projects that rely on international financing.

The renationalization of Malaysia’s sewerage system illustrates how these errors can compromise an infant infrastructure privatization (see Appendix E). The East Asian crisis was partly to blame for the reversal, in that financially hamstrung private firms were forced to seek state intervention. Not all the difficulties, however, were external; also implicated were overly optimistic demand and revenue projections and political interference in the operation of the concessions (Water Technology Online 2001). Following the renationalizations in sanitation and some other sectors, portfolio investors retreated from the country, withdrawing almost US$2.6 billion from Malaysian stocks in the last half of 2000. This worsened the financial picture, and luring investors back into infrastructure projects may be difficult because of the
government's unwillingness to give foreign firms a freer hand in management.

Several recommendations can be drawn from the lessons of recent experience in the private provision of environmental infrastructure services:

Service and environmental targets should be realistic and linked to the company's capacity to generate cash from existing and new services. Targets for service coverage must be based on realistic assumptions about ability to pay, connection rates for different services, and demand for the service, all of which are often greatly overstated. Connection fees concern more than just financing for expansion of services; they are linked to the priority to be given to different services and the rate at which networks should be developed. Private involvement in improving the delivery of infrastructure services will fail if the private operator cannot make money. So too will it fail if unrealistically high goals are set. A balance must be struck among sources of revenues (customers, or government), the improvements to be made, and incentives for efficient and effective performance.

Water and sewerage services should not be separated. Many studies, as well as experience in China, Malaysia, and Thailand, confirm that households are willing to spend significant amounts of money to ensure reliable water supplies but are not willing to pay much for the removal of sewage (except from their immediate neighborhood) or for its treatment. Recovering the costs of sewerage services alone is therefore more difficult than recovering the combined costs of water and sewerage service. Even when customers are willing to pay for sewerage service, the separation of services may not make sense economically or environmentally because the generation of wastewater is closely linked to water consumption.

Reasonable timeframes should be set for environmental improvements. The costs of complying with environmental requirements can be a significant part of the privatized company's investment program. Therefore, a reasonable timeframe should be allowed to comply with existing requirements and with changes in environmental standards based on a review of the company's environmental performance at the time of privatization, as well as in connection with major price reviews.

Coordination between various regulatory authorities should be established and maintained. Environmental services often fall under the regulatory authority of several agencies (for example, those responsible for environmental, public utility, and water resource management regulation), sometimes with contradictory expectations. The situation may be further complicated in federal systems where the different administrative levels (municipal, state, and federal) may have overlapping regulatory functions. Concession contracts should clarify the role of regulatory agencies, and a coordination mechanism should be established to ensure consistency in requirements, monitoring framework, conflict resolution mechanism, and enforcement capacity. Facilitating interagency coordination is an area where the World Bank and other development agencies can play an important role (see, for example, Annex B).

Determining tariffs and ensuring affordability

Users have shown over and over that they are willing and able to pay for services—provided that they are satisfied with the service they receive. Satisfied users are good customers and sympathetic voters. Dissatisfied consumers can be a spark that ignites smoldering resentments across a range of economic and social issues. Given the political sensitivity of some infrastructure services, particularly water supply, balancing the various goals for the sector can be difficult.

Structuring the tariff and the accompanying regulatory system is often the most complicated part of any arrangement involving both private operation and substantial private investment. Tariffs need not only to be affordable to consumers, but also to be high enough to allow the operator to make a profit if it performers well but not so high that the profits are excessive and cause a political backlash. Special efforts and funding may be needed to meet the basic needs of the poorest users; examples are "lifeline" tariffs and the water-stamps program employed in Chile.

The two most widely used approaches are the price cap and rate-of-return models. Under the price cap approach (the basis for the British regulatory structure), water prices are set for a number of years, usually five. If the water operator achieves higher-than-expected efficiencies, and therefore lower costs, it can keep the savings as profit until the next periodic price review. Under the rate-of-return approach, widely applied in the United States, an allowable level of profit (often in the range of 6 to 12 percent) is
determined, and the operator is allowed to charge rates that result in that level of profit over its costs.

Under a well-managed, competitive process for awarding such contracts, the environmental targets should be reflected in the bid price, and later revisions should give rise to discrete price adjustments at the time of price reviews. In the British system, the price formula included an allowance for responding to environmental obligations because at the time of the English and Welsh water privatization the market had limited information about future environmental costs to use in valuing the companies.4

Maintaining regulatory oversight

Prices established at the time of entry into a long-term contract such as a concession or build-operate-transfer (BOT) agreement should normally reflect the environmental requirements to be met by the private operator, at least over the first 5 to 10 years. Wherever possible, changes in these obligations should be avoided so as not to undermine the stability of the contract. In the case of the Buenos Aires water concession discussed in Box 8, both service targets and prices had to be adjusted in the third year of the contract, giving rise to suspicions that the concessionaire had been able to take advantage of an inexperienced regulator. The importance of avoiding early contract revisions reinforces the need for careful review and negotiation of environmental goals and other targets before the contract is finalized.

Governments that privatize infrastructure services take on a role very different from their accustomed one. At least for those tasks assigned to the private firm, the government ceases to be the day-to-day manager of the work and becomes the overseer. Governments have to find a new—often awkward—balance between too much or too little oversight of the private firm. Too much or inappropriate intervention may impede efficiency gains. Too little can jeopardize the government’s objective of ensuring adequate services and quality at a reasonable cost.

Making the shift from provider to overseer and regulator is extremely difficult for many governments. This is particularly true for countries in transition to a market economy, which have little experience with regulation of private activity within market frameworks. But even in countries with established markets, regulatory functions are not always undertaken in a consistent and transparent manner. A hands-off approach is difficult to maintain, especially when the new “regulatory” body consists of the utility’s old management.

The government’s regulatory capacity is one of the most critical considerations for potential private investors, particularly in infrastructure services. If that capacity is weak, little international private capital will flow into the sector, and the only options, other than public finance, will be short-term, low-cost management contracts or domestic private investment. If, however, the government’s general framework for private investment is strong and it is building credible regulatory structures, many more opportunities will exist for using privatization to improve the delivery of services. Private providers have to feel confident that they can obtain a reasonable return on their investments and that they will be able to meet both government requirements and customer expectations.

Government oversight of the private operator’s performance, as measured against the standards, is critical. Governments often have to expand their regulatory capacity significantly to provide such oversight. It is difficult to set fixed bidding and contractual frameworks for contracts that are to last for 25 years or more. No one can predict in advance, with the level of certainty applied in traditional public sector bid specifications, the most efficient and effective ways to provide the desired service over that length of time (Bennett 1998a). Methods for combining predictability and flexibility that are being explored include (a) having the bidders offer a total amount of investment they are willing to make on the basis of a set service fee, without specifying how the total investment will be allocated, and (b) incorporating terms into the contract that anticipate revisions of capital investment programs and tariffs throughout the contract period.

Over the longer term, changes in environmental priorities, circumstances, and requirements are unavoidable. The initial set of environmental standards often has to be revised as the contract evolves. Nonetheless, it is essential to define such obligations carefully at the time of the contract award in order to establish a clear baseline that can be used to assess the cost and other implications of proposed revisions. Revisions should normally be scheduled for implementation over a time period that is consistent with the regular process of price reviews. This procedure
ensures that future price reviews can include adjustments for agreed changes in environmental standards, but only by reference to the increase or reduction in costs relative to the requirements in the original contract. Depending on the structure of the industry and the service contracts, such revisions may take the form of either (a) a uniform adjustment that applies to all operators and reflects the average cost for an efficient operator, or (b) operator-specific adjustment factors applied when the changes differ by plant or location.

Because of the highly political and complex nature of long-term privatization contracts, mechanisms for public participation in monitoring the private service providers' performance and an arbitration mechanism for resolving disputed issues concerning changes in environmental and other contractual requirements over the life of the contract is always necessary. International institutions and development agencies can play an important role in conflict or dispute resolution among parties.
Chapter 3

The World Bank’s Experience in Improving the Environmental Record of Privatization

The World Bank supports projects and programs aimed at improving environmental regulatory and management frameworks. It also assists initiatives that support the privatization of state-owned assets in a range of sectors. Only recently, however, have these two broad areas of assistance been systematically linked, with the aim of harnessing the role of the private sector in promoting environmentally responsible and sustainable private sector development.

The Bank’s environmental assistance

Since the late 1980s, the Bank has supported environmental projects and programs through investment loans, technical assistance, institutional development loans and credits, nonlending services, and partnerships. These projects and programs have addressed priority environmental issues and have strengthened national and local capacity related to environmental policy, assessments, regulations, and enforcement mechanisms.

As the respective roles of governments, the private sector, and civil society have evolved, it has become clear that the private sector can play an essential role in practicing and promoting good environmental management and sustainable use of natural resources. This recognition is reflected in the changing profile of environmental projects, in the Bank’s support for new environmental regulatory approaches that recognize the importance of private initiatives, and in efforts to foster partnerships among the public and private sectors and civil society, with the goal of agreeing on common benchmarks for environmental responsibility. The discussion in this chapter focuses on these areas.

Changing profile of environmental projects

During the past several decades, World Bank lending has moved away from the sectors and activities in which the private sector plays a major role. For example, the Bank’s lending in industry, oil, gas, mining, and telecommunications has declined, and its lending profile has shifted from financing investment projects toward supporting policies and regulatory frameworks conducive to competitive markets.

The nature of environmental projects and programs has also changed in many areas. Whereas during the 1970s and 1980s several projects supported investments for control of industrial pollution (see the discussion in Lovei 1995), such projects were phased out in parallel with the Bank’s decision to move out of involvement in industrial lending, which has been gradually assumed by the International Finance Corporation (IFC), the private sector arm of the World Bank Group. More recent efforts — such as the Argentina Pollution Management Project and the Guadalajara pilot described in Box 3, Chapter 1 — have focused on promoting effective regulatory frameworks and improving environmental management in the private sector. In some cases, such as the Guadalajara pilot, particular attention has been given to improving en-
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Environmental management in small and medium-size enterprises.

The Bank’s efforts to focus on regulatory instruments that improve environmental management in the private sector, and particularly on those dealing with the environmental aspects of privatization, have to be viewed in this light. They also reflect an attempt to integrate environmental assistance into ongoing operations rather than pursue self-standing environmental projects that may have only a limited impact on the overall environmental sustainability of broad programs such as privatization.

Support for regulatory approaches and tools for harnessing markets

The shift from self-standing environmental projects toward integration of environmental aspects into broad programs has led to an increased emphasis on regulatory approaches that harness the role of markets in pursuit of environmental sustainability and help develop markets for environmental goods and services.

The Bank has assisted several countries with the introduction or strengthening of market-based regulatory instruments that allow for flexibility in achieving environmental improvements. New policy implementation instruments have been a useful addition to the environmental regulatory toolkit, which has traditionally relied on command-and-control approaches (Keene 1999; Lovei and Weiss 1998). The World Bank Group’s Pollution Prevention and Abatement Handbook 1998 (World Bank 1999b) summarizes key policy lessons and guidelines in pollution management.

More effective environmental regulatory, incentive, and enforcement mechanisms in client countries contribute to better environmental management and compliance and to the development of the environmental industry and service sectors. In this regard, the linkages between the Bank’s assistance to improve the environmental regulatory framework and the support for infant industries by the IFC can be particularly important (for IFC’s experience with the environmental and social aspects of privatization projects, see IFC 2002). In addition, the Global Environment Facility (GEF), of which the Bank is an implementing agency, is playing a special role in facilitating private sector involvement in activities that have significant global environmental benefits. The $564 million active GEF portfolio managed by the World Bank Group includes $125 million associated with IFC projects in the private sector. Additionally, GEF financing is leveraging 2.1 billion private sector financing.

The Bank has also assisted in creating markets for global environmental goods and services. The Prototype Carbon Fund (PCF), for example, has mobilized public and private funds, demonstrated the possibility of trading carbon emissions, and has facilitated the development of a private market in this area (see below).

Partnerships with the private sector for environmental improvement

The Bank has supported several nonlending activities and partnerships that promote good environmental management in the private sector. In many areas, partnerships have replaced the Bank’s direct involvement in a sector as a means of promoting sustainable resource management and the development of industry codes of conduct (Box 9). These partnerships, which increasingly involve governments, the private sector, and civil society, highlight the different, and complementary, roles of these key players: governments provide an appropriate policy and institutional framework for sustainable environmental management; private sector actors incorporate environmental and social aspects into their strategic planning and management; and civil society serves as partner and watchdog.

The following are some examples of public-private partnerships with an environmental focus in which the Bank is engaged as a convener or participant:

- The Forest Market Transformation Initiative is a Bank initiative designed to promote a dialogue and pilot activities to assist in turning market forces toward more forest-friendly practices. Under this initiative, the CEO’s ad hoc Forum promotes a dialogue between the chief executive officers (CEOs) of international forest industries and civil society and other stakeholders to produce joint recommendations on conservation and forest management. Another activity, Forest Trends was initiated with support of the Bank and the MacArthur Foundation to provide credible, balanced information about best practices in forest management and improved technologies to reduce the demand for virgin fiber.
Box 9. Forging public-private partnerships for the environment in East Asia

A Roundtable on Expanding Public-Private Partnership in the Environment, jointly organized by the Pacific Basin Economic Council (PBEC) and the World Bank, was held in Hong Kong, September 13–15, 1998. The roundtable brought together senior business executives of companies operating in East Asia; high-level government officials from agencies responsible for environment, planning, investment, and industry; parliamentarians; and representatives of municipalities. The main objectives of the roundtable were to foster industry-government dialogue on environmental regulatory and policy issues, stimulate the transfer of best practices, and promote regulatory transparency.

From the private sector perspective, the motivation for dialogue is linked with business considerations—the need to plan future investments, determine the costs of compliance with current and future regulations, and respond to labor and customer demands for good environmental performance. What the private sector desires from the government is predictability and transparency, a level playing field, and narrower official discretion in enforcing compliance.

Participants found the event a worthwhile and successful first step in developing a systematic dialogue on key regulatory issues. The World Bank was seen as an appropriate, nonbiased facilitator for the dialogue.


- The Prototype Carbon Fund (PCF) mobilizes resources from public and private sources to fund projects that produce greenhouse gas emission reductions which could be registered with the United Nations Framework Convention on Climate Change (UNFCCC) for the purposes of the Kyoto Protocol. PCF demonstrates how insights and experience from both sectors can be pooled to mobilize additional resources for sustainable development, address global environmental concerns, and build knowledge and capacity to support climate-friendly investments in Bank client countries.

- The World Business Council for Sustainable Development (WBCSD) is a coalition of 150 international companies committed to sustainable development. The Bank collaborates with WBCSD to promote the good environmental management practices and guidelines such as those outlined in the World Bank's Pollution Prevention and Abatement Handbook.

- Business Partners for Development (BPD), which is an informal network of private companies, central and municipal governments, nongovernmental organizations (NGOs), and donor agencies, pilots multiparty solutions to complex development issues. It has established a Natural Resources Cluster (NRC), one of five BPD focus groups aimed at promoting sustainability. The NRC is convened by CARE International, BP Amoco, and the World Bank to promote good practices and environmental sustainability in oil, gas, and mining operations.

Bank assistance for privatization

The Bank's support for privatization has been a significant part of a broader agenda of facilitating private sector development (PSD). The active Bank portfolio in fiscal 2001 consisted of 88 projects with privatization components, representing US$6.4 billion in lending. Of this amount, US$1.3 billion was directly allocated for privatization-related programs and activities. (Figure 4 shows the regional distribution of lending for privatization.) Privatization supported by the Bank encompasses management contracts, leases, concessions, BOT arrangements, and divestiture in a wide range of sectors. Since the late 1980s, the Bank has supported an agenda that emphasizes institutional

Figure 4. World Bank lending for privatization by Region (Active portfolio, fiscal 2001)

Note: AFR, Sub-Saharan Africa; LAC, Latin America and the Caribbean; SAR, South Asia; ECA, Europe and Central Asia; EAP, East Asia and Pacific; MNA, Middle East and North Africa.

reforms, with the goal of fostering markets and removing government constraints on PSD.

During the late 1990s, Bank assistance responded to the new challenges of globalization by helping countries enhance their competitiveness, improve governance, and support corporate restructuring. Privatization—including private participation in the provision of infrastructure services, as well as broader privatization programs—has been supported by a range of instruments: specific investment loans (43 percent of the projects in the active portfolio with privatization components), adjustment loans (33 percent), technical assistance loans (17 percent), and other instruments such as adaptable program loans and learning and innovation loans (7 percent). In addition, the Bank offered advisory services to help governments establish legal, financial, and regulatory frameworks for PSD. Most Bank-supported privatization programs are broad and multisectoral, but several deal with specific sectors.

Integrating environmental aspects of privatization into Bank operations

A recent study looked at 88 active projects (as of calendar 2000) in order to assess how environmental issues have been addressed in projects and programs supporting privatization, to identify good practice, and to contribute to the development of recommendations for a systematic approach (Abuyuan 2001). The sectors covered included agriculture, electric power, mining, private sector development, transport, urban development, and water supply and sanitation.

The review pointed to several instances in which the Bank's environmental assistance had facilitated privatization. In the Bulgaria Environmental Remediation Pilot Project (described in Appendix B), the Bank's involvement in addressing past environmental liabilities was an important consideration for the private bidder. In the Ghana Mining Sector Rehabilitation Project, too, joint-venture partners found comfort in the Bank's involvement both in the preparation of environmental audits and in the negotiation of agreements that dealt with past environmental liabilities (Box 10).

Application of environmental safeguard policies

The review also looked at how the Bank's safeguard policies have been applied to projects and programs supporting privatization. Of the projects in the sample, 50 percent had been assigned environmental category B, 30 percent were in category C, and 8 percent were in category A. For 11 percent of the projects, no environmental category was assigned; one project was rated FI (financial intermediary). Figure 5 shows the distribution of reviewed projects according to lending instrument and environmental category.

Environmental screening and assessments or analyses were carried out according to the Bank's Operational Policy 4.01 and were sometimes conducted even for environmental category C projects or programs, which, formally, do not require environmental assessment. Examples of this are the Niger Privatiza-
Privatization is often part of broader stabilization and reform programs supported by quick-disbursing, policy-based lending instruments such as sectoral adjustment loans (SECALs) and structural adjustment loans (SALs). Until recently, adjustment loans were not subject to the Bank’s mandatory requirement for EA. When, in January 1999, the Operational Directive on Environmental Assessment was revised and converted into Operational Policy/Bank Procedures (OP/BP) 4.01, sectoral adjustment loans became subject to its requirements. The policy states that “EA for SECAL assesses the potential environmental impacts of planned policy, institutional, and regulatory actions.” According to footnote 15 of the policy, “actions that would require such assessment include, for example, privatization of environmentally sensitive enterprises, changes in land tenure in areas with important natural habitats . . .”

As the results of the review indicate, even before the change in policy, some adjustment programs had been subject to environmental assessment, and there had been several examples of a proactive approach toward strengthening the positive links between environmental outcomes and privatization programs.

A review of selected category C SECALs in environmentally sensitive sectors and in the multisector category found that project reports often recognize the potential for environmental risks but assign environmental category C to projects because of lack of clear evidence as to the magnitude and nature of environmental impacts (Yoda 2000). The Romania Agricultural SECAL, for example, recognized the potential for changes in agricultural inputs such as fertilizer, seeds, and machinery. It concluded, however, that the environmental effects of the loan were unclear because (a) pesticide use would not be measurably changed by the reforms; (b) although fertilizer, seeds, and machinery would be affected, it was not certain that more intensive use of purchased inputs would occur over the short term or, if it did, which inputs would be used more intensively and with what effect on the natural resource base; and (c) it was difficult to predict the impact of changes in land policy on the environment. In another case, the Ukraine Agricultural SECAL was classified as category C, but environmental issues were recognized. These issues included agricultural runoff that affects surface water and groundwater, caused by inappropriate soil management measures, poor management of fertilizer and pesticide application, poor waste management on livestock farms, and lack of suitable equipment.

As these examples indicate, the application of traditional project-based environmental assessments to broad privatization programs and policies is not straightforward or easy. Identifying a feasible approach for meeting the requirements of the revised operational policy has therefore posed a challenge. In addition to the often indirect nature of the linkages between policy change and environmental impacts, the great variety of privatization programs supported by SECALs makes it difficult to identify common approaches to environmental issues. This variety is reflected in the size range of enterprises under privatization, the sectoral range of privatization programs,
Box 11. The wide diversity of sectoral adjustment loans with privatization components

**Size range of enterprises**
- The **Bulgaria Financial and Enterprise Sector Adjustment Loan (FESAL)** involved more than 500 large state-owned enterprises (SOEs) and 3,000 smaller SOEs.
- The **Ukraine Second Enterprise Development Adjustment Loan (EDAL II)** involved privatization of 9,500 small, medium-size, and large enterprises; of this number, 100 were large enterprises.
- The **Russia Second Coal Sector Development Adjustment Loan (Coal SECAL II)** had as its goal completion of the privatization of 45 percent of the coal industry, including mines of various sizes.
- The **Bolivia Capitalization Program Adjustment Credit (CPAC)** involved capitalization of 6 large SOEs and privatization of 53 small and medium-size SOEs.

**Involvement of multiple sectors**
- The **Bulgaria FESAL II** involved the privatization of energy, transport, infrastructure, telecommunications, the airline company, and power generation.
- The **Ukraine EDAL II** was multisectoral, although it did not specify the sectors of the 9,500 SOEs under privatization.
- The **Bolivia CPAC** involved privatization in the hydrocarbon, telecommunications, electricity, mining, and transport sectors.

**Mix of privatization methods**
- In the **Bulgaria FESAL II**, the government used international privatization agents to try to attract strategic investors to its privatization of large, important SOEs. Privatization of 3,000 smaller SOEs was conducted through auctions, tenders, and negotiated sales.
- In the **Bolivia CPAC**, 6 large SOEs were to be capitalized, and 53 small and medium-size SOEs were to be privatized through auction or tender.

**Short project cycle**
On average, less than one year elapsed between initiation of a SECAL and approval by the Bank's Board. The intervals were as follows:
- **Côte d'Ivoire Transport Sector Adjustment/Investment Program**: 4.5 months
- **Bulgaria FESAL II**: 14 months
- **Ukraine EDAL II**: 15 months
- **Russia Coal SECAL II**: 6 months
- **Poland Hard Coal SECAL**: 6 months
- **Ukraine Coal Sector Adjustment Project**: 6.5 months
- **Bolivia CPAC**: 3 years.

**Source:** Yoda 2000.

the number of privatization methods, and the speed of privatization programs. (See the examples in Box 11.)

**Approaches to environmental issues in projects and programs**

The review identified several broad approaches to addressing the environmental aspects of privatization, including approaches to adjustment programs. The following are some of the key issues addressed and tools applied:

1. **Assessment of and support to the environmental policy and regulatory framework.** One-fourth of the reviewed projects assessed the legislative and environmental regulatory framework and capacity of the client country. Many supported the revision of existing regulations, institutional strengthening, and capacity development. The **Mauritania Energy, Water, and Sanitation Sector Reform Project**, for example, supported the enhancement of environmental regulations in the water and electricity sectors as part of revisions to the environmental law. The **Bahia Municipal Development Project** in Brazil supported the development of municipal environmental legislation and the strengthening of municipal environmental councils.

2. **Sectoral environmental assessments (SEAs).** SEAs, which have been undertaken in connection with several ad-
justment programs, take a sectorwide perspective in identifying the key environmental implications of broad sectoral reforms and programs. If they are carried out in advance of or during the adjustment program, they can influence sector reforms. In the case of Russia Coal SECAL II, a coal sector SEA was conducted three years before the initiation of the loan. The SEA identified the environmental risks of mining activities in general and explained in detail the environmental issues related to mine closures. Carrying out SEAs may require significant resources, which have typically been provided through parallel technical assistance loans (see point 6, below).

3. Environmental audits. Environmental audits, applied in one-fourth of the reviewed projects and programs, assess environmental management and liability issues of the entities to be privatized. Examples include the Guyana Financial and Private Sector Technical Assistance Loan and the Panama Utilities Restructuring Technical Assistance Loan. Environmental audits have been extensively used in adjustment loans supporting privatization programs. In the Bolivia Capitalization Program Adjustment Credit, for example, environmental audits were to be conducted prior to privatization in the electric power and mining sectors. In the Bulgaria Financial and Enterprise Sector Adjustment Loan (FESAL) II, privatization advisers financed by the European Union were engaged to support the government of Bulgaria in the preparation and completion of its privatization program. Environmental audits identified enterprises with past environmental liabilities large enough to affect the privatization outcome. For these enterprises, additional detailed environmental assessments were undertaken within the framework of the Bulgaria Environment and Privatization Support Adjustment Loan. The assessments involved extensive site investigations, including testing for groundwater and soil contamination. The audits and the additional, more detailed environmental assessments provided a basis for environmental remediation and compliance agreements between the bidders and the government. These agreements, together with provisions for sanctions and conflict resolution mechanisms, became part of the privatization contracts.

4. Integration of environmental aspects into bidding documents and sale contracts. This approach was found in one-fourth of the projects. The Guyana Financial and Private Sector Technical Assistance Loan, for example, stipulated that privatization agreements should include clauses concerning responsibilities for environmental remediation. In the framework of the Cape Verde Privatization Technical Assistance project, standard procedures were developed to incorporate environmental requirements into public bidding documents. During the preparation of the Bulgaria Environment and Privatization Support Adjustment Loan, the Bank provided assistance in designing environmental clauses for the privatization contracts.

5. Environmental compliance, management, and monitoring plans. In one-third of the reviewed projects, plans of this kind were prepared and agreed on with the privatized company. Since the enterprises being privatized have often not been in compliance with environmental regulations and new investments are needed to improve their environmental performance, compliance plans frequently outline a detailed plan for gradual improvement. In the Bulgaria Environmental Remediation Pilot Project, for example, the compliance plan describes, year by year, the agreed improvements to be achieved in air and water emissions and in waste management. The company is responsible for detailed monitoring and reporting. Several projects contain provisions on the monitoring of environmental impacts. The Niger Pilot Private Irrigation Project, for example, includes a program for monitoring shallow aquifer levels and soil and water quality. In the Uganda Privatization and Utility Sector Reform Project the environmental regulatory authority is monitoring compliance with environmental management plans.

6. Parallel technical assistance loans. Technical assistance loans have been provided in connection with several adjustment loans that raised significant environmental concerns. For example, the Russia Coal Sector Restructuring Implementation Assistance Project assisted federal and regional authorities with improving mine closure procedures and developing a system for managing the environmental rehabilitation of land disturbed by past mining operations in connection with the Russia Coal
In parallel with the Poland Hard Coal SECAL, a Privatization and Restructuring Project supported Poland's Ministry of Environment in conducting a sectoral environmental assessment. The SEA included the establishment of environmental priorities, the identification of appropriate mitigation measures, estimation of the costs of these measures, and the drawing up of an implementation schedule (see Box 12). The findings from the SEA were introduced into the mining companies' operational plans. Specific environmental performance benchmarks set for the second-tranche release of the loan included satisfactory implementation of the agreed business plans and specific environmental performance results. The timetable included a 5 percent annual reduction in the amount of fees and fines incurred by the mining companies for solid waste surface discharges between 1998 and 1999 and a 10 percent reduction from the 1997 level in the saline content of water and solid waste generated. (The latter is a sectorwide benchmark applied to all ongoing mine operations, including those being privatized.)

### Box 12. Environmental assessment for the Poland Hard Coal Sectoral Adjustment Loan

The sectoral environmental assessment (SEA) for the Poland Hard Coal SECAL included the following components:

- Guidelines for a steering committee that will evaluate individual remediation plans submitted by the mining companies
- A remediation program, including actions to improve environmental performance, to be submitted by the mining company as a condition for initiating the implementation of financial restructuring, debt rescheduling, or writeoff with creditors
- Mine-by-mine analysis of the legal situation and details concerning environmental compliance with all of the country's requirements for environmental impact assessments, environmental audits, operating permits, and so on
- Information regarding the environmental status of each mine and the environmental impact of its past and present operations
- Details on the current environmental liability of each mine
- List of priority pollution control measures for each mine, with estimated costs and an implementation schedule
- Training for mining company personnel and local authorities on implementation of environmental remediation programs and monitoring measures.

The SEA was prepared in accordance with World Bank environmental assessment requirements. All affected parties were consulted in accordance with the relevant World Bank policies.

*Source: Yoda 2000.*
environmental agreements and requirements; and establishment of financial mechanisms to cover the government's obligations for remediation.

**Summing up**

- The environmental aspects of privatization programs are important to sustainable private sector development and good environmental management. There are two main reasons for this. First, environmental issues are often key elements of privatization deals, particularly in environmentally sensitive areas. As some of the case studies have shown, unresolved environmental issues can become deal-breakers or major causes of delays and disputes both during and after privatization. Second, environmental provisions (or the lack thereof) in privatization agreements can influence strategic choices about future investment plans, technologies, and suppliers and can have long-lasting impacts on the environmental performance of the enterprises and the overall environmental outcomes of privatization programs.

- With the role of the private sector increasing in many areas of the economy, it is essential that the Bank's projects and programs harness the role of the private sector in driving sustainable development. There are many good examples of how Bank assistance has helped countries improve environmental regulatory frameworks and create conditions for better environmental management. Many projects and programs have also facilitated privatization by addressing difficult environmental issues such as past environmental liabilities and by supporting improvements in environmental management.

- To promote sustainable outcomes, there is a need for a more systematic approach toward integrating environmental aspects into assistance for privatization, from projects to advisory services and technical assistance. In the case of specific investment projects with privatization components, tools such as audits, environmental assessments, and environmental management plans have been widely used, and numerous good practice cases can be drawn on for guidance. The application of environmental safeguards to adjustment loans with privatization components, however, poses serious challenges. Environmental aspects should be systematically integrated into privatization programs whenever feasible, but the extensive environmental assistance provided in some cases in the past cannot be expected in all operations. Where past environmental liabilities are large, or where weak environmental regulatory frameworks threaten significant mismanagement of natural resources after privatization, focused environmental programs are needed.

- The characteristics of privatization programs, their sectoral coverage, and the extent of Bank involvement influence the potential environmental assessment tools and the environmental assistance approaches to be applied. The broader the privatization program is, the less feasible it becomes to apply environmental assessments or audits case by case. This makes it all the more important to assess and strengthen the environmental regulatory and institutional framework, its links with the privatization process, the environmental aspects of contractual arrangements, and the capacity of environmental agencies to oversee and enforce the implementation of the environmental requirements set for the privatized enterprises. (Box 13 provides a list of questions to be raised in a general assessment.) These tasks, in turn, call for systematic and up-to-date information on the environmental regulatory and institutional framework, targeted capacity development, and monitoring of the environmental outcomes of privatization programs.

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**Box 13. Checklist for assessing the environmental framework for privatization programs**

*Environmental information.* Is information available about the company's past environmental liabilities and current environmental record?

*Environmental liabilities.* Who is responsible for past environmental liabilities? Are there clear provisions covering this point in the privatization law?

(continued)
Box 13. Checklist for assessing the environmental framework for privatization programs *(continued)*

**Remediation.** Are there clear guidelines as to what should be cleaned up, and to what extent? Who should carry out the remediation? How should it be financed?

**Environmental performance requirements.** Are there clear environmental regulations for ongoing operations?

**Compliance period.** Is there an agreement on the date by which the company should be in compliance with all environmental requirements?

**Institutional issues.** Do environmental, privatization, and other regulatory agencies coordinate the environmental provisions of privatization and their oversight?

**Public consultation.** Are procedures in place for stakeholder consultations?

**Conflict resolution.** Are there agreed procedures for resolving environmental disputes after privatization?

**Monitoring/oversight.** Who is responsible for monitoring compliance with contractual obligations, in general, and with environmental obligations, in particular?

**Enforcement.** What is the capacity and past record of environmental authorities as regards enforcing environmental regulations and implementing environmental management plans?

*Source: Authors' assessment*
Lessons and Conclusions

Attention to the environmental and social aspects of private sector development is increasingly seen as an integral part of sustainable development. Business leaders around the world are starting to recognize that the financial, environmental, and social aspects of business performance are all important elements of shareholder value—as expressed in the triple bottom line concept. The challenge now is to learn from past experience and make the most of the potential of privatization to support environmentally sustainable outcomes.

Understanding the links between privatization and environmental performance

Over the past several years, thinking about the environmental impacts of privatization has gone through an evolutionary process, mirroring the more general debate on the relationship between private capital flows and environmental problems. Initially, when large privatization programs were beginning, some viewed privatization and environmental objectives as incompatible. This perception started to change as experience demonstrated that the environmental performance of formerly state-owned enterprises often improved after privatization and that taking care of environmental issues could result in more successful privatizations.

Privatization can provide an opportunity to improve the environmental performance of previously government-run operations through more efficient use of resources, expanded access to capital, increased investment in cleaner technologies, exposure to foreign environmental management and market requirements, and greater regulatory freedom. Various privatization methods affect environmental outcomes in different ways. It must be kept in mind, however, that without an effective environmental regulatory system and incentives for good environmental performance, only a portion of the opportunities for environmental gains from privatization will be captured. The cases described in this report point to important lessons on how to structure and carry out privatizations so as to facilitate environmental improvements and sustainable outcomes.

Further work is needed on several aspects of the links between privatization and the environment. The questions shade into more general issues concerning private capital flows and the environment:

- How should governments and societies shape market frameworks that do not merely punish bad environmental behavior but provide positive incentives for environmental improvements by profit-seeking investors?
- What information should governments require or private investors supply concerning the environmental aspects of firms’ performance?
- When and how should public and private resources be combined to deal with acute needs that neither sector can address alone?
- How can civil society become a constructive partner in shaping government regulations and private enterprise behavior?
Using the links

Pressures to integrate environmental considerations into privatization agreements can come from investors, governments, civil society, and other stakeholders. Given proper procedures and commitment, arrangements that promote environmental improvements in the privatized operations can result in positive development outcomes. A transparent public dialogue with civil society and key stakeholders about the environmental and social aspects of privatization is important in ensuring the sustainability of privatization agreements and avoiding future conflicts.

The influence of investors

Market incentives can foster improved environmental performance. Examples are competitive pressures for efficient use of raw materials and customer pressure for "clean" products. Firms will respond according to their ability and the commercial benefits to be captured. The effect of these commercial incentives is greatest in ongoing operations, particularly if the reduction of pollution or improved resource use is compatible with increased production efficiencies. Environmental management systems and environmentally responsible corporate behavior are increasingly seen by private companies as integral parts of good management that help increase shareholder value. Indeed, the triple bottom line concept reflects a growing trend toward seeing the financial, environmental, and social aspects of business as key elements of sustainable business development.

International investors often require attention to environmental issues during privatization. Even if national governments do not consider environmental issues during the privatization process, reputable private investors will require it. International investors, particularly those operating in countries with strong environmental regulations and public scrutiny, recognize that they are vulnerable to public criticism, damage to their reputations, and financial risk unless they understand and manage environmental risk as part of their investments around the world. Given their wealth, technology, and management skills, investors with reputations to protect are very attractive to many governments.

Investors' needs have to be considered but should not dominate the privatization process. Investors are interested in managing the risks posed by environmental issues and capturing the opportunities presented. They would, naturally, like to see other parties take responsibility for dealing with the risks, and they will seek their own advantage in negotiations on the standards to be met, the timetable for doing so, and the penalties for failure. If investors are able to quantify the risks and opportunities, they will reflect them in their bid; if the risks and opportunities are vague and open ended, the investors will reduce the bid. Except in rare cases, the question of whether high-priority local environmental issues have been dealt with during the privatization process is irrelevant to private investors.

Governments have to be prepared to negotiate environmental conditions during privatization. Historical contamination poses difficult issues, as there is little private return on the investment (unless the value of the cleaned-up land outweighs the remedial costs). Frequently, investors seek to leave responsibility for historical problems with the government. Since many governments have no experience in negotiating environmental provisions and assume that historical environmental problems will never really need to be addressed or will not cost much to remedy, they will often agree to investor protections without much thought to the implications for the future.

Environmental requirements have to be clear and predictable to reduce investor risk. Governments seeking to address local environmental issues have an interest in identifying cost-effective methods and resources for meeting their objectives. The privatization process offers many opportunities for governments to work toward their environmental goals. For example, governments may require that the new owners improve the environmental performance of continuing operations, and they may apply some of the privatization proceeds to reducing acute pollution risks. As long as such requirements are clear and predictable, investors can build them into their offers and investment plans. Unpredictable and changing rules increase investor risk and ultimately reduce the expected revenues from privatization. Once the company is sold to private investors, the government cannot easily add new requirements.

The regulatory role of governments

After the government sells a firm, it cannot just wash its hands and walk away, if it is serious about addressing the pressing local environmental issues associat-
ed with the privatized operations. It has to move from being the "doer" to being the enabler and overseer of private activity. This transition, requiring as it does a balance between letting the market function freely and intervening when important public goals are at stake, is difficult for many governments. It is smoothest when the frameworks for market activity are clear and operate predictably and transparently—a condition that may not be easy to meet.

Environmental monitoring, conflict resolution mechanisms, and enforcement are essential conditions for ensuring environmental improvements. Commercial interests and voluntary initiatives to improve environmental performance are not enough to ensure good environmental performance and compliance with environmental regulations; an effective environmental monitoring and enforcement regime is needed. Some of the requisite regulatory actions involve changing incentives for private behavior. This may mean helping to promote “green consumerism,” assessing and collecting realistic charges for using environmental resources such as water, or requiring that certain emissions standards be met. A wide range of policy tools is available for helping to integrate environmental considerations into market frameworks.

Even after privatization, considerable opportunities exist for combining public and private collaboration to address environmental issues. Fixing environmental problems does not just take cash; it also requires knowledge, materials, labor, and the efforts of individuals. If the privatized firm becomes successful, it will possess many of these resources. Depending on its business goals, it may view itself as a long-term citizen of the local community. Its commercial incentives will include building relationships with its customers and neighbors, many of whom may care about local environmental issues. Focusing on a specific set of problems will help alleviate mutual mistrust, as will participation by a facilitator or convener respected by a number of groups. Targeting the discussion on how each group can invest something of value to achieve a shared goal will prevent the effort from drifting into platitudes or recriminations and will increase the likelihood of progress.

The bottom line

The privatization of state-owned enterprises has the potential to improve environmental performance and can be so structured as to increase the likelihood and scale of such improvements. This is not to say that privatization always leads to better environmental performance or that the magnitude or duration of the improvements is always great. The conditions discussed in this report need to be met if the opportunities created by privatization are to be realized.

Initiatives for environmental capacity building and private sector development can be mutually reinforcing if clear environmental regulations and tools are introduced before large-scale privatizations take place and if environmental considerations are systematically integrated into privatization programs. The World Bank, through its lending and nonlending services to client countries for the support of privatization programs and improved environmental regulatory frameworks, is in a strong position to assist client countries in improving the environmental sustainability of privatizations.
Appendix A

Azerbaijan — The Promise and Drawbacks of an Economy of Natural Resources

Like all the countries of the former Soviet Union, Azerbaijan is struggling with a legacy of environmental damage exacerbated by the severe contraction of the economy after the break-up of the Soviet Union. It began its transition to a free-market system later than many other countries in the region, in large part because of the hostilities with Armenia in the first half of the 1990s. Its privatization program, particularly for the larger enterprises, is still at a relatively early stage.

Economic background

Since 1996, Azerbaijan has made tangible economic progress. Gross domestic product (GDP) has shown consistent growth, and inflation has declined. Still, serious economic problems remain. Unemployment is high—according to some estimates, up to 29 percent of the working population—and per capita income is low. Major chemical and other manufacturing plants are operating at very low rates, if at all, and usually with obsolete equipment. Agricultural productivity remains depressed, and many of the country’s traditional export markets in the former Soviet Union have collapsed. Exports to Western markets tend to be dominated by commodity products such as oil. There are few exports to markets known for “green consumerism.”

Foreign direct investment (FDI), mostly in the oil sector, has increased; international oil contracts accounted for 80 percent of foreign investment in 1996. Foreign investment is reported to have provided over 70 percent of total investment in Azerbaijan’s economy in recent years.

Since 1994, the state oil company, SOCAR, has entered into production-sharing agreements (PSAs) with a number of international oil companies. These agreements have driven the huge rise in FDI. Most are for the development of new fields, but some are for upgrading existing fields and facilities. The Azerbaijan International Oil Consortium (AIOC) has been developing the Chirag oil field and exporting oil through an existing northern pipeline and a new pipeline that runs through Georgia. The Caspian International Oil Corporation (CIPCO), the second international consortium contracted to develop Azeri crude, operated in the Caspian Sea area, but its wells did not produce commercially viable quantities of oil, and the consortium has terminated its operations in Azerbaijan.

Although investment in the oil industry has been an important factor in helping to turn the economic tide, concern is growing over the need to diversify the economy and foreign investment. The government is actively working to attract new investors, but Azerbaijan may be unable to attract the funds it needs until investors can be guaranteed fair and consistent commercial practices. The foreign investment environment in Azerbaijan is complicated by the unstable political situation, the lack of an effective legal system, an extremely bureaucratic regulatory structure, and difficult market conditions. In addition, according to Transparency International, Azerbaijan ranked
96th of 99 countries (tied for third worst) on the Corruption Perception Index which indicates serious weaknesses with governance.

**Key environmental concerns**

The principal sources of pollution are the same oil, gas, and chemical industries that are looked to for financing Azerbaijan's economic and environmental development. Other causes of environmental degradation are the use of toxic pesticides in agriculture, emissions from the smokestacks of industrial Sumgayit (a satellite city of Baku), untreated sewage and industrial wastes dumped into the Caspian Sea, and the burning, deforestation, and land mines associated with the war with Armenia. Although the economic contraction brought about a significant reduction in continuing emissions in the first half of the 1990s, there is reason to be concerned that, with economic recovery, emissions levels will rise again, as is already happening in road transport.

There is no widespread public or governmental concern about environmental issues and essentially no enforcement of environmental requirements. A few rather weak local environmental nongovernmental organizations (NGOs) exist. Interest in the region on the part of international environmental organizations is relatively small, and there is little demand for “green” consumer products. Yet, broad public unease about the presence of toxins in agricultural products indicates that people can be deeply concerned about environmental and health issues.

Azerbaijan's national environmental action plan (NEAP) identified two major environmental priorities that bear on privatization:

1. **Severe industrial pollution from state-owned enterprises on the list to be privatized.** Outdated technology and malfunctioning or nonexistent pollution prevention and abatement equipment are often to blame for poor performance in controlling pollution. Although the decline in industrial output may have improved environmental conditions, pollution intensity has increased in many old enterprises. Air pollution from power plants, industry, and vehicular traffic is a serious environmental concern in Sumgayit, Baku, Ganja, Ali-Bayramly, Mingachevir, and other cities. In addition, toxic waste accumulated in areas close to human settlements poses threats to health and environmental resources.

2. **Environmental concerns related to the Caspian Sea.** Several other priority issues, including oil pollution and declining fish stocks, affect the Caspian Sea, the site of major new investment in oil exploration and production. Decades of oil production around Baku have left heavily contaminated areas, and the waters off Sumgayit are virtually biologically dead. Although a few industries recycle their wastewater, most have no treatment facilities, or inadequate ones. Municipalities frequently discharge their wastewater directly into the sea without any treatment; Baku discharges an estimated 30,000 cubic meters of untreated municipal waste daily into the Caspian Sea.

**The privatization record and environmental issues**

Since the beginning of the privatization program, about US$80 million in revenue has been generated from sales. Of this, nearly half has come from the sale of small enterprises. By mid-1999, about 950 medium-size and medium-large enterprises and nearly 22,000 small state enterprises had been privatized. Many enterprises were sold to the individuals already involved in running them, and many have encountered severe economic difficulties since being privatized. Joint ventures with foreign investors are a preferred method for addressing at least some of the commercial pressures facing these newly private businesses.

Small, medium-size, and some larger commercial or industrial enterprises, as well as farming cooperatives, were the targets of the First Privatization Plan (1996–98). Some firms, particularly the smallest, were auctioned off for cash. Others were offered in exchange for mass privatization vouchers distributed to Azeri citizens. A relatively small number of enterprises were sold to foreign investors using voucher options purchased from the government. Finally, some companies were sold on a case-by-case basis in exchange for cash and for commitments to make future investments. For example, the Karadag cement factory in Baku was bought by an international consortium, Karadag Holding Ltd., which consisted primarily of Schorr, a U.S. investment group, and British Atlas Cement. The new owners agreed to pay US$2 million to the state, take on US$0.5 million in debt, and invest US$22.8 million in the factory over the succeeding 30 years.
Drafts of the Second Privatization Plan (2000-02) call for the case-by-case privatization of strategic state enterprises, including telecommunications, banking, chemical industries, and energy, but implementation of the plan has been delayed. The government appears to wish to maintain control over the sectors that confer the most political and economic power. In addition, many of the larger industrial enterprises face huge problems with markets, technologies, labor, and poor environmental performance that make them very difficult to sell for prices anywhere near what the government believes they are worth. If buyers are found, much will depend on whether the new owners have the investment capital and access to markets needed to increase production efficiencies. If they do, such improvements are likely to improve emissions intensities, as well.

By the end of 1998, over 7.5 million privatization vouchers had been distributed. Only 10 percent have been used, however, in part because of delays in the privatization program for the larger enterprises. As a result, the market for vouchers has collapsed. In 1999 vouchers with a face value of US$10,000 were being offered for a mere US$10.75 (Azeri Times, July 6, 1999). The vouchers and options already issued were set to expire in August 2000.

Environmental concerns are not considered at all in most privatizations, except in case-by-case privatizations in the oil sector. In interviews in 1999 environmental officials confirmed that they had had virtually no involvement in any privatizations, although in 1995 they had recommended that environmental audits be conducted as part of the process. The 1995 Privatization Law states that any environmental liabilities associated with a privatized enterprise pass to the buyer and are not retained by the government. (Box A1 lists relevant laws concerning privatization and environmental matters.) As a result, no environmental data on the enterprises under privatization have been collected, and essentially no environmental agreements have been included in any of the non-oil privatizations. Many of the oil PSAs, however, reportedly do contain extensive provisions on the environmental standards to be met (see Box A2 for an example).

Individuals interviewed for the study generally believed that the international oil consortia were better environmental performers than SOCAR. The consortia had more investment funds available than did SOCAR, they used more modern technology and management methods, and they were mostly building new facilities. All these factors could be expected to lead to reduced product losses (and therefore reduced discharges) per unit of production. In addition, the State Committee on Ecology had imposed extremely tight environmental standards on the new oil operations—some of them reportedly not only stricter than those under which SOCAR operates but also more stringent than those required by Western European countries for oil production in the North Sea.

Additional improvements in performance may come about because companies believe they need to be seen as environmentally responsible by the global environmental and media community if they are to expand into new areas of production in ecologically sensitive regions such as the Caspian Sea and gain access to international finance for this expansion from the EBRD, the International Finance Corporation (IFC), and international commercial banks. Some international firms, such as BP Amoco and Statoil, have taken the lead on environmental issues as a strategic

**Box A1. Azerbaijan's legal framework for investment and environment**

Azerbaijan's main investment and environment legislation to date includes:

- **Law on Protecting Foreign Investment in Azerbaijan** (1992)
- **Law on Protection of the Environment** (1992)
- **Law on the Introduction of Pollution Charges** (1992)
- **Law on Investment Activity** (1995)
- **Law on the Privatization of State Property** (1995)
- **Law on State Registration of Legal Entities** (1996)
- **Law on Subsoil Reserves** (1998)
- **Law on Energy** (1998)

**Sources:** Baker and McKenzie 1999, EBRD 1999a, USACC 1999.
Box A2. Environmental safeguards in an oilfield project

The European Bank for Reconstruction and Development (EBRD) is providing financial support for the early phase of production in the Chirag oilfield, operated by the Azerbaijan International Oil Consortium (AIOC). A total of US$200 million, from the EBRD and commercial bank funds, is to be lent to five of the AIOC’s shareholders. The loan supports the commercial development of the Chirag offshore oilfield; transmission of oil by an undersea pipeline to an onshore terminal at Sangachal; transmission of gas to the state oil company, SOCAR; and export of oil from Sangachal either north to existing Russian pipelines or west through new pipelines in Azerbaijan and Georgia to the Black Sea.

As part of the loan, the EBRD required extensive environmental reviews and public consultations. Environmental impact assessments (EIAs) were prepared on key project components: drilling, production, the northern-route pipeline, the western-route pipeline, and new onshore facilities. Numerous media announcements were made concerning the four public meetings held in Azerbaijan and Georgia during preparation of the assessments, and the availability of the reports was publicized. Copies of the EIAs are available in over 25 local libraries, as well as at EBRD headquarters.

Also required is an environmental action plan, including an emergency response plan and environmental management systems. Steps to be taken under the plan include continuous monitoring of ambient environmental conditions; reinjection or treatment of the formation water that accompanies oil production; establishment of exclusion zones around the platforms and pipelines; creation of a closure fund to help cover decommissioning costs; and regular reporting to the EBRD on environmental matters. The EBRD believes that the project meets international standards for modern international oil activities.

Source: EBRD 1999b.

Lessons and future challenges

1. Although the government was not prepared to address systematically the environmental issues of privatization, international investors often required it, particularly in case-by-case privatizations in the oil sector. In this sector, the environmental performance of international companies is under strong scrutiny from the public and civil society in Western countries. As a result, many of these companies maintain uniform standards for environmental procedures and management practices in their international operations.

2. The government appears to be willing to impose more stringent environmental requirements on foreign companies than on domestic ones. Strict environmental requirements may be justified to protect people’s health and fragile ecosystems, and they may be acceptable to investors if these requirements are part of the privatization agreement. They could, however, lead to conflicts and harm the long-term prospects of attracting foreign investors if they are imposed unexpectedly after the privatization and if environmental requirements are applied unevenly to foreign investors.

3. Several of the most serious concerns about the environmental impacts of past or ongoing operations are linked with SOCAR. Clearly, significant gains from improved environmental performance could be realized by reducing the impact of SOCAR’s historical and continuing operations. Obsolete equipment, inadequate oil storage techniques, the flaring of natural gas, and the presence of ponds of brine that seeps into the soil, groundwater, and surface water bodies are just some of the problems generated by over 50 onshore and offshore oilfields and nearly 11,000 wells.

4. Many international investors in the oil business have substantial experience in other countries in developing and applying cost-effective ways of addressing onshore oil contamination. Some of those techniques will be applied in the AIOC’s new facility for disposing of drilling wastes. Access to information on these methods and to the equipment required could be an invaluable contribution to improving domestic environmental management practices. In addition, many of the companies have training programs, which they use in their facilities elsewhere, on preventing onshore
contamination. If the government is interested in changing SOCAR’s approach to environmental issues, particularly as part of a drive toward increased efficiency in production, the broad application of these training programs would be of great value.

5. Should SOCAR be privatized (as is suggested in at least one draft of the Second Privatization Plan), and should the government be interested in attracting the greatest number of international oil companies as bidders, the scope of the accompanying environmental risks will need to be reviewed, and responsibilities for addressing them will have to be assigned. Improvements in continuing operations are likely to occur as new investments are made to increase productivity.

6. The most difficult issue will be historical pollution. A determination will have to be made as to which areas pose so significant a risk to public health or the environment that they should be cleaned up immediately. For other areas, it may be sufficient to halt new pollution and let nature do the rest. Cost-effective ways of mitigating the real risks will need to be identified, costs will have to be estimated, and responsibility for conducting and paying for the work will need to be assigned.

7. Several options are available for addressing these issues in any particular transaction. Most of them will require the Azeri government either to change its requirement that the buyer assume all environmental liabilities or to accept a much lower price than it might hope, unless it specifies and quantifies the actions required of buyers and is willing to honor those commitments.
The socialist system left Bulgaria with a serious environmental legacy. Unsustainable environmental management practices resulted in environmental hot spots around large industrial centers, with unacceptably high levels of exposure to pollution and hazardous substances, as well as other environmental problems. Soon after the transition to a market economy started, Bulgaria adopted the Environmental Protection Act of 1991, which provided a new foundation for environmental management. It revised the system of standards, introduced the principles of pollution prevention, provided for access of the public to environmental information, and mandated environmental assessment procedures and requirements for new investments.

Bank assistance for pollution management in Bulgaria

The World Bank has been supporting Bulgaria in addressing its environment issues since the country joined the Bank in 1991. Together with other development agencies, the Bank assisted with the preparation of an environmental strategy study in 1993 and an environmental strategy update and follow-up study in 1995. These studies identified priority areas for environmental action, including improvement of conditions in environmental hot spots.

The MDK Copper Smelter and its surrounding areas, including the Pirdop and Zlatitsa municipalities, were identified as among worst environmental hot spots in the country. In 1996 the World Bank and the U.K. government supported a technical feasibility study that clearly pointed to the potential for significant environmental improvements through changes in production processes, technologies, and management. The Bank team emphasized that such improvements would require fundamental changes in the company’s incentive structure and ownership and suggested the sale of the company to a strategic investor.

The Environmental Remediation Pilot Project (ERPP)

Following a serious economic crisis in 1996-97, Bulgaria’s new government embarked on an ambitious macroeconomic stabilization and reform program that included the privatization of state-owned enterprises (SOEs). As part of this program, in 1997 the government sold its majority ownership of the MDK Copper Smelter to the Belgian firm Union Minière (UM).

At the time of the sale, the company was violating Bulgarian environmental standards for emissions and had significant environmental liabilities. The most serious problem was a dam that was holding back a 530,000 cubic meter sludge pond (known as “the blue lagoon”) containing arsenic and other heavy metals. The dam was almost at capacity, and it was unstable and leaking. An overflow or collapse could have contaminated the main source of drinking water for more than 1 million people.
Both the UM and the government of Bulgaria welcomed the World Bank's involvement as a neutral party in discussions on environmental issues. Before the sale was completed, environmental remediation and compliance plans were negotiated, with the Bank's assistance. The compliance plan set out a four-year schedule for the plant to meet Bulgarian environmental standards, which was to be accomplished by changing production processes, installing pollution controls, and improving environmental management. From the total purchase price of US$85 million, a US$25 million escrow account was established.

Under the implementation agreement signed by the UM and the government, the UM is implementing the remediation of past environmental damages on behalf of the government (which remains legally responsible for historical damages). The remediation measures are financed from the escrow account established at the time of the sale, and the World Bank is reimbursing the government for the expenditures through a US$16 million loan under the Environment Remediation Pilot Project (ERPP), approved in 1998. Bulgaria's National Trust EcoFund provided US$4 million in parallel financing for the emergency cleanup that aimed at eliminating the immediate hazards.

The implementation of remediation and compliance programs is well under way. Measures taken include reinforcement of the dam of the “blue lagoon,” demolition and cleanup of the site of an old sulfuric acid plant, and cleanup of the residue storage facility. The closure of the “blue lagoon” is progressing well. As a result of these and other improvements, the risk of leakage and water contamination from the pond has been significantly reduced, water and air emissions have been abated, and ambient environmental conditions around the plant have improved. The company is currently in compliance with water emissions requirements for pH and heavy metals, it has reduced water consumption and air emissions, and it has introduced an automated environmental monitoring system. In order to achieve full compliance with environmental regulations, the company has launched an environmental management plan, to be implemented over the next three years.

The UM has maintained a good relationship with the neighboring communities of Pirdop and Zlatitsa. The remediation program and its implementation were thoroughly discussed with these communities during the public consultation processes mandated by Bulgarian law, and it is strongly supported by them.

From piloting to mainstreaming – The Environment and Privatization Support Adjustment Loan (EPSAL)

The Bulgarian privatization program accelerated in 1999. The Second Financial and Enterprise Sector Adjustment Loan (FESAL II) provided support for the government's structural reforms, including the divestiture of SOEs, the development of the banking system, and the restructuring of the energy sector. The sale of the largest SOEs was assisted by the services of international privatization agents under the Privatization Advisors and Transactions Agents (PATA) program financed by donors and the Bank.

Building on the lessons of the ERPP, the Environmental and Privatization Support Adjustment Loan (EPSAL) was designed to assist the Bulgarian government in addressing the environmental aspects of the broad privatization program in a systematic manner. There were three main components:

1. The policy and regulatory reform component included (a) amendments to the Privatization Law to clearly exempt the buyers of state-owned enterprises from liability for past environmental damage; (b) clarification of procedures and financing mechanisms for addressing state liability; and (c) revisions to the Subterranean Resources Act and the Water Act to clarify responsibilities for past contamination, environmental assessments, permitting, and other issues important for addressing environmental liabilities and the ongoing environmental performance of privatized enterprises.

2. The framework for integrating environmental liabilities into privatization component included (a) the introduction of systematic auditing and environmental impact assessment (EIA) requirements for all major industrial enterprises prior to privatization; (b) the development of a risk assessment methodology mandated for EIAs; (c) preparation of remediation plans; and (d) the inclusion of execution agreements in sale purchase agreements.

3. The framework for improving environmental performance component included (a) the introduction and gradual phase-in of Integrated Pollution Prevention and Control regulation and permitting (see Box B1) and (b) the preparation and implementa-
tion of environmental compliance plans to bring privatized enterprises into compliance with environmental regulations.

Box B1. Harmonizing environmental regulations with the European Union

In 1993 Bulgaria signed an association agreement with the European Union (EU) establishing a framework for economic and political cooperation in a number of areas, including environment. Under the agreement, which came into force in 1995, the government is committed to harmonize its laws, regulations, standards, norms, and methodologies with those of the EU.

As part of the agreement, the government is strongly committed to bringing its legislation into compliance with the EU environmental body of laws and to establish a modern environmental management system. One of the most substantial tasks in adopting the EU environmental management framework is to implement the provisions of the EU Integrated Pollution Prevention and Control (IPPC) directive, which involves a shift from media-based regulation and permitting to an integrated approach.

Source: Authors' assessment.

An Interministerial Expert Council was established as an interagency coordinating body to oversee the implementation of the EPSAL. In connection with the loan, the EU provided technical assistance to the government to carry out environmental and cost assessments of the remediation plans in enterprises with serious environmental issues. The EU also provided technical assistance to the Ministry of Environment and Water (MOEW) to strengthen its capacity in environmental assessment, auditing, and enforcement. Several other development partners have collaborated with the Bank in supporting the broad objectives of the EPSAL.

Lessons

1. Simultaneous benefits. The involvement of the Bank in these projects provided comfort to strategic investors, facilitated the privatization, and encouraged the participation of other investors by reducing the uncertainties and the risks of investment.

2. Commitment building. The preparation and implementation of the ERPP and EPSAL raised awareness and strengthened government commitment to address environmental issues and to facilitate improvements in environmental management in the industrial sector. The Bank’s support for addressing past environmental liabilities and piloting integrated permitting for large industrial facilitates has helped accelerate compliance with EU environmental requirements and the harmonization process.

3. Capacity building. The preparation of projects has been effective in strengthening the regulatory and enforcement capacity of the MOEW and in facilitating cross-institutional collaboration of government agencies. Bank support also played a major role in fostering public-private partnership for environmental compliance and encouraged private investment in environmental improvements. The systematic preparation of environmental audits, assessments, and remediation and compliance plans has strengthened the capacity of local environmental experts and consultants.

4. Public support. The program for remediating environmental hazards in “hot spots” gained strong support from the public, as was demonstrated during the public consultations about remediation plans.

5. Broad impacts. The mechanism promoted under the ERPP and EPSAL, which combines support for remediation of historical pollution with enhanced compliance in order to improve environmental performance, is now being extended to a larger number of industries in Bulgaria.
Appendix C

Germany's Treuhandanstalt — Environmental Assessment as an Integral Element in Privatization

In 1990 Germany established the Treuhandanstalt (THA) as an independent government agency with the task of converting the former East German centrally planned economy into a modern market economy. Within a short time, the THA developed into a large holding company, with more than 4 million employees, that managed about 35,000 economic entities.

Privatization progressed rapidly; in 1993–94 up to 75 companies a day were privatized. The ownership of most industrial plants in the former East Germany changed hands. About 500 companies were sold to foreign investors. Many of these companies, especially in heavy industry, had significant environmental problems, and the THA established a staff of 400 specialists to deal with environmental issues. Of the more than 30,000 privatization contracts, over 4,000 contained explicit references to dealing with environmental damages.

Ongoing environmental liabilities were transferred to the new owners. Although the THA usually retained the responsibility for past damages, the legacy of contamination was a serious obstacle to rapid privatization.

Quick assessment

To reconcile the conflict between the need for detailed information about the extent of liabilities and the goal of rapid sale, the THA (and its successor, the Bundesanstalt für vereinigungsbedingte Sonderaufgaben) applied a quick-assessment method to estimate past environmental liabilities and remediation measures. The methodology focused on contamination originating from industrial and commercial use that posed a danger to public health and safety. Secondary subjects of protection included soil, air, plants, and animals.

It was found that 89 percent of past environmental damages had a direct relation to water resources (79 percent to drinking water) and that more than 9 percent showed direct evidence of effects on human health (Table C1). Various pathways were implicated in the environmental risks of privatized enterprises.

Table C1. Environmental risks and pathways

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Percentage of all assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil → humans</td>
<td>1</td>
</tr>
<tr>
<td>Soil → atmosphere → humans</td>
<td>10</td>
</tr>
<tr>
<td>Soil → groundwater → humans</td>
<td>10</td>
</tr>
<tr>
<td>Soil → groundwater</td>
<td>79</td>
</tr>
</tbody>
</table>

Source: Dodds and Wächter 1993.

Enterprises were classified into four categories on the basis of an analysis of the operational and production history of the plant; the inventory of contaminants; geographic, geological, and hydrogeological conditions; experience regarding contaminants; and findings from a small additional sampling program (Table C2).
A cost-sharing mechanism was introduced to provide an incentive to minimize the use of the reserve by sharing 25 percent of the reserve amount not used.

A review of 205 assessments revealed that in only 6 percent of the cases did the remediation cost exceed 10 million deutsche marks (DM) and that more than 70 percent of the enterprises did not have significant past environmental liabilities. Quick assessments estimated the total amount of remediation at 10 billion DM. The actual cost came to 9.6 billion DM, indicating that the quick-assessment method yielded a realistic estimate.

### Lessons

The quick assessment method applied under the German privatization program provides a useful tool for assessing environmental liabilities before privatization. Several countries, such as Bulgaria, followed a similar approach. Many of the characteristics of the German privatization, however, made it difficult to apply its broad approach in other transition economies.

1. Comparison with the experience of other Central and Eastern European countries shows that the THA was under less pressure to generate revenues than other privatization agencies in the region (Paczi 1994).
2. The German government was willing not only to forgo privatization revenues but also to allocate additional resources for addressing environmental problems during privatization.
3. The overall environmental regulatory and policy framework was significantly stronger in Germany than in most transition economies.

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**Table C2. Risk categories and actions**

<table>
<thead>
<tr>
<th>Category</th>
<th>Action required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No risk</td>
<td>No need for further measures</td>
</tr>
<tr>
<td>2 No significant risk</td>
<td>No need for further measures</td>
</tr>
<tr>
<td>3 Clear risk</td>
<td>Need for remediation measures</td>
</tr>
<tr>
<td>4 Dangerous contamination</td>
<td>Immediate measures needed</td>
</tr>
</tbody>
</table>

Source: Dodds and Wächter 1993.

Remedies

When the quick assessment indicated potential liabilities, the following principles were applied:

- If the likelihood of adverse effects was remote, the original sale price was not reduced, and the THA promised to pay up to a reserved amount for remediation, if needed. The reserves were established as part of the companies’ opening balance.
- If environmental risk was likely, there were two alternatives. If the cost of remediation could be agreed on, the sale price was decreased, and the new owner became responsible for remediation. If the cost of remediation was not well established, the responsibility and the cost of remediation were shared. Generally, the purchaser was expected to bear at least 10 percent of the remediation costs.
- The opening balance of the enterprise was to include environmental reserves to cover the costs of expected environmental liabilities. THA did not have direct, unlimited liability to pay for environmental cleanup costs; the upper limit of its liability was the value of the company. If the costs were estimated to be higher than that, the company could be placed in bankruptcy, or the appropriate regional governments could offer financing.
- If the risk did not materialize during a certain period, the buyer paid the increased purchase price.
Appendix D

Kazakhstan—A Legacy of Pollution

Kazakhstan, with an area of 2.7 million square kilometers, is the largest landlocked country in the world and one of most sparsely populated (6.1 people per square kilometer). It is richly endowed with large reserves of oil and gas and with substantial mineral deposits. Because of its remoteness, during the Soviet period Kazakhstan was a regular destination for political prisoners. Its distance from potential export markets and the small size of its domestic market present difficult issues for the country.

Economic background

Kazakhstan was home to many of the Soviet Union’s “largest”—the largest mines, the largest chemical plants, the largest farms, and the largest testing facilities for nuclear, biological, and conventional weapons. Although stringent environmental standards were on the books for some of these operations, they were rarely met. The result is a historical legacy of environmental problems that are epic in scale.

The decline and dissolution of the Soviet Union had devastating effects on the Kazakh economy. Moscow was the primary source of investment capital, and 90 percent of Kazakhstan’s cross-border trade was with other Soviet republics. Most of the existing transport infrastructure was built to meet the needs of the Soviet Union, not those of Kazakhstan’s domestic market. As a result, many transport routes run through Russia.

Beginning in the late 1980s, with the breakup of the Soviet Union, the country experienced a prolonged decline in its gross domestic product (GDP). After a modest recovery in 1996 and 1997, GDP fell by 2.5 percent in 1998, followed by a small increase in 1999. By 1998, overall output had declined to 60 percent of the 1989 level, and wages were less than two-thirds of their 1991 levels. Further stress in the macroeconomic climate over the next several years is expected, particularly in light of a widening budget deficit.

Key environmental concerns

According to Kazakhstan’s national environmental action plan (NEAP), the most pressing environmental problems facing the country include environmental degradation in the Aral Sea and its watersheds; declines in the sturgeon population and in fisheries due to pollution and fluctuating water levels in the Caspian Sea; health hazards caused by the contamination of soil and water resources around industrial areas and at the nuclear testing sites at Semipalatinsk; water and air pollution in urban and industrial centers; and declining soil fertility.

The proposed exploration and development of offshore oil reserves in the northern part of the Caspian Sea are expected to have significant environmental consequences. Although there is considerable public concern about certain environmental issues, it seems to be focused on particular locations and to have limited political impact. Public pressure for more ef-
fective environmental programs appears to be weak, perhaps partly because of concern about jobs and economic growth.

The NEAP identified three major zones on the basis of environmental concerns:

- Zone A in the western part of Kazakhstan, along the Caspian Sea, where the major concerns have to do with oil exploration and production activities
- Zone B in the northeast, the most highly industrialized region, which suffers from pollution from the mining, metallurgical, and energy sectors (see Box D1)
- Zone C in the south, where agricultural practices have led to desertification and to loss of forests and natural areas.

**Kazakhstan’s privatization efforts**

The Kazakh government has undertaken a number of measures to liberalize its economy and take advantage of its huge natural resource base. These steps include making the tenge (the national currency) freely convertible to U.S. dollars; adopting many new statutes, including a tax code and a foreign investment law, in support of a market economy; reforming the financial sector; applying for membership in the World Trade Organization (WTO); and ratifying various bilateral economic treaties.

The 1991 move toward privatization in Kazakhstan was part of a package of reforms designed to move the country toward a market economy and out of economic stagnation. The national program for the commercialization and privatization of state assets and enterprises, introduced in March 1993, focused on a variety of privatization methods:

- The small-scale privatization program was aimed at the sale of assets and businesses with fewer than 200 employees in small retail and service establishments and at liberalization of the transport and wholesale sectors through dismantling, restructuring, and privatization. Most government-owned assets in this category were sold outright as property, although some were organized as joint-stock companies. By mid-1997, more than 16,500 enterprises had been sold.
- The mass privatization program was designed to transfer shares in most of the country’s medium-size and large enterprises (with 200-5,000 employ-
gram soon dissipated as it turned out that those holding coupons could neither sell them nor participate directly in auctions but could only contribute them to the privatization investment funds (PIFs). The government issued approximately 1.6 billion coupons, of which 1.1 billion were eventually redeemed. (In other words, 85 percent of all citizens invested at least some of their coupons.) The eventual collapse of the PIFs, however, meant that many investors received no value for their investment. In 1999, 68 joint-stock companies were sold, most of them in the machine-building, construction, transport, communications, and technical services sectors.

- Case-by-case privatization of the largest and most prized enterprises frequently took the form of "management contracts" under which the investor took responsibility for the operations for a number of years, with an option to buy a portion of the shares at a later date. As of June 1998, major investments under the case-by-case privatization program included a joint venture by Philip Morris with the Almaty Tobacco Company; investments by AES, an American firm, in the power sector; the purchase by U.K.-registered Ispat of the Karaganda steel plant for US$225 million, with a pledge to invest another US$450 million; and the purchase of the Zhezkazgan copper plant by Samsung (Republic of Korea). The Belgian firm Tractebel bought Almaty’s electric power and heating facilities in 1996 and in 1997 purchased the rights to operate the gas pipeline network in southeastern Kazakhstan. Tractebel pledged US$150 million for the construction of a gas pipeline bypass around the section currently transiting the Kyrgyz Republic. Because of difficulties in raising utility rates to adequate levels, the firm was more than US$60 million in debt by 1998.

- The blue-chip privatization program, introduced on December 31, 1996, focused on 56 Kazakh enterprises, shares of which would be sold through the Kazakh stock exchange. Among the earliest enterprises to be offered as blue chips were the oil and gas companies Aktubemunaigas and Mangistaumunaigas; the communications company Kazaktelecom; Zhezkazgancvetmet, the largest copper combine in Kazakhstan and the seventh largest in the world; and chromium, titanium, ore, and coal plants. In the wake of the Asian and Russian financial crises, the pace of the program has slowed.

In addition, the government has actively sought private investment in the oil sector. The largest investment in that sector is the Tengiz project. On April 6, 1993, Kazakhstan and the Chevron Corporation entered into a joint venture to develop the Tengiz and Korolev oil fields on the northeastern Caspian Sea coast. Tengizchevroil (TCO) was formed as part of a 40-year, US$20 billion agreement, with Chevron holding 50 percent of the shares. Subsequently, other companies, including Mobil and LukArco, purchased some of Chevron’s shares. By 1998, investment in TCO had increased by a further US$1 billion. Ultimate development of the Tengiz and Korolev fields will involve construction of a new pipeline to transport the production to an export facility. Over the past five years, TCO has contributed US$50 million for projects that would benefit local communities, such as improved drinking-water systems and medical facilities. Chevron has helped secure from the European Bank for Reconstruction and Development (EBRD) US$72 million in loans, which is available for small and medium-size businesses in the region.

Other major oil transactions include the agreement for the development of the Karachaganak gas field; the Caspian Sea Consortium (OKIOC), formed to explore gas and oil reserves in the northern section of the Caspian Sea; the purchase of state oil companies by the Canadian-based firms Hurricane Hydrocarbons and Triton-Vuko; and the 1997 purchase by the China National Petroleum Company (CNPC) of a controlling (65 percent) share of the Aktyubinsk state oil company.

By the end of 1998 Kazakhstan had completed much of its privatization program. Aggressive sales of the remaining interests are unlikely to take place. The emphasis of the new privatization program for 1999–2000 was on improving the regulatory framework and wrapping up privatizations, with a focus on:

- Developing a law on state property, particularly rules for how the state is to use its remaining assets
- Retaining an ownership share and management presence in certain "national companies" in sec-
tors that include oil, railway and air transport, power distribution, and uranium processing
- Converting all national companies to joint-stock companies and increasing efforts to introduce efficient management systems
- Selling, by the end of 2000, the government's remaining interests in the blue-chip companies (mostly gas and mining companies)
- Reviewing postprivatization control and investment obligations in light of the financial crisis and movements of commodity prices, with an eye to renegotiation of certain provisions.

Environmental aspects of privatization

In the small-scale and mass privatizations, environmental aspects received essentially no consideration. None of the parties had any incentive to raise environmental issues. Direct investors in small enterprises were not inclined to seek more contact with regulatory authorities. Recipients of vouchers had little reason to worry that environmental issues would affect the value of their coupons and even less information with which to distinguish good from bad environmental performers.

Some investors, particularly certain foreign direct investors, were nevertheless concerned that after they had made long-term investments in production operations on the basis of certain cost and revenue assumptions, new environmental requirements would be imposed. They therefore tried to define the environmental requirements they would face so that the costs could be predicted and reflected in the bid price. In at least some case-by-case privatizations, the buyer conducted an environmental audit as part of its due diligence. The purchase contract then specified the requirements to be met and the pollution fees to be paid during the period within which the buyer was to bring the operations into compliance with Kazakh environmental standards. The government retained responsibility for historical pollution.

Certain multilateral investors in the private sector, particularly the EBRD and the International Finance Corporation (IFC), have required a similar approach. Both institutions must follow extensive internal environmental procedures when evaluating potential investments with significant environmental implications (see Box A2, Appendix A, for an example in Azerbaijan). Audits must be conducted, action programs for addressing any problems in ongoing operations must be agreed on, reports must be prepared, both at the time of the loan and regularly over its lifetime, and the reports must be made available to the public.

Making use of the opportunities for improvement

Some of the case-by-case privatizations of larger enterprises have led to demonstrable improvements in environmental performance. One of the most widely cited examples is the Ispat-Karmet steelworks (see Box D2). Other investors mentioned as having made substantial improvements in the environmental performance of formerly state-owned enterprises include AES, at its power stations, and Samsung, in its mineral-processing operations. Such foreign investors have both the incentive and the ability to improve an enterprise's environmental performance.

In the legal agreements for some of the larger case-by-case privatizations, the national government agreed to bear the cost of addressing any historical pollution caused by the firm being privatized. This provided greater certainty for "deep-pocket" investors concerned that they might be required to fund cleanups in the future, and it is consistent with the "polluter pays" principle. The problem is that privatization revenues have been absorbed by the general budget, and no clear financing mechanism exists to deal with the risks posed by historical contamination. Until recently, cleaning up existing contamination was not a high priority, and proceeds from privatizations went into general budgetary funds. Political pressure for at least some cleanups is growing, but it is not clear how they will be financed.

After privatization, opportunities still exist for using private investment to help address priority environmental issues. For example, environmentally sensitive private investors and environmental nongovernmental organizations (NGOs) can cooperate in improving environmental monitoring systems and compliance with environmental regulations. In Kazakhstan one of the international oil consortiums, OK-IOC, and a local environmental NGO, Green Salvation, are reported to be exploring the possibility of creat-
ing a shared database on the country’s environmental laws and regulations.

Training and capacity-building programs for improved environmental, health, and safety management systems represent another area of great opportunity. International private direct investors often require their local employees to participate in these programs, and it may be in their best interest to offer them to local officials and suppliers, as well.

Even if an investor’s existing incentives are not aligned with environmental priorities, the government can seek to change the incentives. Efforts along these lines are being considered in Kazakhstan, including tax and other incentives to promote improved operating efficiency, proper pricing of inputs such as water and energy, and collection of user fees.

Lessons and remaining challenges

1. The government was unprepared for negotiating the environmental aspects of privatizations in environmentally sensitive sectors. As of early 1999, representatives of the Ministry of Natural Resources and Environmental Protection were yet to be actively involved in preparing enterprises for

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**Box D2. Environmental improvements at a steel complex**

Ispat-Karmet, located in Karaganda, northeast Kazakhstan, is one of the world’s largest steel-making facilities and the only vertically integrated steel mill in the former Soviet Union. The steel plant was the biggest polluter in the region; its smoke plumes reportedly could be seen hundreds of kilometers away.

In 1995 the London-based LNM Group purchased the company from the government of Kazakhstan. At the time of purchase, the plant was struggling financially and suffered from an unreliable electric power supply. As part of the purchase agreement, LNM agreed to pay off US$50 million of the plant’s debt and to increase production. LNM also acquired a neighboring 435-megawatt power plant and 15 coal mines to help ensure an uninterrupted power supply.

The privatization agreements contained detailed environmental provisions. Steps were to be taken to bring future operations into line with Kazakh standards, while the government agreed to bear the responsibility for historical contamination. The company was given seven years to meet the standards, and pollution charges were to remain unchanged during this period. All of these agreements were made between the national government and the investor, excluding both local and environmental authorities. This arrangement became a source of continuing friction.

After privatization, the firm’s traditional barter system was replaced by hard-currency exchange, allowing Ispat-Karmet to start paying off its debts and to raise salaries. Production increased quickly, and in 1996 the company initiated a US$90 million investment program to restructure operations and modernize facilities.

The new investors had considerable experience in upgrading facilities and with the environmental and social aspects of company operations. Most of the new investment went into increased productivity, resulting in reduced emissions per unit of production. Old, outdated plants were closed, and new, sophisticated, computerized control systems were introduced. In addition, the company embarked on a US$830 million expansion program, with help from the European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC). These institutions together issued loans worth US$450 million to improve the company’s waste-recycling facilities and its water and dust treatment methods.

The Russian financial crisis severely affected Ispat-Karmet, reducing demand and leading to a 30 percent cut in production in 1998. (At that time, Russia was purchasing 11 percent of the company’s steel; the remainder was sold in 59 countries around the world.) As steel prices recover, the company’s prospects should improve.

Despite Kazakhstan’s difficult economic situation, the company continues to work toward reducing its pollution charges by meeting and even outperforming applicable standards. The only negative comments about Ispat-Karmet’s environmental record came from environmental officials concerned about the lack of local involvement in the privatization negotiations.

privatization. In cases when foreign investors required agreements on environmental issues (for example the Ispat-Karmet case described in Box D2), the conditions set for compliance appear to be more generous to the investor than in similar cases where governments were better prepared to negotiate (as in the Bulgarian case described in Appendix B). The way environmental issues were handled also gave rise to conflicts between national and local authorities.

2. Significant environmental issues are associated with enterprises that are slated for privatization but for which there are no buyers. Many of their production facilities use outdated technology and are on a scale too large for currently available markets. Although the economic crisis may have caused continuing emissions to drop substantially or to cease altogether, problems with historical contamination are often getting worse. As noted in Box 7, Chapter 2, this may be due either to lack of on-site controls or to the sale and removal from the site of contaminated materials.

3. In 1999 discussions were conducted on how best to handle the environmental implications of the proposed land privatization. The second draft of the Land Law provides that the ownership of forests, national parks, and other protected areas remains with the government. Although this provision is supported by many in the environmental community, there are parliamentarians and others who believe that these areas should be privatized. Even if the protected areas remain under state ownership, issues of national versus local control will persist. Potential private investors in ecotourism services associated with national parks have reportedly been deterred, at least in part, by conflicts between the de jure (national) and de facto (local) control of such areas.
In the late 1980s and early 1990s the Malaysian government became increasingly concerned about the environmental problems caused by sewage discharges and the failure of local authorities to invest in sewage collection and treatment. At the same time, the country was moving aggressively to privatize many government operations in an effort to reduce the size of the government, increase efficiency, and increase the shareholdings of native Malays (the Bumiputera).

In response to these concerns, a number of private companies created the Indah Water Konsortium (IWK) to offer the government a private, national solution to the sewerage problem. The Berjaya group, a large Malaysian conglomerate with close connections to the national government, had controlling interests in or strong links with two of the IWK’s shareholders and was the driving force behind the government’s agreement with the IWK. Key aspects of the IWK’s proposal were the reduction of capital costs through the use of decentralized systems and the prospect that more populous areas would help underwrite the costs of providing sewerage services in rural districts.

Consistent with its practice in some other privatizations, the government rewarded this private initiative with a grant of exclusive negotiating rights for a national sewerage concession. After a more detailed study of the concept by the IWK and preparation of the contractual and regulatory framework, the concession was awarded in December 1993. In 2000, however, in the wake of the East Asian financial crisis, the Malaysian government renationalized the sewerage sector, partly because of calls for help by financially strapped operators. This appendix reviews the course of the failed privatization (as of 2001).

Concession structure

The level of fees charged by the IWK for sewerage services was supposed to finance some or all of the capital expenditure program and to allow an internal rate of return on the company’s capital and operating costs of between 14 and 18 percent. This rate of return was apparently calculated, in part, by taking the returns used as benchmarks by pension fund trustees in Malaysia and adding a risk factor.

The IWK’s initial rate structures varied according to the type of user. For domestic users, the fee was calculated according to the assessed value of the property served and the amount of water used, subject to a minimum charge of approximately US$0.80 per month and a maximum of approximately US$4. For commercial users, the fee was calculated on the basis of water usage alone (approximately US$0.50 per cubic meter for connected services), with a minimum charge of approximately US$4 per month and no cap on fees.

No specific mechanism for collecting the fees was set out in the concession agreement. The federal government undertook to provide “administrative support” if the IWK was not able to implement effective collection regimes through the state water authorities and collection turned out to be a problem.
The 28-year investment plan identified by the IWK in the preprivatization study was incorporated into the concession agreement. As originally envisioned, it was expected that approximately US$2.3 billion in additional capital would be required in order to provide sewerage services to 100 percent of the population in the 144 areas (48 urban and 96 rural) covered by the concession.

Environmental issues

Before privatization, the federal government and local authorities had been making, at best, sporadic headway in improving the quality of sewerage services. The IWK concession had the potential to achieve significant environmental progress, but by September 1995 only a few demonstrable improvements had been made. These included pumping accumulated sludge from 35,000 isolated septic tanks (about 5 percent of the total in the IWK concession area), clearing blockages in pipes that had contributed to flooding, and expanding the monitoring of effluent quality and surface water conditions. To be sure, only a short time had elapsed since the privatization, and there had been controversies and delays.

Several factors explain the slow start. First, the public strongly opposed the increase in sewerage fees, and the disgruntlement was compounded by questions about the manner in which the concession had been awarded. Second, the IWK faced the herculean tasks of taking over many local-authority operations, requiring that local employee cultures adjust to a single norm, and determining title to property. Third, the IWK delayed too long — more than a year after the first large concession was awarded without a competitive bid. Some ways to avoid the potential conflict between the need for transparency and the desire to involve potential operators in the design process might be to (a) set size limits below which “first come, first accepted” bidders would always be acceptable or to (b) solicit proposals for private sector solutions to a particular problem (as the Malaysian government essentially did in connection with the recent bids for the privatization of solid waste management). Under the second approach, the government has to have strong financial and technical capacity for evaluating the proposals, and it must offer some inducements to potential operators to engage fully in the process, such as limiting the preparation of detailed pro-

Preparations and implementing a privatization — Some lessons from Malaysia

Some lessons for maximizing the environmental improvements resulting from privatizations and resolving difficult issues can be derived from the Malaysian experience.

1. Public acceptance of user fees is critical. In preparing its proposal for the concession, the IWK conducted surveys of public ability and willingness to pay for such services. The results did not predict the outcry that arose in 1994 when the new fees were announced. Only after a decision was made to phase in the new fees for commercial users and the IWK undertook a more extensive public outreach program did the controversy start to abate.

2. A transparent privatization process is key to the public acceptance of user fees. The situation was complicated by lingering questions about such a large concession being awarded without a competitive bid. Some ways to avoid the potential conflict between the need for transparency and the desire to involve potential operators in the design process might be to (a) set size limits below which “first come, first accepted” bidders would always be acceptable or to (b) solicit proposals for private sector solutions to a particular problem (as the Malaysian government essentially did in connection with the recent bids for the privatization of solid waste management). Under the second approach, the government has to have strong financial and technical capacity for evaluating the proposals, and it must offer some inducements to potential operators to engage fully in the process, such as limiting the preparation of detailed pro-
3. A concession process that is open to input from the potential private sector operator contributes to optimal technical and financial concession terms. In the Malaysian case, reliance on the operator’s expertise led to the substitution of decentralized facilities for more expensive centralized systems.

4. Sewerage services and clean water supply should be linked. The IWK intentionally only provided sewerage services, but its fees were based on the amounts of clean water used, the fees were collected by separate state water authorities, and the IWK’s capacity-planning process depended heavily on likely changes in clean water usage patterns. In general, it makes sense to aggregate water and sewerage services on a regional basis. Even if a decision is made to separate clean and dirty water services as part of a privatization structure, mechanisms still need to be developed for dealing with the areas of unavoidable overlap.

5. One of the main difficulties facing the financing of many environmental projects is that the projects are too small to attract financing easily. The IWK structure illustrates how such small projects can be aggregated into a financeable package.

6. A fresh analysis of priority environmental issues and solutions improves the privatization process. Despite all the debate over the fees and the manner of the privatization, there appears to have been no serious challenge to the technical or financial aspects of the investment program. The fact that a new and independent analysis of environmental investment needs was undertaken appears to have contributed to this outcome.

7. The government should have strong mechanisms for monitoring and regulating the company’s performance. In addition to the need for economic regulation to prevent the taking of monopoly profits, the structure of the IWK concession and the general environmental regulatory framework require ongoing, active involvement by the DGSS and the Department of the Environment in monitoring and, if necessary, taking steps to improve the IWK’s performance. Adequate resources need to be made available so that this responsibility can be met.
Between 1982 and 1992 the Mexican government privatized 80 percent of its state-owned or state-controlled companies, including those in the steel sector. Among them was the steel mill in Monclova, Coahuila State, owned by Altos Hornos de Mexico S.A. de C.V. (AHMSA), Mexico’s largest integrated steel complex. AHMSA (which also has interests in other facilities such as mines) began operations in 1944 under local management but government ownership. From 1971 through 1982 the national government assumed greater management responsibilities for the operation of the steel mill. This change was not economically successful: operating costs, particularly for personnel, were high, revenues declined, and no investments were made to upgrade the production equipment. Substantial environmental problems stemmed from the plant’s operations, notably emissions of particulates to the air and of acid wastewater to local water bodies.

With the change of government in 1982, an effort to restructure and rebuild the Mexican steel industry began. In 1988 the World Bank loaned US$400 million to the Mexican government to modernize the steel sector. The restructuring efforts set the stage for the 1990 decision to privatize SIDERMEX, the government-owned steel concern, which included AHMSA. About US$170 million of the World Bank loan was available for upgrading production facilities at the component companies. One of the major improvements at AHMSA was the closure, in spring 1991, of the open-hearth blast furnace, the main source of particulate emissions at the facility.

The winning bid for AHMSA came from Grupo Acerero del Norte (GAN). A minority stake was held by Hoogovens, a Dutch steel company that also acted as a technical adviser to GAN. The bid included US$145 million in cash, the assumption of US$350 million in long-term debt, and a commitment to a modernization investment program of US$535 million (including US$160 million for environmental improvements).

The environmental agreement and the results

The Mexican government helped guarantee an environmental return on the privatization, as well as an economic one, by providing certainty on timing and risk allocation prior to the sale. As part of the process, the government retained consultants to conduct an environmental audit of the facility and identify the actions necessary to bring AHMSA into compliance with existing Mexican environmental requirements. The results were incorporated into a three-year agreement between AHMSA and the national environmental regulatory agency, SEDUE. The obligations to undertake the actions outlined in the agreement were transferred to the buyers as part of the privatization contracts. In addition, the government retained responsibility for “hidden” environmental liabilities not reflected in the contracts, such as environmental problems discovered after the sale.
Investments in such processes as wastewater treatment and recycling were undertaken to increase production efficiency and reduce costs, and these measures also benefited the environment. New management practices to improve housekeeping and community relations led to reduced oil and dust problems. Tree-planting programs were undertaken as part of these efforts. Progress under the agreement was monitored both by AHMSA (which submitted quarterly progress reports) and by SEDUE (through periodic site visits).

In the first five years after the sale of AHMSA, and in addition to increasing steel production, the company:

- Decreased dust emissions by more than 50 percent
- Reduced water discharges per unit of production by more than 70 percent
- Reduced total water discharges by more than 60 percent
- Increased the pH of wastewater from 1 (highly acidic) to 7 (neutral)
- Reduced the amount of solid waste generated per unit of production and increased its recycling of the remaining wastes.

The main barriers to further improvements in environmental performance have primarily to do with access to and application of investment capital. From the company's point of view, the first investment priority was improvement of its competitive position. With much of that investment made and starting to bear fruit, investments in less economically productive areas, such as certain dust collection systems, is proceeding. In addition, work on employee awareness and environmental management systems (tied to ISO quality systems) is under way.

Lessons

1. Environmental issues should be identified during the privatization process and incorporated into an agreement with environmental regulatory authorities. AHMSA's attractiveness to a potential purchaser was enhanced by the government's identification of outstanding environmental compliance issues and the interest of the national environment agency in entering into a compliance agreement. The availability, before bids were submitted, of information about environmental conditions at the plant and about the compliance agreement gave potential purchasers a basis for reflecting in their bid price the costs of carrying out the agreement. The focus on performance goals and timing helped give AHMSA flexibility in deciding how best to meet the requirements.

2. Environmental performance standards must be clear, and the regulatory structure must be transparent. Although several different agencies have responsibility for aspects of AHMSA's environmental performance, the lines between their areas of jurisdiction appear to be clearly drawn, either in law or in practice. This eases AHMSA's efforts to meet the applicable requirements.

3. Pricing regimes for the use of environmental resources are critical. Mexico's water abstraction charges and wastewater discharge fees created effective incentives for AHMSA to develop an innovative response to wastewater issues. AHMSA's investments in acid regeneration and reuse, as well as its push for zero wastewater discharge, thus made both environmental and economic sense, even when measured against more traditional investments in other productivity improvements.

4. Management systems greatly influence improvements in environmental performance. AHMSA's progress on certain environmental issues owes much to changes in company management—moving away from public sector budgeting and spending processes, increasing employee responsibility and involvement in company affairs, tapping into international environmental management experience (in this case, with Hoogovens), and forging practical links between ISO quality and environmental management systems as export promotion tools.

5. Environmental improvements beyond initial win-win gains depend on environmental regulations and their enforcement. As AHMSA is confronted with environmental investments that do not lead to immediate (or any) increases in production efficiencies, the degree to which it chooses to make such investments, and the timing of the investments, will depend in large part on how seriously environmental regulations are enforced.

6. Investment capital needs to be available. In addition to the remainder of the World Bank loan, AHMSA should continue to be able to obtain investment funds from domestic and international
capital markets, including commercial debt, trade debt, export financing, and listings on the Mexican and U.S. stock exchanges. As long as AHMSA's export and other markets remain strong, financing should not be a major barrier. To the extent that AHMSA can continue to take advantage of other countries' efforts to promote exports of environmental technologies (for example, by offering attractive financing packages, as was done for the acid regeneration system), its financing burden will be reduced still further.

7. International pressures play a role in environmental improvements. In the case of AHMSA, they included the environmental pressure brought to bear by the World Bank's requirements under the restructuring loan and, at the macro level, the increasing importance of environmental performance to AHMSA's export markets in Europe and the North American Free Trade Agreement (NAFTA) area, especially under the NAFTA environmental and labor side agreements.
Appendix G

Providing Environmental Infrastructure Services — Options for Private Involvement

If a government decides to involve the private sector in environmental infrastructure services, its key tasks are to understand the wide range of options for working with private parties to improve service delivery and to choose the option that best matches local needs and capabilities. The principal approaches are discussed below, with a focus on the water and sanitation sector.

Management service contracts — Private operation with public investment, ownership, and oversight

Under any of the various forms of service contract (covering operations or management, or sometimes involving leases), the government hires a private organization to carry out one or more designated tasks or services for a certain period of time, often five to seven years. The government remains the primary provider of the service and delegates only portions of the operating responsibility. The private firm must perform the service for the agreed fee and must meet specific performance standards. Governments generally use traditional competitive bidding procedures to award service contracts on the basis of specific service requirements. This arrangement tends to work well given the limited time frame and the narrowly defined nature of these contracts. Examples of service contracts in the water sector include agreements for the operation of a water or wastewater treatment plant; provision of water distribution services; meter reading, billing, and collection operations; and the operation and maintenance of standpipes.

Service contracts are a relatively low-risk option for expanding the role of the private sector. Furthermore, the very process of awarding the contracts and overseeing their implementation often gives governments a more complete understanding of their water systems. Service contracts do not, however, create a framework for optimizing entire water and wastewater systems. Because the contracts do not involve significant infusions of private capital, they are particularly appropriate where service quality can be improved by increasing operating efficiency without significant new investments, as was the case in Mexico City (Box G1). If investments are needed, the contractor’s effectiveness in improving service performance hinges on the government’s ability to provide the necessary capital investments and direction.

Build-operate-transfer and concessions — Private investment and operation with public ownership and oversight

If the government desires to attract more private capital but is uncomfortable about giving up ownership of the assets, two major techniques are available: build-operate-transfer (BOT) and concessions. BOT and its variants focus on the construction and operation of new facilities by the private company. Concessions also anticipate the construction of new facilities, but as part of the overall operation of the entire system, including customer billing and collection.

Build-operate-transfer

Under a BOT arrangement, the private firm finances, builds, and operates a new plant—for example, bulk
Box G1. Service contracts in Mexico City — Cutting water losses and improving fee collection

Mexico City’s water and sewerage systems are well developed but face many operating challenges. The aquifer that is the main source of the city’s water supply is overtaxed, and the drinking-water distribution network suffers from major leakages, with losses of well over 30 percent. As of the mid-1990s, less than half the water consumed by the system was billed, and only 70 percent of those bills were paid.

The government, in considering its options, recognized that not much new investment capital would be needed, since the existing network reached 98 percent of the population for drinking water and 94 percent for sewerage. What was needed to improve the service actually being delivered was technical and commercial expertise in water operations. The government decided to obtain this expertise by involving the private sector. It believed that phasing in private management would alleviate some of the political problems anticipated as a result of efforts to increase fee collection rates.

The government therefore chose to enter into a phased program of service contracts with the private sector. Competition was built in by dividing the city into four zones and issuing four tenders. The lowest bidder in each zone won the contracts, which in October 1993 were awarded to four different companies for 10-year terms. Each contract provided for three phases of work. In phases 1 and 2, customers were to be identified and a more effective billing system was to be designed and implemented. The government would pay the contractors directly for this work on a simple fee-for-service basis. In phase 3 (to be carried out depending on local system needs), the principal task would be to make improvements in the physical distribution system. In this phase, the contractors’ compensation would be tied to revenue earned—that is, to fees collected from customers.

The fall of the peso and a dispute filed by a losing bidder caused delays in commissioning the work. Still, the installation of water meters—an important step in discouraging excess consumption—is continuing. A leak detection program has been initiated to facilitate bill collection and to reduce water losses, helping to reduce stress on already overdrawn aquifers.

Source: Haarmeyer and Mody 1997a.

succesion reservoirs or wastewater treatment plants—for a set period of time, according to performance standards established by the government. An example is China’s pilot BOT water supply project in Chengdu, the capital of Sichuan Province, which has been identified as one of China’s 108 cities with serious water shortages. Under the 18-year contract, Chengdu Generale des Eaux Marubeni Waterworks Co. Ltd., a company owned by a consortium of Vivendi (France) and Marubeni (Japan), will build and operate a modern water supply plant, water intake works, and a 27-kilometer transmission line to improve water supply. The typical BOT operation period (10 to 20 years) is long enough to allow the private company to pay off the construction costs and realize a profit. The government retains ownership of the infrastructure facilities and becomes both customer and regulator.

BOTs generally involve only one facility, and this limits the private firm’s ability to help optimize systemwide resources or efficiencies. In addition, although BOTs provide some competitive incentives for efficiency during the bidding process, the duration and complexity of the arrangements may eventually undermine the positive effects of the initial competition.

Concessions

In a concession contract, the government turns over to a private concessionaire full responsibility for the delivery of services in a specified area, including all related construction, operation, maintenance, collection, and management activities. The concessionaire is responsible for any capital investments required to build, upgrade, or expand the system and for financing those investments out of the tariffs paid by water users. The fixed infrastructure assets are entrusted to the concessionaire for the duration of the contract, but they remain government property.

Concessions are usually awarded for periods of more than 25 years to allow the private concessionaire to recover its costs and generate profits. The public sector is responsible for establishing performance stan-
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standards and for ensuring that the concessionaire meets them.

Concessions can be effective in bringing in private money for the construction of new water and wastewater systems or the substantial renovation of existing systems. Combining the responsibilities for investment and for operations gives the concessionaire strong incentives to make efficient investment decisions and to develop innovative technological solutions, since gains in efficiency will usually increase profits. Large-scale concessions can, however, be politically controversial and difficult to organize. In particular, concessions often suffer from a failure to engage in enough dialogue and joint planning with affected parties (users and employees) before entering into long-term contractual commitments. As in the case described in Box G2, changes in governments and economic policies can threaten the future of contracts, especially when consumers are not fully satisfied.

Joint ventures — Public-private operation, investment, and ownership with public oversight

In joint ventures, public and private actors assume co-ownership of assets and coresponsibility for the delivery of services. The public and private sector partners can either form a new company (as was done in Cartagena, Colombia) or share ownership of an existing company, as when the government sells shares in a company to the private sector (see Box G3). Joint ventures create a new entity to implement the project structure chosen; for example, the government may award the jointly owned firm a service, BOT, or concession contract.

Joint ventures combine the advantages of the private sector — dynamism, access to finance, technological knowledge, managerial efficiency, and entrepreneurial spirit — with the social responsibility, environmental awareness, local knowledge, and job-generation concerns of the public sector. The government’s continuing regulatory responsibilities, however, may lead to a conflict of interest between maintaining public accountability and maximizing returns to the venture. This can increase the risk of political interference and reduce potential gains from private sector management.

A case from Malaysia illustrates how joint ventures (like other arrangements, such as the IWK concession described in Appendix E) can fail to live up to expectations. In 1995 Kelantan Water was set up as a joint venture between the Kelantan state agency (30 percent equity) and the U.K. firm Thames Water.

Box G2. Breakdown of a concession in Tucumán, Argentina

In 1995 the French water company Vivendi S.A. entered into a 30-year concession with the government of Tucumán Province, Argentina, to run the province’s water and sewerage system. During the period of the concession, a new governor came into office who was opposed to the privatization. Using the new, higher rates to rally support, he and his followers took to the streets and encouraged citizens to stop paying their bills. Then, inexplicably, the water turned brown. Few residents needed further persuasion that privatization was a bad idea. The provincial government accused the Vivendi unit, Cia Aguas del Aconquija S.A., of inadequate service and of failing to fulfill guarantees, complete work, meet quality standards, and cut tariffs on schedule. More than 8 of every 10 residents stopped paying their bills, leading the company to rescind its contract—the first such cancellation in Vivendi’s 145-year history. The company filed a US$100 million suit against the government.

The Tucumán water system is now back in state hands. In October 1998 the provincial governor allowed Vivendi to withdraw. A World Bank arbitration panel under ICSID is still considering the company’s complaint. In April 2000 Tucumán Province dropped its lawsuit against the Vivendi unit. Vivendi has cross-sued Argentina at the Inter-American Investment Dispute Settlement Centre for a total US$335 million under Argentina’s 1991 investment protection treaty with France.

One might think that such high-profile problems would deter other governments from privatizing water services. Nevertheless, private companies are viewed as the only source of money for fixing the region’s systems, and privatization remains the path chosen by Latin American governments, even though water is a delicate political issue.

Box G3. A joint venture in Thailand — Capital for investment and new services

In early 1997 the Eastern Water Resources Development and Management Company (East Water), a subsidiary of Thailand’s Provincial Waterworks Authority (PWA), took part in an initial public offering on the Thai stock exchange, becoming the first water company in Asia to be listed on a stock exchange.

As a result of the stock offering, 44 percent of East Water stock is owned by the PWA, 5 percent by the Industrial Estate Authority of Thailand, and the remaining 51 percent by private portfolio investors. The resulting capitalization of 2 billion baht allowed the company to finance many of its proposed projects itself. For example, a new pipeline system project that will serve industrializing areas will be financed mainly from East Water’s own capital, with the balance coming from debentures.

East Water has established a wholly owned subsidiary as its vehicle for expanding into the production and supply of treated freshwater and desalinated water. There are two main ways in which East Water can move into the clean water business: direct participation in the privatization of the state-owned water utilities, and expansion into areas not yet covered by the state agencies. As an example of the second route, East Water has ventured into the small but high-potential business of selling drinking water through vending machines.


Burdened with debt, Thames Water was unable to carry out work on pipes or other infrastructure, bringing housing and commercial projects in the state to a standstill. The population also had to endure low pressure, disruptions, and an unhygienic water supply. Thames Water agreed to sell its entire 70 percent equity in Kelantan Water to the state government, and Malaysia’s prime minister offered the state a soft loan to solve its water crisis.

Full privatization

The most far-reaching privatization option involves the transfer by the government to a private firm of both the operating responsibility for the services and the ownership of the underlying infrastructure assets. The government retains responsibility for regulating the quality, and often the price, of the service provided, but the private firm decides how best to allocate system resources to meet public goals.

Full privatization has been tried in only a few countries to date — on a large scale in England and Wales, and on a small scale in the United States. The theory is that placing the entire system in the hands of the private operator will enable the operator to optimize the allocation of system assets and provide cost-effective service. Many of these goals have been

Box G4. Twelve years’ experience with full privatization of water systems in England and Wales

Before privatization in 1989, publicly supplied drinking water in many parts of England and Wales had repeatedly failed to meet U.K. or European Union (EU) standards for quality, and more than 20 percent of the country’s municipal wastewater treatment plants did not meet applicable standards. It was estimated that an investment of over £50 billion would be needed if the industry were to meet EU water quality standards — double the amount of capital invested (in real terms) over the previous 10 years. Furthermore, with more than 70 percent of the country’s water supply unmetered, self-financing by the regional water authorities was not a feasible option. Pressure from the U.K. Treasury to reduce borrowing for public sector infrastructure compounded the problems facing the water sector.

In response, the U.K. government transferred the assets of the regional water and sewerage authorities to stand-alone corporations, the shares of which were then sold to private investors. Under the 1989 Water Act, statutory appointments were granted that enabled the newly private water and sewerage companies to run geographic monopolies as vertically integrated services. The basis for the assignments was the geographic areas served by the old regional water authorities and by several smaller statutory water compa-
Box G4. Twelve years’ experience with full privatization of water systems in England and Wales (continued)

nies. At the time of the privatization, the industry was made up of 10 regional water and sewerage companies and 26 water supply firms.

Since privatization, the quality of drinking-water supply and wastewater treatment has improved significantly. Over £30 billion has been invested. Simultaneously, the Office of Water Services (OFWAT) has been driving the industry toward greater efficiency through the use of comparative, or yardstick, competition (publicizing the different firms’ performance on common metrics). These efforts have borne fruit. Improvements have been made in the quality of bathing water (91 percent of all beaches are now in compliance with U.K. standards) and of river water and drinking water (99.7 percent compliance). Sustained investment in total water resource planning has led to the reduction of leakage by about 1.8 million cubic meters a day, the equivalent of the daily requirements of 12 million people. It is anticipated that over the next five years alone, £7 billion of additional environmental improvements will be made. Current estimates suggest that between 1990 and 2005, water companies will have invested over £50 billion, much of it financed by customers, to improve water quality and to protect the environment.

Nevertheless, concern about increases in user fees and the companies’ use of the revenues persists. Partly because of public discontent over the payment of £10 billion in dividends to shareholders—much of it apparently at the expense of investment in the water system—OFWAT imposed an average annual reduction in water prices of approximately 2.1 percent over the period 2000-05 and a 12 percent one-time price reduction in customer water bills in 2000. The price reduction caused an outcry by the water companies and their shareholders. They argued that the additional investments needed to comply with EU standards, especially for improvements in drinking-water quality, would be compromised and that OFWAT’s expectation of a 16 percent efficiency saving across 100 percent of operating costs was simply not attainable, particularly on top of the efficiency gains that had already been realized in the first 10 years of private control. The impact of the price review was so dramatic that some companies even suggested that the firms be restructured to separate asset ownership from operation in order to exploit cheaper debt finance (“mutualization”).

Recent initiatives such as the Competition Act of 1998 have focused on promoting competition by opening regions to new entrants (“inset appointments”) and by developing methods for promoting the common carriage of water through different companies’ networks.

An important lesson from recent events is that comparative competition may be approaching its limits. The industry, and customers, might be better served by the introduction of legislation that clearly defines the scope for future competition in the water market and provides an unambiguous legal framework under which companies would be able to expand competition through market mechanisms. OFWAT’s evolving role may be that of promoting competition by enabling the industry to reinvent itself, while keeping precautions in place to safeguard customer interests.


achieved in the water privatization in England and Wales, described in Box G4.

One fear is that the government’s ability to regulate such fully private providers of essential environmental services might be insufficient to protect the public against abuse by the private firms. Some of these apprehensions stem from the disparities in information that will exist between the government and the private firm; other concerns have to do with the opportunities for regulatory capture or corruption and the possible inadequacy of regulatory capacity.
Notes

1. The decline in 1998 was attributable to the large increase in mergers and acquisitions in industrial countries.

2. Mathieu (1996) defines industrial restructuring as "a long-term response to new market trends, technological change, and economy-wide structural adjustment to establish competitiveness, efficiency, and profitability at the firm, subsector, or enterprise level." At the enterprise level, it may include the restructuring of ownership, management, organization, product lines, finances, use of labor, and physical capital.

3. Bolivia provides a recent example. In April 2000, after a week of civil unrest over planned increases in water tariffs, the government canceled its water management contract with an international water consortium for work in Cochabamba. According to the consortium, Aguas del Tunari, the government unilaterally terminated the contract. The Ministry for Overseas Trade and Development, however, said that the consortium itself withdrew to avoid provoking further clashes. The consortium is claiming compensation for the amount already invested, plus a 16 percent rate of interest and 0.25 percent of capital for each lost year of the concession (CNN reports; Financial Times 2000b). Box G2, Appendix G describes another case of difficulties with a contract, this one in an Argentine province.

4. The formula for adjustment is $RPI - X + K$, where $RPI$ is the retail price index, $X$ is a factor reflecting relative efficiency, and $K$ represents a special allowance for meeting environmental obligations.

5. The World Bank Group consists of five closely associated institutions: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Guarantee Agency (MIGA), and the International Centre for Settlement of Investment Disputes (ICSID). IBRD and IDA (commonly referred to as the World Bank) provide loans and development assistance to borrowing member governments. The IFC supports private sector investments, MIGA provides guarantees to foreign investors in developing countries, and ICSID provides assistance with conciliation and arbitration in investment disputes between foreign investors and host countries.

6. Category A projects are those likely to have "severe adverse environmental impacts that are sensitive, diverse, or unprecedented," according to OP 4.01. Category B projects, which have "less adverse" potential impacts, are subject to a narrower environmental assessment (EA). Category C projects have "minimal or no adverse environmental impacts" and do not require an EA. Projects in category FI involve "investment of Bank funds through a financial intermediary" in subprojects that may have adverse environmental impacts; the intermediary is required to screen subprojects and ensure that appropriate EAs are conducted.
7. The provisions of the policy apply to SECALs for which a Project Information Document (PID) was issued after March 1, 1999.

8. By the end of 1999, about 78 percent of the long-term assets of state-owned enterprises in sectors other than energy, transport, and infrastructure had been privatized or placed under liquidation or insolvency proceedings.

9. An additional group of SOEs was grouped into eight pools, each assigned to a privatization agent. The Privatization Agency was responsible for the sale of the remaining SOEs, while the sector ministries handled the privatization of about 3,000 small enterprises.
Bibliography

Abbreviations used are as follows: EDI, Economic Development Institute (of the World Bank; now the World Bank Institute); FIAS, Foreign Investment Advisory Service; IFC, International Finance Corporation; OECD, Organisation for Economic Co-operation and Development; UNDP, United Nations Development Programme. Documents from the Center for International Private Enterprise are available at <http://www.cipe.org>. The word “processed” describes informally reproduced works that may not be commonly available through library systems.


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