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# Public Environmental Expenditure Reviews (PEERS)

Experience and Emerging Practice

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In 2001, the World Bank completed the comprehensive two-year process of preparing its Environment Strategy, *Making Sustainable Commitments: An Environment Strategy for the World Bank*. It was endorsed by the Bank's Board of Directors and published in October 2001. The *Environment Strategy Paper* series includes reports prepared to facilitate implementation of the Strategy.

The Environment Strategy emphasizes the need to strengthen the analytical foundation of environmental work at the country level. Country Environmental Analysis (CEA) has been identified as one of the key environmental diagnostic tools for systematically evaluating the environmental priorities of development and poverty reduction strategies in client countries, the environmental implications of key policies, and countries' institutional capacity and performance to address their priorities.

This report, together with other papers on various aspects of CEA, was prepared as part of the stocktaking exercise for developing guidance on CEA. The recommendations made in this paper represent the views of the authors and not those of the World Bank.



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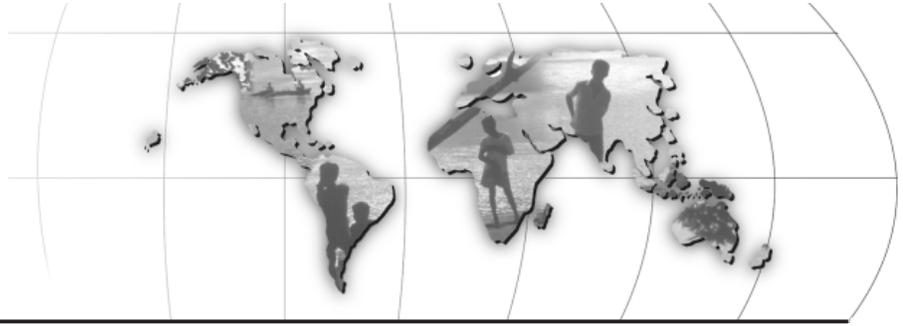
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## Abstract

The existence of externalities, market failures, and complex transboundary and transgenerational issues linked with environmental challenges means that public sector institutions have an important role to play in environmental management. Public expenditures and their effective management are key aspects of a country's environmental policy, regulatory, and institutional framework.

As part of country-level environmental analysis, this report examines the definitions and classification frameworks for environmental expenditure that have been used outside and within the World Bank, reviews experience with PEERs, and outlines a methodological framework for carrying out PEERs .

Among the international tools reviewed are the pollution abatement and control (PAC) frame-

work developed by the Organisation for Economic Co-operation and Development (OECD), the Creditor Reporting System (CRS), and the Eurostat Classification of Environmental Production Activities and Expenditure (CEPA). In addition, the report summarizes findings of a review of 10 World Bank PEERs.

The report provides a definition for PEER, and discusses the principal recommendations regarding procedures for conducting a PEER and some of the methodological issues and problems likely to be encountered. Issues covered include policy priorities, the spending envelope, expenditure allocation, magnitudes and trends, international and regional comparisons, expenditure efficiency and quality, program-level and project-level analysis, potentially environmentally damaging subsidies, and foreign aid. The report concludes with a list of suggested areas for further work.





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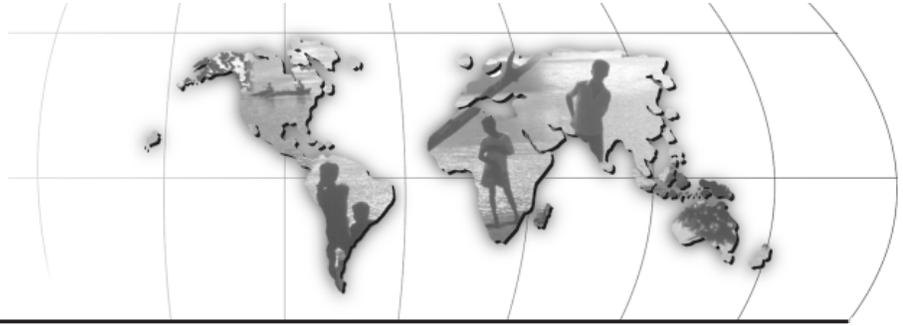




## Acronyms and Abbreviations

AFR	Sub-Saharan Africa Region
CAS	country assistance strategy
CEA	country environmental analysis
CEPA	Classification of Environmental Protection Activities and Expenditure (Eurostat/UNECE)
COFOG	Classification of the Functions of Government
CRS	Creditor Reporting System (OECD/DAC)
DAC	Development Assistance Committee (of the OECD)
EAP	Environmental Action Programme for Central and Eastern Europe
EASES	East Asia Environment and Social Development Unit (World Bank)
ECSSD	Environmentally and Socially Sustainable Development–Europe and Central Asia (World Bank)
EFS	environmental financing strategy
EPER	Environmental Protection Expenditure and Revenues (OECD/Eurostat questionnaire)
EPR	environmental performance review
ESW	economic and sector work
EU	European Union
GDP	gross domestic product
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification of All Economic Activities
NACE	Statistical Classification of Economic Activities in the European Community
NEAP	national environmental action plan
NEMAP	national environmental management and action plan
NGO	nongovernmental association
OA	official assistance
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development

OFA	official development finance
OOF	other official flows
PAC	pollution abatement and control
PEEM	public environmental expenditure management
PEER	public environmental expenditure review
PEM	public expenditure management
PEIR	public expenditure and institutional review
PER	public expenditure review
PRSP	poverty reduction strategy paper
R&D	research and development
SEEA	System of Integrated Environmental and Economic Accounting
SERIEE	European System for the Collection of Economic Information on the Environment
SSPR	structural and social policies review
UNECE	United Nations Economic Commission for Europe
WPEP	Working Party on Environmental Performance (OECD)
WRI	World Resources Institute



## Executive Summary

**T**he existence of externalities, market failures, and complex transboundary and transgenerational issues linked with environmental challenges means that public sector institutions have an important role to play in environmental management. Public expenditures and their effective management are key aspects of a country's environmental policy, regulatory, and institutional framework, since most policies are linked to a need for public expenditure of some kind. Consequential, public environmental expenditure review (PEER) can be an important part of country environmental analysis (CEA).

This paper examines how PEERs can contribute to CEA in evaluating environmental management capacity. It assesses experience with PEERs, both within and outside the World Bank, as well as with the more general public expenditure reviews (PERs), and examines various definitions and classification systems for public environmental expenditures. The report concludes with a discussion of the main recommended components of a PEER.

To date, there are no guidelines for PEERs. This report is a first step toward filling the gap. It examines PEERs that have been carried out in

the past and attempts to distill best practice lessons from them. In doing so, it draws on best practice in general public expenditure reviews (PERs) and notes the possibilities for coordination between PEERs and PERs in the context of the CEA goal of integrating the environment into wider economic analysis.

### EXPERIENCE WITH PEERs

Experience with PEERs is still rather limited. PEERs have usually been ad hoc documents not related to a particular series, or they have appeared as sections within other documents or as publications of the client government rather than of the World Bank. Because the coverage of these reviews is often quite different, any current definition of PEERs must be rather broad. This report reviews a set of 10 PEERs chosen on the basis of consultations with World Bank staff. It also examines several products outside the World Bank that could be considered PEERs, notably the environmental performance reviews conducted by the Organisation for Economic Co-operation and Development (OECD) and the United Nations Economic Commission for Europe (UNECE).

## DEFINITION AND CATEGORIZATION OF ENVIRONMENTAL EXPENDITURE

Defining environmental expenditure is an important initial step for any PEER. The definition guides the selection of expenditures to be included in the review's database, which in turn feeds into the expenditure analysis. A standardized definition and categorization will help enable more meaningful comparisons across countries, although the limitations of international comparisons must be kept in mind.

The present report reviews the definitions and classification systems for environmental expenditure that have been used within the World Bank and elsewhere. These include the OECD pollution abatement and control (PAC) framework and the related definitions of environmental expenditure developed with Eurostat; the OECD Development Assistance Committee (OECD/DAC) Creditor Reporting System (CRS); and other international classifications—the System of Integrated Environmental and Economic Accounting (SEEA), the Classification of Environmental Protection Activities and Expenditure (CEPA), and the Classification of the Functions of Government (COFOG). The report concludes by recommending consideration of a general definition based on the internationally accepted OECD/Eurostat definition of environmental protection activities, supplemented by reference to selected natural resource management activities. The general definition would be accompanied by lists of examples of what is specifically included and excluded from the definition, for the guidance of users.

On the basis of a review of current international and Bank practice regarding classification systems, and of the analytical needs of PEERs, a multidimensional, modular classification system is proposed. Depending on data availability, a review team could choose to use only particular dimensions. The underlying principle is that total expenditure should be the same for each dimension. The proposed dimensions, with examples of coverage for each, are:

- Agency (department or other institution)
- Economic (capital or recurrent expenditure)
- Functional role of government (policy development, regulation)
- Environmental domain (air, water)
- Regional (or countrywide)
- Financial (source of funds such as foreign aid, earmarked taxes).

## MAIN ELEMENTS OF A GUIDANCE NOTE

Finally, the note discusses the principal recommendations regarding procedures for conducting a PEER and some of the important methodological issues and problems likely to be encountered. It is meant to be the forerunner of a more detailed guidance note, to be developed as part of a future project. Issues covered include policy priorities, the spending envelope, expenditure allocation, magnitudes and trends, international and regional comparisons, expenditure efficiency and quality, program-level and project-level analysis, potentially environmentally damaging subsidies, and foreign aid. The report concludes with a list of suggested areas for further work.



## Chapter 1

# Introduction

**T**he objective of this report is to examine how public environmental expenditure reviews (PEERs) may contribute to country environmental analysis (CEA) in evaluating environmental management capacity. It reviews experience so far with PEERs within and outside the World Bank, discusses methodological problems, and examines the main issues to be considered in developing a guidance note for conducting PEERs in the CEA context.

This report is based primarily on desk research. It also draws on interviews with PEER and public expenditure review (PER) practitioners at the World Bank in Washington, D.C., June 3–7, 2002, and at the Organisation for Economic Co-operation and Development (OECD) in Paris. This version of the report incorporates the World Bank's comments on an earlier (June 2002) version.

## PUBLIC EXPENDITURE MANAGEMENT

In recent years a substantial amount of work has been done on developing guidelines for and evaluating public expenditure management (PEM), notably by the World Bank, the OECD, and the Asian Development Bank.

According to the World Bank's PEM Handbook (1998), the generally accepted objectives of public expenditure management are:

- *Fiscal discipline*: Maintaining sustainable fiscal discipline
- *Allocative efficiency*: Facilitating strategic prioritization of expenditures across policies, programs, and projects to promote efficiency and equity
- *Cost-effectiveness*: Encouraging better use of resources to achieve outcomes and produce outputs at the lowest possible cost.

Methods for evaluating public expenditure management have included diagnostic toolkits and checklists (e.g., the PEM Core Diagnostic) that focus on the existence of particular institutions and organizational processes, and tools that focus more on the outcomes of those processes, such as public expenditure reviews. In practice, there has been some overlap between the institutional and functional focuses of the various instruments.

## ENVIRONMENTAL MANAGEMENT

Environmental management is a process that entails (a) the recognition of environmental

problems; (b) the emergence of public awareness and political commitment to address these problems; (c) the formulation of environmental policies; (d) the expression of policies in regulations and legislation; and (e) the implementation and enforcement of policies.

One important task of environmental management under point (e) is the management of financial resources with the aim of accomplishing the other tasks. This involves ensuring that:

- Expenditures match policy principles and priorities
- The activities that the expenditures represent are the most appropriate way of handling the issues the activities purport to address
- The appropriate activities are carried out efficiently and effectively.

## PEERs IN THE CEA CONTEXT

Country environmental analysis (CEA) is a country-level analytical tool that can help assess the environmental priorities of countries' development and poverty reduction strategies, the environmental implications of policies, and countries' institutional capacity to address their challenges. The objective of CEA is to help integrate environmental considerations into early stages of planning and to guide capacity building and operational priorities in development assistance. The CEA is also to be used as a framework for closer donor coordination, by helping avoid duplication of environmental analyses.

The CEA will be made up of three building blocks (Figure 1). Guidance notes on key modules will form a toolkit for each block.

The third building block, "capacity/performance assessment," evaluates the country's capacity for managing environmental priorities. PEER is one element of this block.

### *Public environmental expenditures*

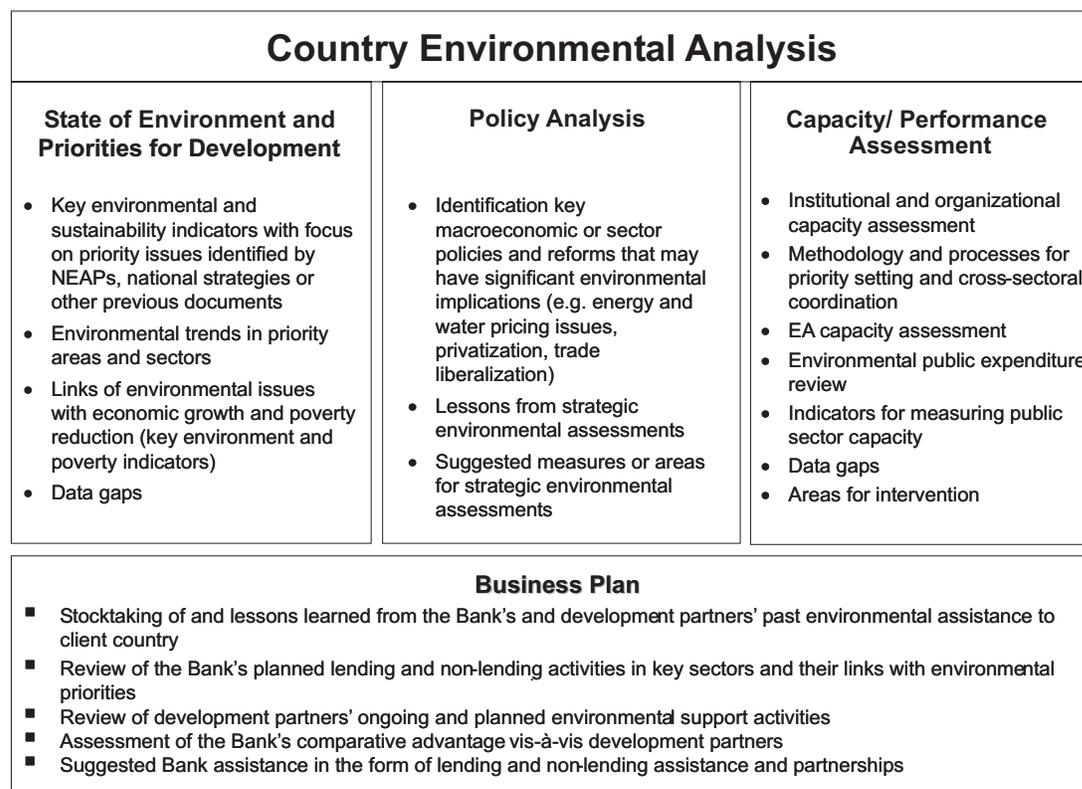
The role of public environmental expenditures is to put into practice the government's environmental management policy. Although in one sense public expenditures can be said to supplement other policy tools, such as legislation and regulation, this paper takes a broader approach. The starting premise is that most policies will result in public expenditures of some kind. For example, policies that are based on the "polluter-pays" and "user-pays" principles will result in few subsidy expenditures but may lead to larger regulatory and monitoring expenditures.

### *How a PEER helps evaluate environmental management capacity*

The PEER helps evaluate a government's environmental management capacity by looking at the results of this management as reflected in public expenditures. It does this by asking three questions:

- Do the expenditures address policy priorities?
- If so, does a particular expenditure address a policy priority in the most appropriate way? This involves asking (a) whether there is a rationale for government involvement in the first place (e.g., a market failure) and then (b) whether the instrument chosen to address the problem is appropriate.<sup>1</sup>
- Granted that a particular expenditure is addressing a policy priority and is taking an appropriate approach to it, is the

**Figure I**  
**Key building blocks of the CEA**



Source: CEA Concept Note, June 5, 2000.

program being carried out efficiently? This involves determining whether the funds are being managed correctly and whether they are producing the desired results.

The implication is that a large environmental expenditure program is not necessarily a good thing in itself; what is more important is how the funds are used.

On the basis of experience with PEERs and PERs, and the needs of the CEA, it is recommended that a PEER not be used to assess policy, which is the domain of the CEA's "policy analysis" block. The main goal of the PEER should be to evaluate how well environmental policies are being carried out, as reflected in the expenditure program.<sup>2</sup>

It may be desirable for a PEER to focus especially on key environmental regulatory and management functions such as monitoring, regulation, and enforcement. For example, benchmarks could be developed for expenditures on particular types of activities, perhaps in relation to gross domestic product (GDP) or other appropriate indicators.

Care should be taken in making international comparisons because of important contextual differences among countries. Ultimately, the amount spent on particular activities should depend on the country's policies. Although outlying figures for a country in international comparisons could highlight problems in policies or in their implementation, policies and recommendations for changes in policies should ideally be examined before the PEER is carried out.

A few recent PERs (but no PEERs, so far) appear to have expanded into the domain of the PEM diagnostic toolkit by examining institutional issues, even going so far as to be termed “public expenditure and *institutional* reviews” (PEIRs). Institutional issues could include the policymaking process, and these reviews have been extended to such issues as adequate remuneration of personnel. There may be some merit in following what seems to be evolving PER practice by including some institutional assessment in PEERs, especially where such an assessment is not being performed as part of another exercise. An institutional review could help put the expenditure review into context, and a tighter connection between the two can help the government better use the expenditure analysis to measure and correct related institutional failures. Or, since assessment of institutions and of expenditures can be regarded as distinct (with the former looking at institutional procedures and the latter at the results of those procedures), it may be conceptually attractive to keep them as separate exercises. For the purposes of this report, institutional issues will be discussed in the CEA building block “capacity/performance assessment.”

Another important element for consideration in a PEER is the budgetary process, which has both functional and institutional aspects. Ideally, a PEER could look at both budgeted and actual expenditures, comparing them with policy priorities and with each other. In practice, some PERs have based their analysis on budget figures only, owing to the difficulty of finding information on actual expenditures. The most important budgeting issues, however, are arguably institutional—the formal and informal procedures that determine how much money is allocated to which programs and projects. Since the budgetary process involves going beyond the environmental sector, it might ideally be addressed outside the CEA. But, as noted above, there may be a need for the PEER and CEA tools (including those under “capacity/performance assessment”) to be flexible enough to accommodate this important and essential analysis, when it is not performed elsewhere.

Although this report raises for consideration the possibility of widening the scope of PEERs by including these institutional and budgetary issues, it focuses on evaluating capacity through expenditure results.



## Chapter 2

# Experience with PERs and Their Relevance for PEERs

**P**ublic expenditure review is a management tool that has become one of the World Bank's premier economic and sector work (ESW) products, especially as the Bank has moved from project-level assistance toward assistance for more macro-level budget reform and support activities. The World Bank's Public Expenditure Management Website (<http://www1.worldbank.org/publicsector/pe/pem1.htm>) notes that, ideally, PERs evaluate public spending on three levels:

- Overall fiscal balance
- Allocative efficiency within the overall budget envelope
- Technical efficiency of expenditures.

As a number of recent studies have noted, there are still no PER guidelines per se. (This is also the case for PEERs.) Among the World Bank internal publications that come the closest to guidelines are "Evaluating Public Spending: A Framework for Public Expenditure Analysis" (Pradhan 1996) and the PEM Handbook (World Bank 1998).

Several studies of PERs go some way toward providing guidelines, or at least highlight best practice. These include:

- "Public Expenditure Reviews: Progress and Potential," PREM Note 20, April 1999
- "Public Expenditure Management and Accountability: Evolution and Current Status of World Bank Work" (Rajaram and Krishnamurthy 2001)
- "Public Expenditure Reviews: Extended Draft Version," available at [www.worldbank.org/participation/PERfindings.html](http://www.worldbank.org/participation/PERfindings.html).<sup>3</sup>

Evolving PER best practice should be highly relevant for the development of PEER guidelines, since a public environmental expenditure review can be thought of as a "sectoral" PER. (A limited number of sectoral PERs have been performed—for example, for the health and education sectors in some countries.) But since the environment is not so much a sector as a cross-cutting theme, the PEER usually must look at expenditures across the economy and not just at the expenditures of a particular ministry. This feature arguably makes the PEER closer to a PER than is the case for other sectoral PERs.

### PER "BEST PRACTICE"

The authors reviewed the reports listed above, as well as several PERs, and talked to PER

practitioners within the Bank. On the basis of these sources, they developed a list of issues regarding evolving PER best practice that could be highly relevant for PEERs.

### **General issues**

- *Rationale for the review.* Given the cost of PERs (averaging US\$200,000 for a full review), the review’s rationale should be clearly determined and stated. Important reasons for undertaking a PER could include provision of input to the CAS, future adjustment operations, or the country’s budget process. Ideally, the PER should be timed to feed into these processes.
- *Determination of content.* The content, scope, and level of analysis should be based on the most pressing issues in the client country, the content of past reports, the type of information available, and the resources available for undertaking the review.
- *Trend toward more focused, less formal reviews.* Large, comprehensive PERs are thought to have had relatively little impact, as they have often taken a long time to complete and as a result usually did not provide timely inputs into the country’s budgetary process. Consequently, there is a trend toward shorter, less formal reviews, sometimes undertaken on a yearly or two-year cycle. It is recommended that each periodic PER focus on a particular sector or theme rather than attempt to cover everything.
- *Participation of the client government.* PERs can be wholly in-house; Bank-led participatory; joint; or client-led. Most critics emphasize the importance of greater government involvement, to the point of the review’s being client-led, if possible. Client participation is seen as building the government’s capacity to review itself eventually and as ensuring ownership of the resulting recommendations. There is also emphasis on the PER as not just a product but a process designed to foster an ongoing dialogue with the government. A fully in-house PER may be justified for the first review, when baselines are being determined and when local capacity and interest may be low.
- *More focus on institutional issues.* More attention should be paid to institutional issues, such as budget management and incentives, which have an important impact on expenditure outcomes. Improvements in institutions can help improve expenditure allocations on a sustained basis. As noted above, several recent reviews have actually been termed “public expenditure and institutional reviews.”
- *Need for tailoring to country circumstances.* Many observers have stressed that there is no unique prescription for the level or composition of public spending. PERs need to be tailored to the local situation on the basis of a thorough understanding of country-specific public sector mandates, institutions, and constraints. It was noted that a PER framework (guidelines) can really only outline broad principles.
- *Limitations of international comparisons.* Since there is no optimal ratio or norm for expenditure allocations, international comparisons (including benchmarks) can at best only help reveal gross anomalies and should be followed up by further analysis. Difficulties with international comparisons are attributable to such factors as differences in relative prices, the state of the

infrastructure, and the roles of the public and private sectors.<sup>4</sup>

- *Discussion of problems encountered.* Most PERs do not adequately discuss the data, methodological, and other problems encountered in conducting the review. Such discussion can, for example, provide a better context for the data presented in the report and facilitate follow-up reports in the country (as well as reviews in other countries, to the extent that similar problems may be encountered elsewhere).
- *Dissemination.* An appropriate dissemination strategy of the review to all stakeholders should be pursued to enhance the transparency and effectiveness of the process.

### ***Issues related to project-level analysis***

In general, the studies note that PERs need to go beyond allocation issues and look more closely at the efficiency of individual programs (the third of the three levels of analysis). Given resource constraints, program-level analysis will typically only be undertaken for the most important programs, that is, the largest budget items.

- *Rationale for government expenditures.* More attention should be paid to analyzing the rationale (externalities, provision of public goods, and so on) for government involvement in particular expenditure programs, as well as the appropriateness of the involvement mode (e.g., regulation, outright provision). Best practice in the division of public and private sector roles has evolved significantly over the years, and assessing the appropriate role of the public sector should therefore be an ongoing process.

- *Integrated analysis of capital and recurrent expenditures.* To minimize waste of capital stock and to better determine the sustainability of a given capital investment, it is important to analyze such investments along with their actual and required recurrent expenditures.
- *Expenditure management.* More attention should be paid to expenditure management issues, including budget implementation and the efficiency of expenditures—for example, via expenditure tracking. (This is related to the more general institutional point under “General issues,” above.)
- *Outputs and outcomes.* Most PERs focus on monitoring inputs, but more comparison is needed between these inputs and the activity’s outputs and outcomes. Lack of adequate data, however, is usually an obstacle.
- *On-site assessment.* When expenditure data are poor, they should be supplemented by on-site inspections and surveys.
- *Actual and budgeted spending.* Many PERs look only at budgeted spending. Ideally, PERs should compare budgeted with actual spending or should concentrate on the latter.

## **COORDINATION OF PEERs WITH PERs**

Most PEERs so far have been conducted separately from PERs. Only one World Bank PEER (that for Mongolia, completed in 2002) has been done as part of a PER.

Coordinating PEERs with PERs may offer several advantages. The PER can provide important inputs to the PEER, notably concerning the macroeconomic context and the overall picture of government expenditures and institutions. In this case it is usually

desirable for the PEER to follow the PER. Several PEER practitioners noted, however, that it might be useful to undertake the PEER and the PER simultaneously to take advantage of the entrée that the PER process provides to central government bodies outside the ministry of environment, especially the ministry of finance. The cooperation of the finance ministry is often crucial for tracking down information on environmental expendi-

tures by entities other than the core environmental ministries and agencies. Coordination of PEERs with PERs could also help meet the CEA goal of integrating environment into wider economic analysis. Most of the World Bank PEER and PER practitioners consulted were less sure about the value of information flows in the other direction—that is, the contribution that PEERs could make to PERs.



## Chapter 3

# Experience with PEERs

**E**xperience with PEERs within the World Bank is still rather limited, as is experience with “sectoral PERs” in general.

Those PEERs that have been performed have usually been ad hoc documents not related to a particular series or have appeared as sections in other documents or as publications of the client government rather than of the World Bank. Moreover, the coverage of these reviews often differs greatly. It is therefore difficult to come up with a definitive list of “World Bank PEERs.” In practice, the authors of this report relied on interviews with World Bank staff to develop the nonexhaustive list presented below.<sup>5</sup>

The authors also examined several products outside the World Bank that could be considered PEERs. The premier such product is perhaps the OECD environmental performance review (EPR), but the OECD has several other types of review as well, and the UNECE also conducts EPRs.

### WORLD BANK PEERs

This section presents a brief review of each PEER found in the study, in chronological order. (See Table 1 for a synopsis.) The parameters examined include:

- The purpose of the report
- The definition of environmental expenditure (if any)
- The scope of expenditure included in the analysis (e.g., whether it includes the capital/investment budget only or takes in recurrent expenditures, and whether it covers only the environment ministry or nonenvironmental ministries as well)
- The main comparisons and analyses made, and whether expenditures were compared with policy priorities and with trends in other countries
- The time span—single year, or multiple years
- Whether any analysis of expenditure quality or other project-level evaluation was performed.

### *Philippines (1996)*

*Title.* “Philippines: Scope for Integrating Macroeconomics and the Environment—Some Suggestions,” Ronald T. McMorran and Kirk Hamilton, IMF Fiscal Affairs Department and World Bank Environment Department, September 1996. A limited PEER was performed as part of the report.

*Purpose.* The main purpose of the report as a whole was to evaluate the impact of the country's macroeconomic strategy on the environment.

#### **Definition of environmental expenditure**

*Scope.* The report looked only at expenditures by the Department of Environment and Natural Resources. Expenditures were not broken down between capital and current expenditures.

*Comparison with policy priorities.* The report took policy priorities as a base and looked at the extent to which these were covered by expenditures. It did not analyze expenditures that fell outside the policy priorities.

*Other key comparisons and analyses.* The PEER expressed expenditures on individual priority programs as a percentage of the environmental (i.e., departmental) budget and of the overall government budget, and it compared these expenditures with revenues from the environment and natural resources sector. A large part of the report dealt with ways of increasing revenues from the natural resources sector—for example, by introducing or raising user charges—and with the macroeconomic effects of doing so.

*International comparison.* None.

*Period covered.* One year; thus, the PEER did not examine expenditure trends.

*Quality/project-level analysis.* No project-level analysis was carried out.

*Foreign aid.* The report was confined to expenditures by the Department of Environment and Natural Resources, and it was not

clear which of these projects, if any, were donor funded. There was no analysis of issues related to foreign aid.

#### **Bangladesh (1997)**

*Title.* "Priority Framework for NEMAP Implementation," prepared jointly by the Bangladesh Ministry of Environment and Forest and the World Bank, May 1997 (discussion draft). A PEER was performed as part of the report.

*Purpose.* The aim of the report as a whole was to create a framework for developing priority actions to improve environmental management and monitor progress toward that goal.

*Definition of environmental expenditure.* The report notes that a "standard definition of what does and does not constitute an environmental expenditure was developed, based on World Bank standard practice," which in turn is based on the definition used in *Toward an Environmental Strategy for Asia* (Brandon and Ramankutty 1993). This definition, which actually consists of explicit lists of projects and project components that may or may not be counted as environmental expenditure, is discussed in greater detail in Chapter 4.

*Scope.* The report created a database combining the mainly donor-funded annual development plan and the three-year rolling budget. This included projects from several different ministries but was apparently limited to capital expenditures. To be included in the database, over 5 percent of the project had to be "environmental," although only the environmental portion was included. Apparently, the report looked at budgeted rather than actual expenditures. Codes in the database included economic sector, type of expenditure (invest-

ment or technical assistance), source of funding, and geographic area in which the investment was made.

*Comparison with policy priorities.* The report compared expenditures with priority issues identified by the national environmental management and action plan (NEMAP).

*Other key comparisons and analyses.* The environmental expenditures of each economic sector or ministry were compared with the total development budget for that sector.

*International comparison.* None.

*Period covered.* One year (1995/96).

*Quality/project-level analysis.* None.

*Foreign aid.* The report database combined expenditures from the ordinary (three-year rolling) government budget and the mainly donor-funded development plan. Within the mainly donor-funded part of the database, it compared the amount for “environmental” projects with the total development budget in each major economic sector as an indication of the extent of environmental mainstreaming. No conclusions were drawn regarding the targeting of donor aid. Project effectiveness was not examined, either for government-funded or for donor-funded projects.

### **Malawi (1998)**

*Title.* “Review of Public Expenditure by Function in the Forestry Department,” R. W. S. Nyirenda, consultancy report apparently commissioned by the World Bank and the Department of Forestry, Malawi, March 1998 (not final draft).

*Purpose.* To assess the functions and expenditure patterns of the Forestry Department for use as an input when determining future resource requirements.

*Definition of environmental expenditure.* Examined all “forestry” expenditures, which implicitly were all expenditures by the Forestry Department.

*Scope.* Examined both the capital and the recurrent expenditures of the department.

*Comparison with policy priorities.* None.

*Other key comparisons and analyses.* Compared official budgets with original requests and with actual expenditures. Within recurrent expenditures, looked at trends in shares of personal emoluments and other recurrent transactions. Examined trends in different expenditure categories by cost center.

*International comparison.* None.

*Period covered.* 10 years (1988–98).

*Quality/project-level analysis.* Followed up evidence of funding anomalies for some projects/cost centers with field visits.

*Foreign aid.* No indication of whether donor-funded projects were considered in this analysis, but the comparison between budget requests and actual budgets would seem to indicate that they were not.

### **Kenya (1998)**

*Title.* “Ministerial Public Expenditure Review,” Ministry of Natural Resources, Kenya, September 1998; funded by the World Bank, according to Peter Dewees, lead environmental

specialist, Economically and Socially Sustainable Development—Europe and Central Asia (ECSSD), World Bank.

*Purpose.* To identify ways of achieving greater efficiency in the use of resources prior to a likely budget cut. The Treasury requested all ministries to perform such a review in the run-up to development of a medium-term expenditure framework.

*Definition of environmental expenditure.* None.

*Scope.* Looked at all expenditures of the Ministry of Natural Resources, broken down by program and economic type (capital, recurrent operations, wages, etc.).

*Comparison with policy priorities.* Although one of the objectives of the report was to create stronger links between expenditures and policy priorities, no comparison between the two appears to have been made.

*Other key comparisons and analyses.* No comparison of environmental expenditures (those by the environmental ministry) with those of other ministries and sectors was made, nor was there an analysis of the trends in capital and recurrent expenditures in particular programs, although this probably could have been done with the data available.

*International comparison.* None.

*Period covered.* Several years.

*Quality/project-level analysis.* Although an aim of the report was to relate resources to outputs, little output analysis was actually performed.

*Foreign aid.* Examined donor-funded projects in the course of reviewing projects that passed through the Ministry of Natural Resources. A table containing information on “donor development expenditures” showed funding for various programs over several years. There was, however, no analysis of aid effectiveness, the ministry’s management of the aid, or whether the assistance matched policy priorities.

### ***Thailand (1999)***

*Title.* “Building Partnerships for Environmental and Natural Resource Management,” Royal Thai Ministry of Science, Technology and the Environment and the World Bank’s Social Development Sector Unit and Thailand Country Management Unit, 1999.

*Purpose.* To promote dialogue and build partnerships with government and civil society; to provide a framework for World Bank involvement in the energy sector; and to contribute to the structural and social policies review (SSPR) under way at the time. Another important goal was to examine the impact of the Asian financial crisis on the environment and on environmental expenditures.

*Definition of environmental expenditure.* None given, although expenditures were categorized as water pollution, air and noise pollution, solid and hazardous waste, and other (management).

*Scope.* Expenditures from seven ministries were reviewed. Capital and recurrent expenditures were not disaggregated. Private sector expenditures were examined to some extent, although separately from public expenditures.

*Comparison with policy priorities.* None.

*Other key comparisons and analyses.* Trends in expenditure on various environmental problems (media) tracked over the three years covered.

*International comparison.* None.

*Period covered.* Three years (1996–98).

*Quality/project-level analysis.* No project-level analyses were provided, other than comments regarding cost recovery for some services such as wastewater treatment. In a discussion of environmental sector revenues, the report noted the extent to which the polluter-pays principle and market-based instruments, such as product taxes, user charges, input taxes, royalties, and pollution charges, had been introduced.

*Foreign aid.* Not addressed specifically, although one of the stated purposes of the report was to develop dialogue for further World Bank involvement in the country. The main goal, however, was to examine whether environmental spending had declined as a result of the Asian financial crisis, and the report accordingly focused on the government's own expenditure priorities.

### ***Republic of Korea (2000)***

*Title.* "The Environmental Dimension of the Crisis: A Step Back or a New Way Forward?" World Bank, Environment and Social Development Unit for the East Asia and Pacific Region, and Korea Institute for Environmental Security, 2000.

*Purpose.* The report included a review of the government's "environmental budget" in order to examine how environmental spending had

fared in comparison with the budget as a whole during the Asian financial crisis.

*Definition of environmental expenditure.* An explicit definition was not provided, but implicitly environmental expenditure included expenditures for tap water and sewage treatment; waste treatment; policy development and research and development (R&D); nature conservation; air quality; and environmental management and miscellaneous.

*Scope.* Primarily concentrated on expenditures by the Ministry of Environment. (Forestry issues were added to this ministry during the review period, and the relevant expenditures of the ministry that previously handled forestry were included for the period that they were not under the Environment Ministry.) Both capital and recurrent expenditures were examined.

*Comparison with policy priorities.* Done to some extent, in that the report noted that programs which were not cut were generally high priorities for the government.

*Other key comparisons and analyses.* Compared trends in different environmental "programs" (as listed under *Definition of environmental expenditure*) with those for the budget as a whole.

*International comparison.* None.

*Period covered.* Three years (1997–99).

*Quality/project-level analysis.* None.

*Foreign aid.* The focus was on the government's own expenditure in the context of the Asian financial crisis; foreign aid issues were not examined.

### **Indonesia (2001)**

*Title.* “Public Environmental Expenditure in Indonesia,” Jeffrey R. Vincent and others for the World Bank East Asia Environment and Social Development Unit (EASES) Discussion Paper Series, June 2001. Prepared as part of the World Bank study “Indonesia: Environment and Natural Resource Management in a Time of Transition.”

*Purpose.* To examine changes in environmental expenditures following the Asian financial crisis and to provide baseline information for future examination of trends and patterns.

*Definition of environmental expenditure.* Developed three categories of environmental expenditure—core, mitigating, and incidental—but because of data availability problems, examined only core expenditures. (The threefold typology is discussed in detail in Chapter 4.)

*Scope.* The study was limited to “core” capital expenditures financed by the government; it did not cover recurrent expenditures or projects financed by donors.

*Comparison with policy priorities.* None.

*Other key comparisons and analyses.* Compared amounts and trends of environmental expenditures with those of nonenvironmental programs and with macroeconomic variables such as GDP. Also compared expenditures across provinces to determine the main variables accounting for differences in spending patterns, such as population, amount of protected land, and average income.

*International comparison.* Some comparisons were made with other countries in the region

that were also affected by the Asian financial crisis.

*Period covered.* Examined trends over a number of years.

*Quality/project-level analysis.* None.

*Foreign aid.* Because of data availability problems, the study only looked at (investment) expenditures funded by the Indonesian government, and it specifically noted that it did not analyze donor-financed projects.

### **Uttar Pradesh, India (not yet completed)**

*Title.* “Environmental Review of Budgetary Expenditures in Uttar Pradesh” (from draft terms of reference).

*Purpose.* To review environmental expenditures across sectors and over time to determine whether expenditures are commensurate with the economic cost of degradation and correspond to the state’s environmental priorities and to the underlying environmental problems.

*Definition of environmental expenditure.* As in the Bangladesh PEER, based on the definition used in Brandon and Ramankutty (1993). Although the terms of reference refer to expenditures under this definition as “core environmental expenditures,” they do not mention the core/mitigating/incidental typology used in the Indonesia and Mongolia PEERs.

*Scope.* Covers expenditures by “core” environmental agencies, as well as by nonenvironmental agencies in the state government. Looks at both developmental/capital and operating/routine expenditures.

*Comparison with policy priorities.* Yes.

*Other key comparisons and analyses.* Comparison of environmental expenditures by economic sector and with overall budget expenditures and GDP. The study will also summarize available information on potentially “environmentally damaging” state subsidy programs.

*International comparison.* No.

*Period covered.* Budget years 1995/1996 through 1999/2000.

*Quality/project-level analysis.* The original terms of reference state that this review will be a first step in exploring the “efficiency and quality” of expenditures in order to determine whether public resources are being used most cost-effectively. According to Carter Brandon, the project manager, an examination of expenditure quality will be included in the terms of reference for an additional part of this PEER.

*Foreign aid.* The terms of reference note that the report should “review and analyze trend information on foreign funding sources for core environmental expenditures, typically, funding from donor and other agencies.” Actual aid coverage will be reviewed once the World Bank completes the Uttar Pradesh PEER.

### ***Ukraine (not yet completed)***

*Title.* “Policy Options for Financing Sustainable Development: Review of Environment Public Expenditure” (from terms of reference).

*Purpose.* To determine whether money distributed from a fund within the Ministry of Environment actually went to the purposes for

which it was intended. The current goals of the study are somewhat different from the original terms of reference. This overview is based on the revised goals as stated by Adriana Damianova, senior environmental specialist, ECSSD, in an interview with ECON.

*Definition of environmental expenditure.* Primarily uses the OECD pollution abatement and control (PAC) definition discussed in Chapter 4.

*Scope.* Looks primarily at money distributed from a fund located within the Ministry of Environment and financed mainly by earmarked pollution charges. The ministry distributes this fund to local governments, which in turn provide grants to primarily state-owned enterprises for PAC-type expenditures. The report also examines direct environmental expenditures by the Ministry of Environment and other ministries.

*Comparison with policy priorities.* The report will give some indication of the degree to which expenditures meet broad priorities.

*Other key comparisons and analyses.* Between planned and actual expenditures.

*International comparison.* Some comparison with neighboring countries, in particular Belarus and Poland.

*Period covered.* Several years may be covered, but the purpose of the report does not appear to be to examine trends.

*Quality/project-level analysis.* Much of the study appears to be a tracking exercise to follow money to the project level. The study apparently will not analyze whether individual projects are efficiently managed.

*Foreign aid.* The Ukraine PEER is focusing on traditional pollution abatement and control expenditures originating from a special fund within the Ministry of Environment. Issues relating to donor financing apparently will not be considered, since the fund has received no donor support.

### ***Mongolia (expected 2002)***

*Title.* “Mongolia Environmental Expenditure Review” (the draft was reviewed for this study). To be a chapter in a full PER—apparently, the first time that a review of environmental expenditures will be included in a PER.

*Purpose.* To provide baseline information on trends and patterns in environmental expenditures.

*Definition of environmental expenditure.* Looks at public expenditures for “environment and natural resource management,” using the same core/mitigating/incidental categories as in the Indonesia PEER.

*Scope.* Like the Indonesia PEER, limited to “core” expenditures. Reviews expenditures by “core” environmental and natural resource management agencies and by nonenvironmental bodies but notes that data for line agencies other than the Ministry of Environment are very limited.<sup>6</sup> Covers both recurrent and capital expenditures.

*Comparison with policy priorities.* Yes.

*Other key comparisons and analyses.* Compares totals and trends of environmental expenditures with those for total public expenditures and basic economic indicators. Compares the development budget for

environmental projects with the development budgets of other “social expenditure” categories such as education, health, and housing.

*International comparison.* Comparison of amounts and trends with other countries in the region (for example, share of GDP, share of total public expenditure per capita).

*Period covered.* Several years.

*Quality/project-level analysis.* The report specifically notes that it does not examine the cost-effectiveness either of expenditures or of the benefits they generate.

*Foreign aid.* Analyzes expenditures from both the current budget and the development budget. Although the latter presumably includes a high degree of donor financing, this is not indicated specifically in the report, and aid issues per se are not discussed. Table 1. Summary of issues covered by World Bank PEERs

## **OUTSIDE THE WORLD BANK**

This section describes the various instruments used by the OECD, the UNECE, and individual countries that could be considered similar to PEERs.

### ***OECD environmental performance reviews***

The OECD Working Party on Environmental Performance (WPEP) began conducting environmental performance reviews (EPRs) in 1992. The purpose of these peer reviews is to help OECD countries improve their individual and collective performance in environmental management and to stimulate policy dialogue and accountability. EPRs systematically review the performance of individual OECD countries

**Table 1. Summary of issues covered by World Bank PEERS**

<i>Country (year)</i>	<i>Purpose</i>	<i>Definition of environmental expenditure used</i>	<i>Scope</i>	<i>Comparison with policy priorities</i>	<i>International comparisons</i>	<i>Period covered</i>	<i>Project-level analysis</i>	<i>Foreign aid included/specifically examined</i>
<b>Philippines</b> (1996)	Determine impact of macroeconomic strategy on environment	Not explicit	Selected departments	Yes	No	Single year	No	Not clear/no
<b>Bangladesh</b> (1997)	Improve environmental management	Brandon and Ramankutty (1993)	Capital expenditure only, across government	Yes (NEMAP)	No	Single year	No	Yes/no
<b>Malawi</b> (1998)	Determine future resource requirements	Forestry Department expenditures	Department	No	No	Multiyear	Yes	No/no
<b>Kenya</b> (1998)	Prepare for budget cut	Not explicit	Ministry	No	No	Multiyear	No	Yes/no
<b>Thailand</b> (1999)	Examine impact of Asian financial crisis	Not explicit	Across government	No	No	Multiyear	No	No/no
<b>Korea, Rep. of</b> (2000)	Examine impact of Asian financial crisis	Not explicit	Ministry	Some	No	Multiyear	No	No/no
<b>Indonesia</b> (2001)	Examine impact of Asian financial crisis	"Core"	Capital expenditure only, across government	No	Some	Multiyear	No	No/no
<b>Uttar Pradesh, India</b> (to be completed)	Compare with priorities and problems	Brandon and Ramankutty (1993)	Across state government	Yes	No	Multiyear	Yes (revised terms of reference)	Yes/yes
<b>Ukraine</b> (to be completed)	Track funds	OECD pollution abatement and control (PAC) definition	Primarily fund within ministry	Some	Some	Not defined	Some	No (no foreign aid goes to fund)
<b>Mongolia</b> (expected 2002)	Provide baseline on trends and patterns in expenditure	"Core"	Across government	Yes	Yes	Multiyear	No	Yes/no

Note: NEMAP, national environmental management and action plan; OECD, Organisation for Economic Co-operation and Development.

in meeting domestic policy objectives and international commitments in the environmental sphere. The reviews are largely modeled on the methodology of the OECD's well-known economic surveys (see OECD 1997; similar sectoral review programs exist for energy, agriculture, and environmental assistance). Although EPRs look at environmental expenditures, expenditure analysis is not the focus of these reports, which also review environmental policies and commitments.

The expenditure analysis (usually found in the "economic" chapter) covers both public and private expenditures, based on pollution abatement and control (PAC) data that the OECD collects and publishes on a regular basis, independent of the EPR process, and on additional information collected during the EPR process. (A discussion of EPR methodology is presented in Box 1.) In addition to traditional PAC expenditures, the reviews have also looked at expenditures for nature protection and, occasionally, for water supply. This is complemented by other types of

economic information such as environmentally relevant subsidies and taxes, water and energy prices, and official development aid. EPRs also review environmental institutions and individual programs, although not necessarily as part of the expenditure analysis.

In recent years the OECD has reviewed expenditures in a number of non-OECD countries, notably in Central and Eastern Europe and the former Soviet Union. Most of this work has been part of a special OECD program for nonmember countries (see the next section). Reviews under this nonmember program have not always closely followed the EPR format. Much work has concentrated on the management of special environmental funds, which are prevalent in these countries.

### *OECD environmental expenditure reviews of nonmember countries*

Several analytical products on environmental expenditure have been developed in the framework of OECD cooperation with nonmember countries, notably in Central and Eastern Europe, the former Soviet Union, and

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#### **BOX 1**

##### **Examples of common analyses carried out in OECD EPRs**

- Changes in PAC expenditures—for example, between two reviews, in real terms or as a proportion of total expenditure (e.g., of total business expenditure)
- Shares of total PAC expenditures by the public and private sectors; changes in these shares over time; and the difference in growth rates between sectors
- Shares of different media (e.g., "air management") within total or sector PAC expenditure; changes in these shares over time; and the difference in growth rates between media
- Total or sectoral PAC expenditure as a share of GDP, a share of total gross fixed capital formation, and in per capita terms; changes in these shares over time
- Division of total PAC expenditures between investment and current expenditure; changes in real terms and in shares over time
- Environmental taxes: lists of taxes, related revenues, and share of total tax revenues
- Agricultural subsidies as a share of total agricultural spending.

*Source:* Based on a review of the Norway and Portugal EPRs. OECD (1996) notes that in order for PAC expenditure data to be useful for policy purposes, they must be related to other variables.

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China. This work has usually been carried out with the support of external consultants, financed by several member countries (to date, mainly Denmark, but also Australia, Germany, and Japan, as well as the European Commission). The most relevant products include:

- Environmental expenditure reviews in selected countries of Central and Eastern Europe and the former Soviet Union
- Environmental financing strategies
- Performance reviews of institutions managing public environmental expenditure
- Analysis of environmental finance flows in Central and Eastern Europe and the former Soviet Union.

***Environmental Expenditure Reviews in Selected Countries of Central and Eastern Europe and the Former Soviet Union.*** The most recent publication in this category, “Overview of Environmental Expenditure in the NIS,” covers environmentally related expenditure in two *oblasts* (regions) of Russia—Novgorod and Pskov—and in Georgia. It is based on surveys of major polluting enterprises, together with data from government budget reports and other sources, to improve and supplement official expenditure data.

The special issue examined in Russia was the use of money surrogates in public environmental expenditure. In Georgia, with the financial support of the Danish Environmental Protection Agency, the OECD/Environmental Action Programme for Central and Eastern Europe (EAP) Task Force assisted the government in designing and implementing a revised system for the regular collection and dissemination of environmental expenditure data compatible with international standards.<sup>7</sup>

***Environmental Financing Strategies.*** Environmental financing strategies (EFSs) analyze available and committed expenditures related to the implementation of selected environmental programs and compare them with detailed estimates of costs (expenditure needs) in a long-term strategic planning framework. EFSs also analyze scenarios and policies aimed at financing expenditure deficits by mobilizing additional expenditure or revising the targets and designs of environmental programs. They use existing environmental expenditure reviews or are developed in parallel with those reviews. So far, financing strategies for urban water and wastewater have been completed for Georgia, Kazakhstan, Moldova, and two oblasts of the Russian Federation, Novgorod and Pskov. EFSs are under development in Armenia (wastewater only); Sichuan Province, China (wastewater only); East Kazakhstan oblast, Kazakhstan; Latvia; and Russia’s Kaliningrad, Rostov, and Yaroslavl oblasts (in addition to the EFSs for Novgorod and Pskov). Novgorod, Rostov, and Yaroslavl oblasts are also developing solid waste financing strategies.<sup>8</sup>

***Performance Reviews of Institutions Managing Public Environmental Expenditure.***

Performance reviews of institutions that manage public environmental expenditure focus on reviewing the quality of specific public environmental expenditure programs. For the most part, they have concentrated on the management of the special budgetary and off-budget environmental funds that are prevalent in many transition economies, including the Czech Republic, Estonia, Kazakhstan, Moldova, Poland, and Slovenia.<sup>9</sup>

***Analysis of Environmental Finance Flows in Central and Eastern Europe and the Former***

**Soviet Union.** The OECD is currently preparing a report entitled “Analysis of Environmental Finance Flows in the CEE and the Former Soviet Union” for the upcoming Environment for Europe Ministerial Conference, to be held in Kyiv, Ukraine, in May 2003. The report analyzes trends since 1996 in environmental expenditure in all Central and Eastern European and former Soviet Union countries. It includes additional country surveys to trace trends in domestic public and private expenditures, and it uses the OECD/DAC Creditor Reporting System (CRS) database, complemented by additional surveys by individual donors and international financial institutions, to trace trends in environmentally related official development assistance (ODA) and official assistance to the region.

### ***UNECE environmental performance reviews***

The OECD helped the UNECE set up its environmental performance review program, which is based on OECD methodology. The main difference between the two series is geographic coverage: the UNECE program was set up to cover member countries that are not members of the OECD.

### ***Country internal reporting***

A number of OECD countries have established regular reporting or accounting systems on environmental expenditure. Such reporting is mainly of a statistical nature and is often based on ongoing data collection using satellite accounts under the System of Integrated Environmental and Economic Accounting (SEEA), the related European System for the Collection of Economic Information on the Environment (SERIEE), or the OECD’s original PAC methodology. Several countries, including Canada, have developed their own

systems, which are usually based on those mentioned above. It should be noted that a goal of the World Bank in the context of PERs is to develop countries’ ability to eventually evaluate their own expenditures.

## **CONCLUSIONS**

This section summarizes the findings from the review of PEERs and similar tools used within and outside the World Bank.

### ***Reasons for performing PEERs***

PEERs have had a wide variety of purposes. These include measuring the impacts of the Asian financial crisis, preparing a ministry for budget cuts, tracking funds, and determining future resource requirements. Measuring environmental management capacity has not usually been one of their purposes. Although the OECD and UNECE environmental performance reviews cover this issue, they do not explicitly use expenditure analysis to do so (except perhaps for some reports on nonmembers). This wide variety of purposes presumably accounts for much of the similarly wide variety in coverage and in the types of analysis performed.

### ***Definitions of environmental expenditure***

Definitions of environmental expenditure have varied greatly, and some PEERs have not provided any explicit definition.

### ***Scope***

Most PEERs have significantly limited the scope of the expenditures they cover. This is the case not only for the OECD and UNECE EPRs, which concentrate mostly on pollution abatement and control expenditures, but also

for World Bank PEERs. Some World Bank reviews have limited their coverage to capital expenditures or to expenditures by particular ministries. Most of the limitations appear to be attributable to data availability problems in particular countries. While some differences in scope are probably unavoidable, the development of common guidelines may make it possible to eliminate some differences that are not strictly due to data availability.

According to the OECD, the main reason for the initial focus on PAC expenditure in OECD reports was the importance of PAC-related policy decisions and investments in the 1970s and 1980s. Nature protection expenditure was added in 1996, but a major constraint has been the quality and comparability of such data and hence their interpretability. The OECD states that keeping PAC expenditure as a core data set helps maintain certain time-series and ensure a minimum of coherence among countries. When used in country environmental performance reviews, PAC data are completed systematically, using information about other types of environmental or related expenditure that is relevant for the reviewed country's specific situation.

The OECD notes that difficulties in defining which part of expenditures for nature protection or natural resource management should be regarded as environmental expenditure pose an obstacle when it comes to data collection, leaving much room for interpretation. These differences create important boundary issues that can distort the results and hamper comparability among countries and over time.

### *Use of international comparisons*

In contrast to the OECD and UNECE reviews, most World Bank PEERs have not engaged in international comparisons. Because of the differences among countries, comparisons should be used with caution. At best, they should serve only to identify gross anomalies that could be followed up in more detail using other analytical methods. Used properly, however, international comparisons and benchmarks can be helpful. As increasing numbers of PEERs are performed according to more uniform guidelines, more international comparisons and the development of benchmarks should become possible.

### *Comparison with policy priorities*

Although the OECD and UNECE reviews cover policy priorities and make comparisons between these priorities and aggregated expenditures, they do not perform such evaluations at the program or project level. (An exception has been some OECD reports on nonmembers.) Fewer than half of the World Bank PEERs compare expenditures with policy priorities. In the CEA context, this should be an important component of PEER analysis.

### *Types of analysis performed*

Other analyses performed in the World Bank PEERs varied from one report to another, presumably because of data availability. The most common comparison was between overall environmental expenditures and the budget as a whole. The usefulness of comparisons with economic indicators was questionable in those reports that examined only one year. Most World Bank reports reviewed expenditures over more than one fiscal year; 3

of the 10 did not. Typical analyses performed by OECD and applied as well in World Bank and UNECE EPRs are presented in Box 1. It would appear that there is a set of core ratios that are used for each EPR report.

### *Examination of the quality of expenditure*

Almost none of the reviews examined the quality of expenditure at the project level. Project-level analysis has been recommended as an important component of general PERs (see “Issues related to project-level analysis” in Chapter 2).

#### Discussion of data and methodological issues

Apart from the EPRs, most reports did not describe the data or methodological issues encountered. As noted in Chapter 2, such discussion provides a better context for the data presented in the report and facilitates follow-up reports in the country, and possibly in other countries to the extent that similar problems are encountered elsewhere. It may be useful for future PEERs to include such discussions and for these to be reviewed periodically for summary in a regularly updated section within the PEER guidelines.

#### Discussion of foreign aid

Some World Bank PEERs do not include donor projects in the database of environmental expenditures considered for analysis. Of those that do, most do not single out donor projects for special consideration; they perform the same analyses on donor projects as on other environmental expenditures without distin-

guishing between them. Since most PEERs have not analyzed the appropriateness or effectiveness of projects in relation to policy priorities, in practice this means that little has been done in PEERs to look at these issues with respect to donor projects. It is thus difficult to determine from most PEERs such basic and potentially important questions as how much expenditure is accounted for by donor financing and the extent to which donor-funded projects in the environmental field match the government’s policy priorities.

Perhaps the main reason for the relatively limited coverage of aid issues is that the primary concern of most PEERs has been the use and prioritization of the government’s own funds. This is especially true for those studies that examined the effects on environmental expenditure of the Asian financial crisis. The World Bank may wish to consider a more comprehensive examination of foreign environmental assistance in the context of PEERs, for the following reasons:

- The government’s ability to handle foreign aid and incorporate such assistance into its environmental program could be an important indicator of its management capability in the environmental sector, which is ultimately what the CEA and PEERs are trying to measure.
- One goal of the CEA is to contribute to better coordination of aid. The PEER could play a key part here by evaluating the current extent of such coordination and providing important background data for further coordination.



## Chapter 4

# Definition and Typology of Environmental Expenditures

**D**efining environmental expenditure is an important initial step for a PEER. The definition guides the selection of expenditures to be included in the review's database that then feeds into the analysis. Standardization of the definition and the classification will facilitate more meaningful comparisons across countries (keeping in mind the caveats about international comparisons mentioned earlier).

This chapter reviews definitions and classification systems for environmental expenditures that have been used within the World Bank and elsewhere. It concludes with a suggestion for developing a definition and classification system for PEERs.

### OECD DEFINITION AND CLASSIFICATION SYSTEMS

The framework developed and used by the OECD to collect comparable environmental protection expenditure data from its member countries derives from the OECD pollution abatement and control (PAC) expenditure framework that was elaborated in the 1970s and refined in the 1980s. The scope of the framework has evolved over time as national

and other international work has progressed. Currently, it covers both PAC expenditure and nature protection expenditure and is harmonized with the SERIEE framework developed by Eurostat. It defines and categorizes environmental expenditures and provides rules for mapping their flow (for example, transfers via fees and subsidies between the public and private sectors). The purpose is to provide a "general indication of a country's financial efforts directed at pollution abatement and control and other environmental protection activities." The OECD uses PAC and other environmental expenditure data extensively in its environmental performance reviews of OECD member countries and also publishes separate cross-country comparison studies.

### *The OECD PAC framework*

The OECD defines PAC activities as "purposeful activities aimed directly at the prevention, reduction and elimination of pollution or nuisances arising as a residual of production processes or the consumption of goods and services" (OECD 1996). The PAC framework's concept of purposeful and direct expenditures is somewhat analogous to the concept of "core" expenditures used in the Indonesia PEER

(Vincent and others 2001) and also includes the concept of “mitigating” expenditures used in that PEER. (In fact, most PAC expenditures by the private sector are likely to fall under that definition of “mitigating.”) The methodology does not directly refer to government regulations but notes that in some cases reference to government regulations can help define what is meant by “mainly for environmental protection purposes.” Otherwise, it assumes that such expenditures have been made primarily for nonenvironmental reasons. This would mean the exclusion of, for example, energy-saving expenditures made for purely commercial or technical reasons. Such expenditures are somewhat analogous to Vincent’s concept of “incidental” expenditures. The PAC definition specifically excludes natural resource management and nature protection. The PAC framework’s focus on “brown,” as opposed to “green,” environmental issues reflects its origin as a system for mapping expenditures in OECD countries.

The PAC framework is designed to capture expenditures by three sectors: the public sector, the business sector, and households (the last two being subdivisions of the private sector). The business sector is further divided into agriculture, hunting, fishing, and forestry; mining and quarrying; manufacturing; electricity, gas, and water; and “other.”

In theory, most government expenditures could be accounted for under the PAC framework—which explicitly includes regulation and monitoring, as well as general administration of the environment—as long as these expenditures are not aimed at natural resource management or other activities not within the PAC definition. The coverage of public expenditures by the PAC framework may,

however, be too aggregated for the purposes of PEERs. The OECD/Eurostat Questionnaire on Environmental Protection Expenditure and Revenues (EPER), which is used to collect PAC and other environmental protection data, only asks governments to break down public expenditure by economic category (recurrent, capital, transfer) and by medium or “domain” (air, wastewater, waste, soil and groundwater, noise, biodiversity and landscape, and “other”), building on the 2000 Classification of Environmental Protection Activities and Expenditure (CEPA) developed by UNECE and Eurostat.<sup>10</sup>

PAC and other environmental protection expenditures are normally categorized by the sector carrying out the activity (the “abater principle”). Adding or subtracting transfers such as fees and subsidies to or from the aggregated sector totals yields figures for the total expenditures financed by each sector.<sup>11</sup> In practice, few countries provide enough information on transfers to enable expenditures to be listed by the “financing” principle.

The most relevant transfers in the context of PEERs are likely to be those from a higher to a lower level of government. Given the highly aggregated nature of reporting, the OECD framework provides little guidance on transfers within sectors—for example, within the public sector. (Other relevant transfers may include those proposed for “specialized producers” of environmental goods and services, as described in “The OECD/Eurostat questionnaire,” below.)

It should be noted that fines or penalties (and the related interest) for noncompliance with environmental regulations, and compensation to third parties for environmental damage, are

not treated as environmental expenditures, “as they are not directly linked with an environmental protection activity” (OECD 1997).

### *The OECD/Eurostat questionnaire*

Since 1996, the OECD has collected PAC data using a joint questionnaire with Eurostat.<sup>12</sup> In 2000 and 2001 the two organizations held meetings to further harmonize data definitions, categorization, treatment, and collection and to integrate the OECD PAC framework and the Eurostat SERIEE framework. Although some changes might be the result of harmonization, the main drivers appear to be developments in the emphasis, organization, and structure of environmental protection over the past decade. These include, notably:

- Greater emphasis in OECD members and other countries on nature protection
- Increasing privatization and outsourcing of environmental services such as management of waste and wastewater.

The OECD’s EPRs also provide information on environmental expenditures, defined as expenditures on PAC activities plus nature conservation plus water supply.

The definition of “environmental protection expenditure” currently used by the OECD includes PAC plus protection of biodiversity and landscape (nature protection) and R&D.<sup>13</sup> It describes environmental protection activities as “purposeful activities aimed directly at the prevention, reduction and elimination of pollution or any other degradation of the environment resulting from the production processes or from the use of goods and services.” The domains covered have been revised and are now fully harmonized with the 2000 revision of the Eurostat/UNECE

CEPA. The activities and the outputs of the first level of the CEPA classification are listed in the “CEPA” section, below.

The questionnaire combines domains 7 and 8 (radiation and R&D) of the CEPA with domain 9 (“other”). The OECD notes that a potential problem for cross-country comparison can arise when country data sources do not cover all domains or when they include additional domains (such as biodiversity) under “other.” In such cases, the OECD states that the reporting party should specify coverage in an accompanying note. (A conceptual way around this may be to replace the “other” category with “general” or “general/other,” as proposed in the “Definition and typology” section, below.)

The current OECD definition of environmental protection activities continues to exclude water supply. (The World Bank’s Bangladesh and Uttar Pradesh PEERs, which follow the definition in Brandon and Ramankutty 1993, also specifically exclude water supply projects, arguing that they “do not have unambiguous impacts on the environment.”) In addition, the OECD definition excludes natural resource management.

In recognition that several important environmental services such as waste collection and wastewater management are being outsourced and privatized, a new sector, “specialized producers of environmental services,” has been added. It apparently is to be distinct from both the public sector and the business sector, although it can be divided into public and private actors to account for the various ownership and organizational structures in this field. (An example of a public specialized producer might be the waste management

department of a municipality.) This new sector is primarily designed to capture activities under ISIC/NACE 90, that is, waste collection and wastewater treatment.<sup>14</sup> It would also include environmental consultancies. Regarding the latter, it is not clear to what extent other public sector activities that potentially could be privatized or outsourced (for example, nature protection services and parks administration) should be included in this sector. The OECD states that expenditures by enterprises for producing market environmental goods such as environmental protection equipment, materials, and other parts of the environment industry should not be accounted for in the specialized producers sector.

A variation of the economic category “current expenditures” excludes services outsourced to specialized producers. The new category, “internal current expenditure,” includes expenditures on such things as energy, material, use of own personnel for internal measures, and maintenance (apparently even when such maintenance is outsourced, since maintenance of a vehicle fleet, for example, is arguably not performed by “specialized producers of environmental services”). All purchases of environmental services, as well as expenditures on permits, surveillance fees, and earmarked environmental taxes, are recorded under another economic classification, “fees/purchases.”<sup>15</sup> This category does not include fines and penalties or “payments of general environmental or green taxes (such as energy taxes).”

The OECD/Eurostat questionnaire also calls for increased provision of methodological information by reporting countries, notably with respect to the scope, coverage, and quality of the data. This information will facilitate the

proper comparison of data among countries. The questionnaire provides specific instructions for such information next to the relevant tables and also in a separate, more general, methodological part.

In the framework of cooperation with non-member countries, the OECD has extended the coverage of expenditure classification to cover four categories of environmentally related expenditure:

- *Pollution abatement and control (PAC).* Expenditure for deliberate investments and actions to reduce pollution levels, calculated using the OECD’s internationally accepted methodology
- *Technological improvements.* Enterprise investments and actions taken for commercial reasons that nonetheless have environmental benefits
- *Nature protection activities*
- *Drinking water supply and other natural resources management investments and operations,* a category not classified as an environmental expenditure in most OECD countries or in current statistics of the newly independent states (NIS).

### **OECD/DAC Creditor Reporting System**

The Creditor Reporting System (CRS), administered by OECD/DAC, is the premier international source of data on bilateral and multilateral aid commitments. The CRS database includes fields that enable users to screen for environment-related aid. Each transaction includes a purpose code highlighting the specific area of the recipient’s economic or social structure that the transfer is intended to foster. The 188 purpose codes include 7 within the category “general environmental protection,” as shown in Table 2.

**Table 2. Environmental protection purpose codes in the Creditor Reporting System**

<i>Code</i>	<i>Description</i>
DAC 5: code 410	General environmental protection
<i>CRS code</i>	
41010	Environmental policy and administrative management
41020	Biosphere protection
41030	Biodiversity
41040	Site preservation
41050	Flood control/preservation
41081	Environmental education/training
41082	Environmental research

Each transaction also includes a purpose code prefix that identifies the flow as follows: (1) an “investment project,” (2) “other resource provision including commodities and supplies,” (3) “technical cooperation,” or (4) “program aid/cash.”

It is also possible to draw on other fields in the CRS database to disaggregate environmental aid by donor (bilateral, multilateral) and by aid instrument (loan, grant, grant component). Another field indicates whether an environmental impact assessment was required. An “environmental marker” field can be used to record whether environmental objectives are a primary objective of the transaction (= 2); are a significant objective (= 1); or are not targeted (= 0). In practice, most donors do not appear to report an environmental marker.

A potential problem with using the CRS purpose codes is that they are a mixture of government functions (for example, “policy and administrative management,” “education/training,” “research”) and environmental domains (“biosphere protection,” “biodiversity”). This contrasts with the CEPA

codes, which are based consistently on environmental domains. The categories used in the CRS database are also perhaps a bit dated, which could impede the recording of more recent trends in environmental expenditure. It should also be pointed out that “flood control/preservation” probably would not be considered an environmental expenditure in

many classification systems, including those that have been used in most World Bank PEERs, since it relates to protection of human beings from the environment rather than vice versa.

### **SEEA/SERIEE**

The System of Integrated Environmental and Economic Accounting (SEEA) grew out of the environmental accounting movement that followed the 1992 United Nations Conference on Environment and Development (the Rio “Earth Summit”). The SEEA, directed by the London Group on Environmental Accounting, attempts to account for the environment and natural resources in a way that can be integrated with the System of National Accounts. (The London Group is an informal group composed of experts from countries and representatives of international organizations, including the United Nations, the World Bank, the OECD, and Eurostat.) The European System for the Collection of Economic Information on the Environment (SERIEE) is essentially a more detailed subset of the SEEA that was developed for European Union (EU) countries by Eurostat.

A draft revision of the SEEA handbook was approved by the UN Statistical Commission in March 2002, subject to minor changes. Chapter 5 in the revised handbook covers “economic activities and products related to the environment.” It (informally) defines environmental activities as “those which reduce or eliminate pressures on the environment and which aim at making more efficient use of natural resources.”<sup>16</sup> Under this definition it includes those activities “which are not necessarily carried out for environmental protection reasons but which nevertheless produce clear, measurable environmental benefits.”

The SEEA report also proposes a classification of environmental activities by purpose, as follows:

- Environmental protection activities
- Natural resource management and exploitation activities
- Environmentally beneficial activities
- Minimization of natural hazards.

It defines environmental protection activities as “those where the primary purpose is the protection of the environment, that is the avoidance of the negative effects on the environment caused by economic activities.” The classification suggested for this group of activities is the CEPA (see the next section).

“Natural resource management activities” appears to be less firm as a category. It includes:

*research into management of natural resources, monitoring, control and surveillance, data collection and statistics, cost of the natural resources*

*management authorities at various levels as well as temporary costs for facilitating structural adjustments of sectors concerned. . . . Activities and transactions specifically for environmental protection, for example management of protected forests, are not included [but are included under environmental protection] . . . Similarly, qualitative protection activities of natural resources, for example activities for biodiversity and landscape protection or activities aimed at preserving certain functions or the quality of the natural environment (air, water, soil and groundwater), are also included under environmental protection.*  
(London Group on Environmental Accounting 2002)

Table 3, based on the SEEA report, illustrates the division between natural resource management and exploitation activities.

The SEEA report also explores criteria that may be used to determine whether particular expenditures should be included under its definitions:

- A. *The pure purpose criterion.* “Activities and expenditure where the main objective is protecting the environment are included in full. This criterion works best when the main objective of protecting the environment is clear and unambiguous, for example, end-of-pipe capital expenditure.”
- B. *The extra-cost criterion.* This “is used to identify the portion of the cost of more environmentally friendly technologies and changes in processes and products to be attributed to environmental protection. The investment and operating expenditure are

**Table 3. Natural resource management activities and exploitation activities, SEEA classification**

<i>Resources</i>	<i>Management</i>	<i>Exploitation</i>
Subsoil assets	Administration of permits, planning, supervision, research, regulation	Exploration and extraction
Inland waters	Administration of waterways and water bodies, supervision, research, elaboration of plans and legislation, water police	Exploration, extraction, treatment, distribution
Forest resources	National forest inventories, research for pest control, regulation	Silvicultural activities, including harvesting and reforestation
Wild flora and fauna	Supervision and control of fishing fleets, assessment of stocks, administration of quotas and licenses, research, regulation	Harvesting, fishing, hunting

Source: London Group on Environmental Accounting (2002): 5-9, Table 5.3.

compared to a 'standard' or less environmentally beneficial alternative, if there is one, or the estimated additional cost of incorporating the environmentally beneficial feature. Only the extra cost expenditure is included."

- C. *The net cost criterion.* "Only expenditure undertaken for environmental protection purposes which leads to a net increase in cost (that is where spending exceeds any savings or income arising before the net cost was actually incurred) is included. When expenditure is recorded, this criterion only applies to operating expenditure."
- D. *The compliance criterion.* "Expenditures undertaken with the main objective of protecting the environment but specifically in order to comply with environmental protection legislation, conventions or voluntary agreements. This can be further sub-divided to show those activities and transactions undertaken in order to comply with legislation only. A variant of A."

### CEPA

The Classification of Environmental Protection Activities and Expenditure (CEPA) is a "generic, multipurpose, functional classification for environmental protection . . . used for classifying activities but also products, actual outlays (expenditure) and other transactions" (Eurostat 2001). It was prepared jointly by Eurostat and the UNECE in 1994 and was revised in 2000 as CEPA 2000. In June 2001 it was accepted as a member of the UN Family of International Economic and Social Classifications and was recommended by the relevant UN expert group for approval as an international standard. The CEPA is fully integrated into the Eurostat SERIEE process (and, by extension, into the SEEA) and is consistent with the questionnaire that the OECD sends out jointly with Eurostat.

The first level of CEPA classification is as follows:

1. Protection of ambient air and climate

2. Wastewater management
3. Waste management
4. Protection of soil and groundwater
5. Noise and vibration abatement
6. Protection of biodiversity
7. Protection against radiation
8. Research and development
9. Other environmental protection activities.

Each class has from four to eight subcategories, some of which are further broken down. Classes 1 through 7 are referred to as environmental domains. Administration and management, as well as education, training, and information, are categorized as “other.” Classification is to be made according to “the main purpose taking into account the technical nature as well as the policy purpose of an action or activity.”

Eurostat notes that the CEPA specifically does not cover prevention of natural hazards or resource management but also that the London Group, which oversees SEEA, “requested the development of an additional classification for natural resource management complementing the CEPA.” It further states that “separate classifications, e.g., resource management should be set up which, together with the CEPA, would be part of a family of environmental classifications.”

### **COFOG**

The Classification of the Functions of Government (COFOG) is part of the United Nations family of international classifications. It is used “to classify the purpose of transactions such as outlays on final consumption expenditure, intermediate consumption, gross capital formation and capital and current transfers, by general government.”<sup>17</sup>

Division 05 deals with expenditures aimed at environmental protection, which is divided into the following groups (some of which have two or more subgroups):

- 05.1 Waste management
- 05.2 Wastewater management
- 05.3 Pollution abatement
- 05.4 Protection of biodiversity and landscape
- 05.5 R&D environmental protection
- 05.6 Other environmental protection areas

These groups are similar to those provided in the draft CEPA 2000 classification, although the latter has codes for additional activities that might be captured under 05.6 in the COFOG system. Eurostat notes that the 1999 revision of COFOG “follows CEPA principles” (Eurostat 2001).

### **Country classification systems**

A number of countries have developed their own definitions and classification systems for environmental expenditures. Usually, these are based on one or more international systems, adapted for domestic use.

In the United Kingdom, for example, environmental expenditures are defined as “capital and operating expenditure incurred by government, industry, households and other organizations, which can be clearly identified and explicitly attributed to directly improving and maintaining the quality of the environment.”<sup>18</sup> For domestic purposes, the government classifies its environmental expenditures by “module,” “medium,” and “actor.” For the first two, the classification is similar to that of the PAC framework. Actors are government, enterprises, and households, plus an additional category, nongovernmental organizations (NGOs). Media refers to waste, air,

water, noise, land, and “other.” “Modules” are somewhat like those in the CEPA classifications but are not specific to a particular medium. They are:

- Pollution abatement
- Environmental conservation
- Research and development
- Education and training
- General administration
- Profitable waste recycling
- Management of natural resources
- Improvement of amenities.

The U.K. system is apparently aimed at capturing both private and public sector activities. Some of these might not be relevant to the public sector, while some important public sector activities are perhaps too aggregated to be used as a model for a system focusing on that sector

## WORLD BANK

As noted in the review of World Bank PEERs in Chapter 3, the various PEERs have used different definitions and classification systems for environmental expenditure:

- Three of the PEERs examined (Kenya, Malawi, and the Philippines) did not provide an explicit definition but included all the expenditures of a particular department or ministry.
- Two (Korea and Thailand) did not provide an explicit definition, but the categories used constituted an implicit definition.
- One (Ukraine) primarily used the OECD PAC definition.
- Two (Bangladesh and Uttar Pradesh) used the definition suggested in Brandon and Ramankutty (1993).

- Two (Indonesia and Mongolia) used the core/mitigating/incidental categorization, although they covered only core expenditures.

The two main explicit definitions of environmental expenditure in World Bank PEERs are thus those used in the reports for Bangladesh and Uttar Pradesh and for Indonesia and Mongolia.

### *The PEERs definitions*

**Bangladesh and Uttar Pradesh PEERs.** The definition used in the Bangladesh and Uttar Pradesh PEERs is based on the definition of environmental projects found in Brandon and Ramankutty (1993) and reproduced in Appendix A of this report. It actually consists of two explicit lists of projects and project components that may or may not be counted. In other words, if an actual project is either on the list of disallowed projects or cannot be matched with one of the projects on the list of allowed projects, it cannot be included in the review’s database of environmental expenditures.

Whereas the list of explicitly included projects is comprehensive, the list of explicitly excluded projects merely clarifies whether certain borderline projects should be excluded. Examples of projects explicitly excluded are:

- Water supply and hydropower (because such projects often have adverse effects on the environment)
- Disaster relief and reconstruction (because they mitigate the effect of nature on people, rather than the other way around)
- Human resettlement (except for biodiversity reasons).

The use of the word “project” seems to imply that only investment (capital) expenditures should be included and that general expenditures, such as the overhead of the environment ministry, should be excluded. In practice, while not explicitly excluding recurrent expenditures, Annex A of the Bangladesh PEER (“Database of GOB Environmental Expenditures”) refers only to “capital expenditures” in the database.

Whereas the Bangladesh PEER bases its definition only on these lists of included and excluded projects, the later Uttar Pradesh PEER (or at least its terms of reference) provides a more general definition that is then backed up by the lists. The general definition (core environmental expenditures) used in the Uttar Pradesh terms of reference is as follows:

*expenditure on activities that pertain solely or primarily to environmental management of a particular sector . . . The primary purpose of these core environmental expenditures is either to provide environmental public goods or to address adverse environmental impacts.*<sup>19</sup>

In contrast to the silence of the Bangladesh PEER on the issue of recurrent expenditures, the Uttar Pradesh terms of reference note that environmental expenditures consist of both “operating or routine and development or capital expenditures.” The terms of reference then go on to provide some specific examples of such expenditures:

*Operating expenditures include: (a) routine expenditures by agencies that exist solely for environmental management, (b) routine expenditures by environmental units in line agencies;*

*(c) routine expenditures on conservation, protection, and rehabilitation units in natural resource management agencies . . . Examples of “routine” expenditures by environmental agencies . . . and environmental units in line agencies include monitoring and enforcing environmental standards; and institutional strengthening and capacity building of staff responsible for environmental activities.*

and

*Developmental expenditures include expenditures on projects and programs that are totally or primarily for environmental management. . . . Examples of “developmental” expenditures in State Departments/agencies include budgets for national parks and protection of forests; social forestry budgets; expenditures on reforestation, sewerage and sanitation projects; government-sponsored industrial pollution control programs, etc.*

The section providing examples of environmental development expenditures ends, “also see the attached terms of reference.”

The main differences between the approaches in the Bangladesh and Uttar Pradesh PEERs seem to be that:

- The Bangladesh PEER apparently uses the list of allowed projects as a screen, while the Uttar Pradesh terms of reference use it only as examples to amplify a more general definition. In other words, the Uttar Pradesh terms of reference do not necessarily exclude projects that are not on the list

of allowed projects, as long as they conform to the more general definition and are not on the list of specifically excluded projects.

- The Uttar Pradesh terms of reference clearly allow routine and recurrent expenditures, whereas the Bangladesh PEER implicitly seems to reject such expenditures.

***The Indonesia and Mongolia PEERs.*** The Indonesia PEER starts with a classification scheme of environmental expenditure based on the general aim and intention of the expenditure:

- “Core” expenditures are discrete budget allocations whose sole or at least primary purpose is either to provide environmental public goods or to address adverse environmental impacts (i.e., negative externalities).
- “Mitigating” expenditures are those aimed at preventing or mitigating the negative environmental externalities of nonenvironmental development projects that potentially deplete natural resources or generate pollution.
- “Incidental” expenditures are those that supply environmental benefits despite being undertaken primarily for nonenvironmental reasons.

In a sense, each class is a general definition that is amplified with examples. Since the Indonesia PEER only looks at core expenditures, however, most of its examples are for that class. Such expenditures include:

- Routine expenditures by agencies that exist solely for environmental management
- Routine expenditures by environmental units in line agencies

- Routine expenditures on conservation, protection, and rehabilitation units in natural resource management agencies (but not units that primarily support resource production)
- Development expenditures on projects and programs that are totally or primarily for environmental management.

Examples of core environmental expenditures by core environmental agencies and environmental units in line agencies include:

- Monitoring, analyzing, and disseminating information on environmental quality and pollution sources
- Setting environmental standards
- Enforcing environmental standards
- Institutional strengthening and capacity building of staff.

Examples of core environmental expenditures by natural resource management agencies include:

- Budgets for national parks and protection of forests
- Budgets for “integrated conservation-development” projects and social forestry projects
- Expenditures on reforestation.

Examples of other core environmental expenditures include:

- Government-sponsored industrial pollution control programs
- Sewerage and sanitation projects.

As can be seen, the Indonesia text is basically the same as in the examples provided in the Uttar Pradesh terms of reference. (Given the chronology, it would appear that the Uttar

Pradesh terms of reference consciously used the language from the Indonesia PEER.) The main difference between the two seems to be that the definition of core environmental expenditures used in the Uttar Pradesh report could allow what the Indonesia definition terms “mitigating” expenditures. This is because the list in Brandon and Ramankutty (1993) explicitly mentions “industry and energy projects: components addressing all forms of industrial pollution abatement . . .”

***The “Core/Mitigating/Incidental” Typology.***

Arguably, mitigating expenditures, which presumably are meant to be distinguished from classic PAC projects, could be considered a subset of core expenditures, since the definition for “core” could also be used to describe them.<sup>20</sup> If the purpose of the distinction is to determine whether the government is involved in things that should be left to the private sector, it is important to remember that some activities under the core category could also be carried out by the private sector—for example, waste management and parks administration. Admittedly, there may be an important distinction between public environmental services that may be contracted out as a “natural monopoly” and those that private companies perform to mitigate the negative environmental effects of their own activities.

There may also be an important distinction between activities undertaken by the private sector in response to regulations, and activities that involve making and enforcing such regulations. The core/mitigating/incidental framework does not explicitly address this, since it could define as “mitigating” expenditures that are not necessarily made in response to regulations. This distinction, however, could easily be incorporated by taking a cue

from PAC methodology and stating that only expenditures made in response to regulations can be counted (i.e., defined as “mitigating” according to the Indonesia methodology). The others may not be counted as PAC, since the primary motivation for the investment cannot be known for certain in such cases, but they are regarded as “incidental” in the Indonesia methodology.

In a sense, core and mitigating expenditures can be considered as distinct from incidental expenditures in that for the first two types, helping the environment is a primary purpose rather than only incidental. But core can also be viewed as in opposition to mitigating and incidental if it is assumed that the latter two deal primarily with classic PAC expenditures that are usually undertaken by the private sector, while core activities are those that will almost always be carried out by the government.

The mitigating category is potentially problematic; even regulation could be defined as mitigating, since it too is designed to “prevent or mitigate the negative environmental externalities of non-environmental development projects that potentially deplete natural resources or generate pollution.” The main distinction, then, seems to be between direct mitigating actions and those actions designed to make other parties take direct mitigating actions.

Finally, and despite its name, the core category covers a wide variety of activities that arguably are as different from each other as any of them are from mitigation, such as regulation and waste treatment. Waste treatment, for example, can be viewed as closer to mitigation than to regulation.

In conclusion, the core/mitigating/incidental typology is potentially useful but may need some refining. Moreover, there may be more useful distinctions to be made between types of environmental expenditure.

***World Bank thematic and sector codes***

World Bank projects are codified according to sectors and themes. Each project must have at least one sector and one theme code and may have up to five of each. The World Bank considers the environment to be a “theme” that cuts across different sectors. (Examples of other themes are rule of law; social development, gender, and inclusion; and rural development.)

Within the environmental theme, projects are classified according to the aim of the project (the numbers are project codes):

- 80. Biodiversity
- 81. Climate change
- 82. Environmental policies and institutions
- 83. Land management
- 84. Pollution management and environmental health
- 85. Water resources management
- 86. Other environmental and natural resource management.

These subcategories are similar to those in the draft CEPA 2000. Some subjects are covered explicitly by the World Bank system but are missing in the CEPA, and vice versa, and some are aggregated differently.

To guide the task team leader in assigning the project to the proper subcategory, the code guidelines provide a list of examples of project activities under each subcategory.

**TOWARD A DEFINITION AND TYPOLOGY OF ENVIRONMENTAL EXPENDITURE FOR PEERs**

It is probably useful to differentiate between definition and typology. We understand typology to mean a system for classifying or categorizing environmental expenditures.

As shown in several PEERs, it is possible to arrive at a definition implicitly, on the basis of the categories of expenditures that are used. This may, however, only work for some sets of categories—for example, those referring to environmental media or to fairly specific types of action such as waste management. Other sets of categories could be used with various definitions of environmental expenditure or even with nonenvironmental expenditures. Such systems include economic categories (capital, recurrent), functional categories (regulation, policy development), and agency categories (ministry of environment, ministry of energy).

This report first addresses the definition and then typology or categories.

***Definition***

The authors’ recommended approach for defining environmental expenditure is to start with a fairly general definition and, as in the Bangladesh and Uttar Pradesh PEERs, supplement it with nonexhaustive lists of examples of expenditures that are specifically included or specifically excluded.

The authors’ survey of various accounting systems indicates that most organizations have not used a comprehensive definition of environmental expenditure. This is generally

because there are a number of areas (notably the “environmental” aspects of natural resource management) on which there is no consensus and that are not yet very well defined. Instead, organizations have tended to focus on one or several reasonably well-defined subcategories of environmental expenditure, depending on their needs.

The likelihood of widespread use of a World Bank definition outside the World Bank may increase if it is harmonized with the definitions used by other international organizations. In view of the international acceptance and well-defined boundaries of the OECD/Eurostat definition of environmental protection activities, which has evolved from the OECD’s established PAC methodology, the World Bank could consider taking it as a basis for a more general definition of environmental expenditure.

A number of activities, notably natural resource management, are specifically excluded from the OECD/Eurostat definition of environmental protection activities. Given the likely prevalence of natural resource management expenditures in many World Bank client countries, a reference to them should probably be added to the World Bank definition.

The OECD, in conjunction with Eurostat, may consider further expanding its work on environmental expenditure to take selected aspects of natural resource management and minimization of natural disasters into account. In general, the authors recommend that the World Bank follow or contribute to this process. (Although nature protection has been included in the definition, expansion to other aspects is not yet decided and would be part of longer-term work, closely linked to data

needs for country environmental performance reviews.) Besides the greater international acceptance that may come from basing the World Bank’s definition on an existing standard and a fairly well-defined data set, using the OECD definition as a base could make it easier to refine the definition in light of future OECD/Eurostat revisions.

The following is a proposed general definition for public environmental expenditure:

*Expenditures by public institutions for purposeful activities aimed directly at the prevention, reduction, and elimination of pollution or any other degradation of the environment resulting from human activity, as well as natural resource management activities not aimed at resource exploitation or production.*

The main differences between this and the current OECD/Eurostat definition of “environmental protection” activities are the following:

- “Public institutions” are specifically mentioned.
- The potentially broader term “human activity” is used instead of the OECD’s phrase “production processes or from the use of goods and services.” This change responds to comments from within the World Bank that the OECD formulation might not take into account all relevant impacts on the environment.
- Reference is made to selected natural resource management activities.

Acceptable projects under natural resource management may be the most difficult to define. The development of examples of such

expenditures for the lists of specifically included and excluded projects will be particularly important with respect to this item.

Other potentially important expenditures in the context of World Bank client countries will be activities related to nature protection and biodiversity. "Prevention . . . of degradation of the environment" should be general enough to include such activities, which are specifically covered by the OECD's definition of environmental protection activities. To make this coverage more explicit, examples could be noted in the suggested list of specifically included projects. The same observations can be made for relevant educational and awareness-raising programs.

As a starting point for preparing the lists of examples of projects that are specifically included in or excluded from the general definition, it may be possible to combine those used in the Bangladesh and Uttar Pradesh PEERs with the list of core expenditures in the Indonesia PEER. These lists do not appear to be inconsistent. The preparation of such lists, as well as a further elaboration of the general definition, could be the subject of a follow-up project.

### *Classification system*

Ideally, a classification system for environmental expenditures should meet the following requirements:

- It should be relevant to the types of expenditure likely to be found in World Bank client countries but flexible enough to adapt to differences in expenditure patterns among these countries.

- It should be flexible enough to adapt to differences in data presentation and availability among countries.
- It should be able to capture the differences that are most relevant for the analysis that is to be performed.

Based on a review of current international and Bank practice with classification systems and of the analytical needs of PEERs (discussed in Chapter 5), a draft classification system is proposed, as described in detail below. This approach is multidimensional and modular. In theory, it should be possible to classify each environmental expense under each dimension of the system. The expenditure total under each dimension will be the same.

The modular approach is intended to allow flexibility in the face of differing availability and formats of data among countries. That is, the number and selection of dimensions to be used, as well as the degree of detail within each dimension, could be adjusted in view of the needs and circumstances of the PEER in question. To facilitate comparability, it is recommended that all PEERs use at least a minimum set of the most important dimensions. As a guide to the selection of dimensions, the dimensions are presented below in order of importance, based on the authors' understanding of the needs of PEERs.

Data availability and format will influence the degree to which the different dimensions can be integrated or joined up (e.g., the degree to which primary categories in one dimension can serve as subcategories in another dimension). The needs of the PEER should determine which parts of which dimensions are linked.

In theory, a multidimensional computer program could be designed to allow each line

item (if expenditure information is presented this way by the government) to be classified under each dimension as it is entered into a database. This could allow a large number of very specific aggregations to be made—for example, a total for all nonwage recurrent expenditures made by noncore line agencies aimed at waste management in geographic region X. It is unlikely, however, that such detailed input information will be available in most cases. Moreover, observations of expenditure magnitudes and trends will not always need to be that detailed in order to be meaningful.

**Boundaries.** It will be important to set the boundaries of each dimension early in the process, on the basis of such considerations as local data limitations. For example, the analysis could be limited to those expenditures made by core environmental agencies under the “government level and agency” dimension or to capital expenditures under the “economic” dimension. The limits set for each dimension of the classification system effectively determine the scope of the definition of environmental expenditure used by the PEER. Any aggregation of standardized categories within dimensions should be clearly noted. (Given a definition of environmental expenditure set by the boundaries of the various dimensions being used, the totals for the dimensions should be equal, as noted above.)

**Aggregated Expenditure Data.** Each unit of environmental expenditure should be classifiable under one category within each dimension. In some cases, however, expenditure data will be too aggregated to be classified under a specific category; then it should be placed in a “general/other” category. This

category is conceptually different from “other” in that it could contain elements which normally could be classified under one or more of the specific categories. (To avoid double counting, a particular expenditure should not appear under both a specific category and “general/other.”)

Another way of approaching the aggregation problem would be to provide a total for each dimension, noting the subcategories for each important category listed within the dimension. Some nonspecified expenditures will appear in the total for the dimension but not in any subcategories, even though some of that nonspecified aggregated expenditure actually was for one of the specified subcategories. Theoretically, an expenditure may appear under only one subcategory, but in practice, this rule may not be feasible, and relaxing it may actually provide more information. The more important point is that the totals for each dimension are identical.

**Tracking Foreign Aid.** A potentially important link to make across many sectors will be foreign aid. In the sample breakdowns presented in Table 4, foreign aid is shown only within the financial dimension, although it could also be a subcategory under other dimensions, notably the environmental domain and functional ones. To assist in tracking foreign aid, OECD/DAC CRS codes have been supplied for some of the equivalent categories in these two dimensions in Table 4. It should be noted, however, that there is not a very good correspondence between the arguably more advanced CEPA codes, which are more consistently based on environmental domains, and the CRS codes, which mix domains and functions. The authors recommend CEPA as the basis for the “environmen-

tal domain” dimension. In practice, this means that use of the OECD/DAC CRS database, while also recommended, will require a certain amount of judgment by the review team.

### ***Government level and agency dimension***

Some PEERs practitioners have suggested that a distinction be made between expenditures by “core” environmental agencies and other line ministries or agencies. This can help in examining the degree of environmental mainstreaming within the government.

A number of subcategories could be created that correspond to particular agencies within each main category. These are likely to be country-specific, although several general categories could be developed.

Another important distinction that could be made within this dimension is the level of government at which the expenditure is made (central, regional, or local). In the example, however, it is assumed that only expenditures by central government agencies will be included.

Based on the general practice with respect to PEERs and PERs to date, it is assumed that most PEERs will not look at all regional and local expenditures in a comprehensive manner but will perhaps review expenditures in one or a few regions in order to derive a picture that may be extrapolated for an overall estimation of environmental expenditures at lower government levels. In such cases it is recommended that a separate exercise be performed for each region or local government level examined. Such a regional or local PEER may be less thorough than the review

performed for the national level; for example, it might contain fewer dimensions.

Transfers between agencies should be counted only once, under either the account of the agency making the transfer (using the “financing principle,” in PAC jargon) or the account of the agency receiving the transfer and making the expenditure (the “abater principle”). Given the difficulties that OECD governments have had in carrying out accounting according to the financing principle, it is recommended that expenditures under the agency dimension be recorded on the account of the agency receiving the transfer and making the expenditure.

### ***Economic dimension***

It is important to distinguish between one-off capital expenditures that augment the capital base that the government has to work with and recurrent expenses. Types of recurrent expenditures should also be distinguished—for example, wages (or total emoluments, which can include additional nonwage payments to staff) versus nonwage expenditures (mostly operations and maintenance). This is important because a common problem can be overstaffing, with wages squeezing out operations and maintenance expenditures over time.

It is also important to determine whether the budget for operations and maintenance is sufficient to cover the needs of capital investments. As noted in Chapter 2, an analysis of some individual projects should also be performed, and this should include a review of the adequacy of project operations and maintenance expenditures.

**Table 4. Draft examples of accounts for the various dimensions of environmental expenditure**

<b>Agency dimension</b>
<i>Total public environmental expenditures</i>
By core environmental agencies
Of which, by the ministry of environment (or by particular units)
Of which, by agency X
Of which, by agency Y
By noncore environmental agencies
Of which, by “agency Z” (e.g., the environmental unit of the ministry of industry)
Transferred to levels of government not covered
<b>Economic dimension</b>
<i>Total public environmental expenditures</i>
Capital expenditures
Recurrent expenditures
Of which, wages and other personal emoluments
Of which, operations and maintenance
Transferred to levels of government not covered
<b>Functional dimension</b>
<i>Total public environmental expenditures</i>
For policymaking, including the development of regulations and standards
Of which, for studies reviewing policies or the environmental situation
For regulation, monitoring, and enforcement
For technical R&D related to environmental protection or natural resource management (CRS 41082)
Of which, contracted to the private sector
For environmental education (external) and information dissemination (CRS 41081)
For internal education/capacity building/staff training (CRS 41081, 41010)
For provision of environmental services (to be defined, but likely to include only waste and wastewater management)
Of which, contracted to the private sector
For physical infrastructure to mitigate harmful environmental effects of nonenvironmental activities or for impact studies relating to the need for such investments (i.e., “classic” PAC; designed to capture the mitigating activities in the Indonesia and Mongolia PEERs)
Of which, made by state-owned companies operating in the private sector
Of which, provided as a grant to private entities
Transferred to levels of government not covered.
<b>Environmental domain dimension</b>
<i>Total public environmental expenditures</i>
Protection of ambient air and climate (CEPA 1)
Wastewater management (CEPA 2)
Waste management (CEPA 3)
Protection of soil and groundwater (CEPA 4; CRS 41020)
Protection of biodiversity (CEPA 5; CRS 41030)
Natural resource management (not included in the draft CEPA)
Transferred to levels of government not covered

**Table 4. Draft examples of accounts for the various dimensions of environmental expenditure** (continued)

<b>Regional dimension</b>
<i>Total public environmental expenditures</i>
Primarily for region A
For biodiversity
Primarily for region B
For biodiversity
<b>Financing dimension</b>
<i>Total public environmental expenditures</i>
Financed from the investment budget or similar budget that is not integrated with the central budget
Of which, from foreign sources
Of which, earmarked
Financed from (or passed through) the central budget (or the regional budget, in the case of a regional PEER)
Of which, earmarked from domestic government sources
Of which, earmarked from donors
From donors and not passed through the central budget (but not including special funds)
Earmarked from special taxes or fees (but not including special funds) and not passed through the central budget
From an off-budget special fund
Of which, from donors
Of which, from a special (environmental) tax or fee
Financed from a transfer from another level of government
<b>Program/policy issue dimension</b>
<i>Total public environmental expenditures</i>
For program/policy issue X
Of which, recurrent
Of which, for wages and other personal emoluments
For program/policy issue Y
For program/policy issue Z

Note: All the “total” lines for the dimensions should be the same. To facilitate tracking foreign aid, OECD/DAC CRS codes have been supplied for some of the equivalent categories in the functional dimension and the environmental domain dimension.

### **Functional dimension**

The proposed functional dimension is an attempt to account for the main approaches that government can take in dealing with an environmental problem. It attempts to incorporate the distinction in the Indonesian PEER between core and mitigating expenditures while disaggregating some of the rather heterogeneous “core” activities. It also incorporates the OECD/Eurostat notion of environmental services such as waste and wastewater

management, which are increasingly contracted to the private sector.

### **Environmental domain dimension**

The environmental domain dimension concerns the specific environmental medium that the expenditure is aimed at protecting. The subcategories are based on categories in the draft CEPA, although not all CEPA categories are likely to be relevant. A natural resource management category has been added but

would not be used in cases where it was decided not to include such expenditures in the review. Cross-references to OECD/DAC CRS codes are provided in the Table 4 listing when the equivalence is fairly clear, although the two systems are not extremely compatible and judgment would have to be used when tracking projects via the CRS database.

In practice, it may be possible to use the environmental domain dimension as a proxy for the program/policy issue dimension, discussed below.

### ***Regional dimension***

It may be possible to classify some central government expenditures by region—for example, if most of the benefits of a particular project are reasonably likely to accrue to one region. (In the case of projects that cover two or more regions, a division of expenditure between them could be estimated.) Such a classification should also include transfers to local and regional governments. Regional classification can be an important aid for developing benchmarks for comparing expenditures on particular issues. For example, a comparison of biodiversity expenditures per protected hectare in region A and region B (as outlined in Table 4) might reveal that region A spends twice as much per hectare, signaling an anomaly that could be further investigated. The subcategories used will depend on the issues identified as important for the review.

### ***Financing dimension***

The proposed financing dimension is designed to examine sources of funds, including foreign and off-budget sources, and how much is earmarked.

Many developing country governments divide their budgets into an ordinary, or recurrent, budget and an investment budget. In practice, the investment budget is often wholly financed by donors. In theory, it comprises capital expenditures only, although actually this is not always the case. In many instances the split between the two budget categories serves little real purpose and acts as a false dichotomy. Yet because there may be a great difference in data quality between the two budgets, it may be decided to limit the review to expenditures from one or the other. It should be kept in mind that distinctions between capital and current expenditures should be captured in the economic dimension, as the investment budget often contains both.

### ***Program/policy issue dimension***

An important role of the PEER will be to examine expenditures according to policy priorities. A “program” is basically a group of expenditures that are aimed at the same thing. Ideally, a program will correspond to a policy priority.

Since few governments actually report their expenditures by program, in most cases the review team would have to create program categories, guided by whatever document is taken as a basis for environmental policy priorities.

It may be possible to use the environmental domain dimension as a proxy for the program/policy issue dimension. It may also be desirable for the World Bank to create a standardized list of policy issues (a policy dimension) to replace the environmental domain and program/policy issue dimensions presented here.

The use of several economic subcategories is suggested as a way of analyzing the sustainability of particular programs (e.g., to see that there is enough nonwage operational

expense to maintain capital investments and that the wage bill is not crowding out other recurrent expenses).





## Chapter 5

# Main Elements of a Guidance Note

**T**his chapter discusses the recommended procedure for conducting a PEER and some of the important methodological issues and problems likely to be encountered. It is meant as the forerunner of a more detailed guidance note, which could be developed as part of a future project.

### CREATING AN EXPENDITURE DATABASE

In order to evaluate expenditures, the review team will need to create an appropriate database. It probably would be difficult to come up with a model database for PEERs because of the large variations among countries in the availability, quality, and format of expenditure data. To a great extent, the sophistication of the database and the type of analysis that the team is able to perform will be limited by these factors. (Suggested expenditure analyses are discussed below.) The first step, therefore, is to survey the data that are available in order to determine what types of analysis can be carried out and the most appropriate way of collating the data to aid the analysis. It is suggested that the multidimensional categorization system presented in Chapter 4 be used to guide this process. Depending on the information available, a

decision may be made to eliminate certain categories within particular dimensions, that is, to narrow the scope of expenditure types considered.

Among the main problems with data encountered by PEER practitioners are a high level of aggregation and shortcomings in quality and consistency, including often opaque records and sloppy classification between capital and recurrent expenditures. Compilation of a database often involves a time-consuming process of poring over lists of expenditures from various ministries.

An important step will be to understand where environmental expenditures are made. At the central government level, spending units include core environmental agencies such as the ministry of environment (if one exists), as well as nonenvironmental agencies such as the ministry of industry or the ministry of agriculture.

Examination of line-agency environmental expenditures can be important for determining the degree of environmental mainstreaming within the government. A number of PEER practitioners have noted that a major problem

is tracking down expenditures outside the core agencies. Close cooperation with the ministry of finance could be important in this regard.

If it is found that that sufficient expenditure information outside the core central government environmental agencies is difficult to come by or is of inadequate quality, the review team, as part of its scoping phase, may wish to examine the extent to which expenditures by a core environmental agency such as the ministry of environment could serve as a proxy for public environmental expenditures. A number of PEERs have used this approach.

An important future area of work for a guidance note will be to provide practical advice, based on the experience of PEER practitioners, on how to locate relevant expenditure information.

Information-gathering problems increase when expenditures by regions are considered. The degree to which public expenditures by regional and local governments are taken into account will depend on the share of such expenditures in overall public environmental expenditures. If the scoping phase reveals that expenditures by regional or local governments are significant, the review team ideally should perform one or more regional case studies (regional PEERs). Depending on resources, the regional PEERs might be performed in less detail—for example, using fewer dimensions of the categorization system or fewer distinct items within dimensions.

## ALLOCATION

Among the main goals of the PEER will be to compare expenditures with policy priorities. An important initial step is to determine, in

consultation with the government, what should be considered the policy priorities. These may be contained, for example, in an environmental policy document produced by the government, by the government in partnership with the World Bank, or in fulfillment of Agenda 21 or the country's Millennium Development Goals.

Ideally, it should not be within the scope of a PEER to judge policy priorities, although this could be done as part of the wider CEA process. In cases where the review team considers the government's policy priorities inappropriate, (so that comparison of spending with such priorities appears to serve little purpose), it may be necessary to sit down with the government to determine a more appropriate set of priorities, based as much as possible on the country's actual environmental problems. This should ideally take place under the "policy analysis" building block of the CEA process.

### *Costing of policy priorities and examination of the spending envelope*

There are a number of ways of comparing actual expenditures with policy priorities. One is to estimate the costs of fulfilling the policy priorities and of translating these costs into a set of annual budgets for comparison with actual expenditures. This exercise is somewhat analogous to the first of the three levels of analysis suggested by Pradhan (1996) and by others for general PERs; that is, analysis of the aggregate levels of spending and deficit (see Chapter 2). Although a number of PEER and PER practitioners have mentioned this as a desirable exercise, very few World Bank PEERs have actually done it, usually because of time and resource constraints.

If a significant gap is found between the cost of reasonable policy goals and the actual amount of money being made available for environmental expenditures (the “environmental envelope”), the team could suggest ways in which the government could increase the envelope. It should be noted that the size of the envelope may not be known until the team has collected information on actual expenditures and that the monies available for environment are likely to be spread over a number of environmental and nonenvironmental departments and agencies.

Since it probably will not be within the competence of the review team to suggest cuts in programs in other sectors, the envelope-adjusting exercise should perhaps be limited to ways of raising more revenue from the environmental and natural resources sector (and possibly other sectors). Such efforts should concentrate on putting into effect the polluter-pays and user-pays principles through, for example, appropriate charges for the use of various natural resources; appropriate taxes on inputs such as fuel to account for negative environmental externalities; and the elimination of potentially environmentally damaging subsidies, notably on fuel and on agricultural fertilizers and pesticides. To promote good fiscal practices, the review team should caution the government against specifically earmarking such new revenue sources for the environment.

Suggesting cuts in inappropriate projects within the environmental envelope is another way to free funds for priority environmental projects. Such cuts, which do not increase the overall envelope for the environment, are dealt with in the discussion of allocative efficiency, below. The OECD/EAP Task Force

environmental financing strategy (EFS) methodology could be a useful framework for conducting scenario analyses for increasing available funds as well as reducing expenditure needs at the program level.

### *Allocation by program within the environmental envelope*

Using the expenditure data collected, the review team should attempt to compare actual expenditures with policy priorities. Ideally, expenditures should be arranged according to programs that can be matched with priorities with relative ease.<sup>21</sup> Since most governments do not present expenditures in terms of programs, the categories may have to be created by the review team. PEER practitioners have sometimes had to do this by carefully going through line-item expenditure information while creating a database. As described in Chapter 2, the database could create a program dimension based on policy priorities, or the environmental media dimension, perhaps in combination with the functional dimension, may be able to provide a reasonable proxy.

At a very basic level, it may be useful to list policy priorities and actual expenditure programs in a table. This can help in determining which policy issues are in fact covered by expenditures.

## MAGNITUDE AND TRENDS

Comparing the amount of expenditure with policy priorities helps show in a very rough way the coverage of different priorities. But amounts alone do not convey much about the degree of coverage, which is less dependent on *how much* is spent than on *how* it is spent. That is, the best way of addressing a particular issue may be relatively inexpensive compared

with other ways. Countries differ in their financing structures and their reliance on public transfers. Too much public funding (even on infrastructure) can be as inefficient as too little.

The surest way to determine whether a particular issue is being adequately covered is to perform a detailed analysis of the expenditure programs aimed at that issue. The environmental financing strategies carried out by the OECD/EAP Task Force could provide guidance. Because of cost and time considerations, it is not feasible to carry out such an analysis for all programs. In practice, only a few expenditure programs should be examined in detail.

### *International comparisons of magnitude*

A rough way of determining whether a particular issue is adequately covered is to compare the magnitude of expenditures on it with that in other countries or with best practice benchmarks. International comparisons, of course, should be treated with care. The OECD, in the context of comparisons between even its relatively homogeneous member countries, advises that international comparisons be limited to orders of magnitude. At best, therefore, such comparisons can be used to signal potential problems that would then have to be examined in more detail.

In order to compare expenditures across countries, meaningful ratios must be developed. The ones most commonly used by World Bank PEERs and by OECD EPRs include the ratios of expenditures to GDP per capita and to other government expenditures (total, or for other social programs, such as

health and education). In addition, expenditures for particular activities could be compared using ratios based on factors more specific (and thus, it would be hoped, more relevant) to that activity. For example,

- Wilderness protection expenditures per hectare of protected land
- Air pollution regulation and enforcement expenditures in relation to energy input in industry
- Wastewater treatment expenditures per liter of water input or wastewater output.

These are only examples. The degree to which these ratios are actually meaningful will depend on the degree to which there is an observed statistical connection between the two parts of the ratio. This process will require the collection and review of data followed by regression analysis, which could be an important area for further study.

An immediate task could be simply to broaden the list of examples above for use as a preliminary set of suggested ratios for the first edition of the guidelines. As more PEERs are performed, and as more information becomes available, the validity of these ratios could be tested and more refined ones developed, along with benchmarks to produce a revised set of guidelines.

### *Regional comparisons within a country*

Comparison of expenditures between regions within a country can provide important information about the comprehensiveness and equity of environmental protection. Moreover, they may be more accurate than comparisons between countries because many differences—in relative prices, state of the infra-

structure, the roles of the private and public sectors, and so on—are less pronounced within a country. (Only the Indonesia PEER made comparisons across provinces. It also used regression analysis to test the validity of the ratios employed.)

### *Trends*

Comparisons of magnitudes and ratios over time, including time-series comparisons with other regions or countries, can be particularly meaningful. One reason is that data collected over time for the same country or geographic region may be even more comparable than data for different regions in the same country. Moreover, time-series comparisons enable the analyst to determine whether the government is being consistent in its pursuit of policy goals. A change over time in a ratio (for example, in the ratio of expenditure on regulation of air pollution to industry energy consumption), in the absence of a stated change in policy, could signal that the government is falling behind in its coverage of the issue. Significant changes in such ratios could flag areas that should be followed up by in-depth analysis.

Comparison of ratios internationally or with international best practice benchmarks could reveal even more information. For example, although the ratio of expenditures to GDP in a particular country on a particular issue may have risen, a time-series comparison of this ratio with international trends may reveal that the country is falling significantly behind compared with the trend in best practice countries.

While time-series can be useful, PEER practitioners noted several problems with their

collection and use. The first is data availability; it is often very difficult to obtain data for one year, let alone for several. Furthermore, definitions and data collection methods may not have been consistent from one year to another, posing comparability problems.

A different sort of problem relates to the significance of trends. It has been pointed out that many World Bank client countries (especially those without a medium-term expenditure framework) are likely to exhibit shifts from year to year in particular expenditure programs as a result of a large number of nonpolicy factors, including, notably, the inadequacy of the budget process. One way to handle this problem may be to compare shifts in the environmental envelope (or in particular expenditure items) with shifts in the envelopes (or in particular expenditure items) for other sectors to determine whether environmental expenditures vary more than the average. (This too may be an area for further research.) Shifts in environmental expenditures could then be corrected to factor out those changes that could reasonably be attributed to unintended general vagaries in the budget process. But if these unintended shifts are relatively large compared with those in other countries, it could signal a weakness in budget management that could undermine even a relatively competent public environmental management team.

## EFFICIENCY AND QUALITY

The only way to be certain that a particular expenditure is adequately directed toward a particular policy goal is to look at what the money is being spent on. Assuming that it is being spent on an appropriate program, the next step is to look at whether the program is

being efficiently and effectively executed. So far, program-level analysis has played a very minor role in World Bank PEERs and PERs.

In general, because of the time and budget constraints of the PEER, program-level or project-level analysis will usually have to be limited to a small number of programs. The main selection criteria should be the significance (size) of the program in the overall environmental envelope, with priority going to programs in areas that orders of magnitude analysis and trends analysis have shown may be underfunded or overfunded.

The first thing to look at when examining a program or project is whether it is appropriate. This is done by determining whether there is a rationale for government involvement (e.g., market failure) and whether the instrument chosen to address the problem (direct provision, regulation, and so on) is the right one.

This evaluation will have to be based on the review team's knowledge of evolving best practice. One way to simplify the procedure could be to use a set of stylized facts. Pradhan (1996) suggests this approach for PERs in the areas of education, health, and transport infrastructure, and it may also work for the environment. For example, a number of studies have indicated that there is a rationale for the government to help address industrial pollution problems stemming from negative externalities that industry has no incentive to take into account on its own. Studies have also shown that government subsidization of pollution abatement and control expenditures by industry is an inappropriate instrument for addressing the problem. A set of similar stylized facts could be developed as an annex to the PEER guidelines on the basis of a

periodically updated review of best practices in environmental policy.

In practice, it may be possible for the PEER to analyze the appropriateness of a fairly large number of programs or projects in the environmental budget on the basis of stylized facts, while analysis of efficiency and effectiveness may be reserved for a smaller selection of projects. A list of potentially inappropriate projects could help indicate the amount of money that could be reallocated to priority programs.

Assuming that a project or program is appropriate, *efficiency* (as the term is used in this report) refers to whether it is well managed.<sup>22</sup> Analysis of efficiency should cover at least:

- Whether the funds are being managed so that they get where they are supposed to go (this could involve tracking inputs)
- Whether the project is producing results (in terms of appropriately chosen output indicators) at low cost.

The indicators for the second point ideally should have been chosen beforehand by the project designers in order to guide the project. In cases where indicators have not been selected or are inappropriate, the review team may wish to use others. An area for future research may be the development of a set of appropriate indicators for different types of common programs and projects in the environmental field. This could be included as an annex in the PEER guidelines and periodically updated to take into account evolving best practice.

Most PEERs and PERs have not looked at efficiency questions, mainly because it can

require significant effort, as well as data that often have not been available. In some cases proper project evaluation will require site visits. Again, the guiding principle should be to concentrate efforts on the most important (largest) budget items.

Related to efficiency is the notion of *effectiveness*—whether the project is achieving the desired outcomes. An example will help clarify the difference: an efficiency (output) measurement for a regulatory program might be the amount of factory waste being released into a river, while an effectiveness (outcome) measurement might be the quality of the river water. It may turn out that the outputs being measured have little bearing on the strategic outcomes that are desired; for example, most of the pollution in the river could be from the use of agricultural chemicals such as pesticides and fertilizers.

Almost no World Bank PERs and PEERs have addressed outcomes.<sup>23</sup> This is because, in practice, it is very difficult to isolate the different influences on outcomes. In a sense, the notion of effectiveness can be incorporated in the PEER through stylized facts in the appropriateness-measurement stage.

The OECD has developed a set of good practices in public environmental expenditure management that cover the evaluation of the performance of expenditure programs as well as that of the agencies managing them. These checklists, presented in Appendix B, evolved from earlier guidelines for evaluating special environmental funds in Central and Eastern Europe and the former Soviet Union. Some items in Checklist 3 may be especially relevant for examining institutional arrangements regarding funds management for various agencies or projects.

## OTHER ISSUES

The final elements to be considered in the PEER guidance note are foreign assistance to the environment and subsidies that could undermine positive actions for environmental improvement.

### *Foreign assistance*

In general, it is recommended that examination of donor-funded expenditures form a discrete part of the PEER process. Although it is important for many parts of the PEER to analyze government and donor-funded expenditures in an integrated manner in order to get the big picture, it is also important to segregate donor-funded expenditure for some portions of the analysis, to answer questions that are specific to aid or that could not be examined without such segregation.

### ***Coordination of Aid with Policy Priorities.***

The PEER should analyze the extent to which aid projects are coordinated with the government's policy priorities. Such an exercise could be an important indication of coordination among foreign donors. The analysis could be performed at the same time as the analogous step for domestically funded expenditures. The review should then go on to distinguish the coverage of the two types of funding source.

Examination of the proportion of environmental aid within total aid for the country could help determine the extent to which donors view the environment as a relative priority in the country. This proportion should be compared with the relative priority of the environment in the government's overall policy goals, to determine whether donors are allocating enough to environmental and

natural resource themes in their overall aid envelopes.

**Mainstreaming.** As was done in the Bangladesh report, the PEER could analyze the distribution of environment-related aid projects across economic sectors. Such an analysis, especially over time, could help determine the extent to which the environment has become mainstreamed in donor assistance.

**Substitution of Foreign Aid for Government**

**Funding.** Trends in donor funding within total environmental expenditures help show how the environmental envelope has changed with trends in environment-related aid. This can help determine to what extent donor-funded projects are seen as additional to financing by the government or are viewed as a substitute. Such an analysis could be part of a discussion of the government's use of aid and its environmental management, including the degree to which it views the environment as a priority in practice.

**Other Aid-Related Issues.** Important aspects of the aid–client country interface that may be explored should include, at a minimum:

- The contribution of environment-related aid in relation to total aid revenue
- The contribution of environment-related aid in relation to total domestic environmental expenditure.

Other issues relating to donor-financed environmental assistance that may warrant investigation include:

- The proportion of environment-related aid (and aid in general) that passes through the central budget

- The proportion of environment-related aid earmarked for specific projects or programs regardless of whether it passes through the central budget
- The proportion of environment-related aid with a designated purpose of technical assistance or capacity building
- The composition of environment-related aid (its allocation to specific sectors or environmental domains such as forestry, waste management, or water resource development).

Where aid flows are clearly documented in client country data sources, it should be possible to track magnitudes and trends for most of the areas noted above, using the multidimensional categories proposed in this paper. Where donor information is less clear, or where the review team wishes to compare in-country receipts with donor intentions, valuable information can be gleaned from the OECD/DAC Creditor Reporting System, which provides a reliable source of data on bilateral and multilateral aid commitments. Each transaction in the database includes a project title and a short and long project description. In most cases there is sufficient information to make a reasonably accurate assessment of the environmental significance of these flows and to generate a list of environment-related bilateral and multilateral donor ODA commitments to the recipient country under investigation for a given time period. The review team may then attempt to trace the flow of these ODA commitments through the budgetary process in the recipient country. This study need not be exhaustive; exploring just a small sample of environment-related aid transactions through the domestic environmental finance system could help inform the study about many of the issues noted above.

The discussion of the CRS database in Chapter 4 describes some of the manipulations and collations of data that may be performed using the CRS. Although there are significant methodological challenges associated with using the CRS data (including the tension between reporting commitments as opposed to actual disbursements, and the reliability of single-purpose code descriptors), generally speaking, the CRS database should provide a good resource for developing a more detailed account of the relationship between international aid and domestic environmental expenditure.

### ***Potentially environmentally damaging subsidies***

Expenditures aimed at environmental improvement can be undermined by other government policies. One of the most important such policies is subsidies for the production or consumption of potentially environmentally damaging activities or products. These subsidies increase the production or consumption of such goods or activities and therefore increase the potential damage to the environment. Of the reviewed PEERs, that for Bangladesh looked at the issue of environmentally damaging subsidies, but it only noted which sectors had “potential policy conflicts with environmental objectives” and did not attempt to measure such subsidies or their effects.

The definition of subsidy, let alone how to measure subsidies, is fraught with difficulty and is the subject of ongoing research.<sup>24</sup> A broad definition could include the failure of government to ensure that environmental damage in various activities is internalized—in other words, failure to tax or fine a good or activity to compensate for its negative environ-

mental externalities. A concept of subsidies that takes into account such “passive” policies would pose a number of practical difficulties for the review team, not least the problem of tracking down instances of failure to tax, which would entail looking for a negative. (A related concept that a PEER might look at is the adequacy of scarcity pricing for natural resources, as discussed below.)

“Active” subsidies are created by a specific government policy and can flow through several different channels:

- Direct payments
- Provision of in-kind services
- Tax preferences
- Trade preferences (for example, import barriers to more environmentally friendly foreign technologies or products)
- Regulatory mandates, such as a requirement to use certain products or technologies.

The last two do not involve government expenditures or tax benefits and so may be difficult to compare with environmental expenditures in the context of a PEER. Nevertheless, the PEER could note such policies that come to the attention of the review team. In examining consumption of products, it may be more useful to concentrate on direct payments and tax preferences. Provision of in-kind services (and, to some extent, tax preferences) could be most relevant for looking at potential undercharging for the exploitation or use of natural resources.

Measuring the cost of environmental damage can be extremely difficult and is the subject of much research. In principle, it may be possible to use stylized facts or rule-of-thumb calculations distilled from various studies (e.g., one dollar of subsidy to agricultural fertilizers results in x dollars of environmental damage).

It is relatively simpler to measure the size of the subsidy, though even this is often quite difficult in practice. In general, as noted by Fischer and Toman (1998), “the easiest environmentally harmful subsidies to identify are those that involve more or less conventional market goods and services, without too large a fixed infrastructure component, and which benefit a well-defined subset of consumers or producers.”

For simplicity, it is recommended that a PEER stick as much as possible to subsidies that can be directly taken from an expenditure line in the budget or calculated as tax forgone, comparing the total spent on subsidies that undermine the environment with expenditures designed to protect it. Given that calculations of environmental cost are likely to be greeted with skepticism by nonenvironmental decisionmakers in government, the simpler comparison of subsidy amount with expenditure amount may even be politically more effective. It could then be noted that the actual costs in terms of environmental damage and economic efficiency will likely be greater.<sup>25</sup>

The standardized list of subsidies relating to potentially environmentally damaging products should include:

- Subsidies for the production and consumption of energy, notably motor fuels, coal, and electricity. (Subsidies for motor fuels and coal have been reduced significantly over the past decade in many countries.)
- Subsidies for the production and consumption of agricultural chemicals, notably fertilizers and pesticides.
- Subsidies for the exploitation or harvesting of natural resources, in particular, timber.

Ideally, the PEER should look at subsidies both to consumers and to producers, as well as

direct subsidies and effective tax breaks in these fields. Since each type may affect behavior in a different way, they should be differentiated, but for illustrative purposes in the context of a PEER, they probably could be summed for a rough total. This is because in theory subsidies to producers can be passed through to consumers, and a dollar not paid in tax can be thought of as equivalent to a dollar received (although tax may have to be paid on the latter).

In addition, the PEER could compare charges for natural resource use and exploitation with estimated ideal scarcity prices based on local estimates or international benchmarks. The two most important areas to concentrate on will probably be timber-harvesting charges (“stump prices”) and water use charges, notably for irrigation. Which are the most relevant sectors to observe will depend on the country. Estimated undercharging could be added to the rough total but should also be noted separately.

In addition to comparing total potentially environmentally damaging subsidies with total environmental expenditures, more targeted comparisons may provide interesting illustrations of the extent to which particular expenditures may be undermined by particular subsidies. For example, agricultural chemical subsidies could be compared with the amount spent on water treatment, and energy subsidies for industry could be compared with grants or tax breaks for PAC expenditures or with air pollution monitoring costs. Subsidy amounts should also be referenced in the discussion of ways of increasing the overall envelope for environmental expenditures.



## Chapter 6

# Suggested Areas for Further Work

This report has mentioned a number of areas for further research related to producing and updating a set of guidelines for PEERs. Many of these concern suggestions for annexes in the PEER guidelines that could assist the review team in constructing a database, analyzing allocations, and analyzing particular programs and projects. These suggestions are briefly summarized here:

- A set of draft guidelines for PEERs, as a follow-up to this report.
- Suggested procedures for handling common data availability and quality problems, including practical advice on ensuring that information on environmental expenditures is comprehensive (that significant public environmental expenditures have not been left out of the database).
- The development and testing of appropriate ratios for use in expenditure analysis, as well as best practice benchmarks.
- Work on how to monitor and adjust trends for shifts in environmental expenditures that are attributable to nonpolicy reasons,

notably the inadequacy of the budgetary process.

- A set of stylized facts to aid in the review of the appropriateness of government involvement and the mode of involvement in a particular program. Such stylized facts, as suggested by Pradhan (1996), would be based on a distillation of best practice studies in the environmental field.
- Development of a set of appropriate output indicators for different types of common programs and projects in the environmental field.

The World Bank and its partners have initiated preparation of CEAs in a number of countries on a pilot basis. These pilots will allow for the testing of various approaches and tools. The set of draft guidelines should be tested in CEA pilot countries, and a mechanism should be set up to collect experiences and ensure that the lessons learned are used to develop the PEER guidelines further, with the aim of arriving at an agreed-on PEER toolkit.





## Appendix A

# Examples of Environmental Projects from the Asia Environmental Strategy

The following extracts from *Toward an Environmental Strategy for Asia* (Brandon and Ramankutty 1993) were used to help define environmental expenditures in the PEERs for Bangladesh and the Indian state of Uttar Pradesh.

[from page 189]

### APPENDIX B. BOX B. I: WHAT ARE ENVIRONMENT PROJECTS?

In this report, the World Bank's environmental activities are divided into the following categories:

(a) Urban and infrastructure projects: project components addressing sewerage and sanitation; solid waste management; pollution monitoring, regulation, and enforcement; urban institutions and strategies for pollution control; and transport-related environmental issues (vehicle standards, fuel efficiency and modification, marine pollution).

(b) Industry and energy projects: project components addressing all forms of industrial pollution abatement, waste reduction, recycling, control of hazardous waste, reduced

energy sector emissions, energy efficiency, demand-side management, and institutional strengthening (standards setting, regulation, monitoring and enforcement).

(c) Agriculture and natural resource projects: project components addressing soil conservation and restoration, forest conservation, watershed areas, and conservation of biodiversity.

(d) Other projects: population programs; environmental health and education; environment-related policy reform; and cross-cutting activities, such as environmental assessment capacity-building, [national environmental action programs], natural resource accounting; and environmental institutional strengthening in general.

Notably absent from this narrow definition of "environmental projects" is lending for urban and municipal water supply, disaster relief/reconstruction, resettlement, and hydro-power. These activities are not considered to be environmental for the following reasons:

(a) Water supply projects, while beneficial for people, do not have unambiguous impacts on

the environment (i.e. large water supply systems such as dams, canals, groundwater and transfer schemes may have some adverse environmental impacts). On the other hand, urban and industrial sewage, sanitation, and wastewater treatment projects are included here as environmental, in that they lead to less pollution of surface, ground, and coastal waters.

(b) Disaster relief and reconstruction projects may mitigate the negative effect of the environment on people, but they do not generally mitigate the negative effect of people on the environment. Disaster “prevention” projects, such as the Bangladesh Flood Protection Scheme, similarly are not classified as environmental, since they may have environmentally negative impacts on natural ecological systems.

(c) Resettlement activities are designated to minimize the negative social impacts of certain development projects, but have no direct environmental benefits. The exception to this rule is the case of resettlement activities associated with biodiversity projects.

(e) Hydroelectric projects may have local negative environmental impacts in spite of their regional and global clean energy benefits.

[from p. 190]

Two examples show how project expenditures for the environment were estimated:

(a) The Second Jabotabek Urban Development Project in the greater Jakarta area, Indonesia, has nine components. . . . Three of these components deal directly with drainage, sanitation, and sewerage; three deal with water supply; and three deal with management review, miscellaneous studies, and overall project coordination. The expenditure allocations for this project were: 100 percent of the drainage, sanitation, and sewerage activities were classified as environmental; the water supply components were not classified as environmental; and half of the review, study, and coordination activities were considered to be environmental.

(b) The West Bengal Forestry Project in India has eleven components, divided into eight that support commercial agriculture, pastoral, and forestry activities (such as farm forestry, fodder development, plantation forestry, and support to extension), and three that address environmental degradation (mangrove protection, rehabilitation of degraded forests, and support to wildlife and protected areas). Only the latter three components were considered to entail environmental work, as narrowly defined in box B.1.



## Appendix B

# OECD Checklists for Measuring Performance of Public Environmental Expenditure Management

The OECD has developed several good practice checklists for evaluating the performance of institutions managing public environmental expenditures. These checklists evolved from earlier guidelines for evaluating special environmental funds in Central and Eastern Europe and the former Soviet Union. Some

items in Checklist 3 may be especially relevant for examining institutional arrangements regarding funds management for various agencies or projects. Elements of Checklist 1 may be useful for determining whether the government's role in a particular project or program is appropriate.<sup>26</sup>

### Checklist 1. Performance in terms of environmental effectiveness

<i>Checkpoint</i>	<i>Description</i>
<b>1. Public expenditure needs to be considered in connection with other environmental policy instruments.</b>	Aid is provided after solid analysis has demonstrated that the assistance is necessary to achieve environmental policy goals. If administrative instruments, economic instruments, or private expenditure can achieve these goals, public financial resources should be saved for other uses. Independent, external auditors periodically review the value added of public expenditures.
<b>2. Public financing is committed to a well-defined expenditure program.</b>	Public financing is committed to well-targeted and well-defined expenditure programs established as a part of a wider environmental program. These programs have specific, measurable, agreed, realistic, time-bound objectives; eligible beneficiaries; specified financing needs; eligible project types; and a set of written rules that guide the financing decisions which enable the objectives to be met. These environmental program objectives are established through a political process led by the appropriate government agency and are justified by the high ratio of social benefits to social costs.
<b>3. Environmental effects are meaningfully considered in project appraisal.</b>	Standard application forms are used to solicit quantitative information on projects' environmental effects. Once obtained, the accuracy and reliability of this information is verified. Unambiguous indicators of environmental effects are essential inputs to project appraisal and selection. Actual environmental effects are monitored throughout the project cycle and after implementation. If the project fails to achieve its predicted effects, as listed in the application form, effective sanctions are enforced in proportion to the violation.

<i>Checkpoint</i>	<i>Description</i>
<b>4. Cost-effectiveness is an essential quantitative basis for project selection.</b>	Project selection criteria ensure that limited public funds achieve the greatest environmental effect. Quantitative information on project costs is requested from applicants in a standard application form. The accuracy and reliability of cost information are verified. Properly discounted full lifetime costs (investment, operational, and current maintenance) are duly considered in the appraisal process. A unambiguous cost-effectiveness indicator (unit cost of achieving environmental effect) is an essential quantitative basis for appraisal, scoring, ranking, and selecting projects. Consistency of information on costs is checked throughout the project cycle and is monitored after project implementation. If actual costs are higher than those in the application form, effective financial sanctions are enforced proportional to the deviation.
<b>5. Cost-effectiveness and environmental effectiveness are key indicators of institutional performance.</b>	Project-level environmental and cost data are tracked and stored in a database format in a way that allows unambiguous ex post verification and analysis. Information on the cost of achieving environmental effects is periodically reported to governing bodies and to the public. External independent reviews of cost-effectiveness and environmental effectiveness are periodically conducted. When problems are identified, governing or executive bodies take adequate corrective or preventive action.
<b>6. Limited public funds leverage private and foreign finance.</b>	Public funds cover less than 100 percent of project costs. The ratio of leverage of private and foreign finance in the entire portfolio is a formal requirement and a performance indicator. The full financial plan of the project is requested from applicants in a standard form. Data on financing from other sources are verified. No disbursement is made until full financing for the project is adequately secured.
<b>7. Social equity considerations do not undermine environmental effectiveness.</b>	The type of beneficiary should not influence the rate of assistance for social equity purposes. This is especially the case when socially motivated environmental subsidies could trigger implementation of projects that are only marginally important to the environment. In principle, equity issues are separately addressed through targeted instruments of social policy.

## Checklist 2. Performance in terms of fiscal prudence

<i>Checkpoint</i>	<i>Description</i>
<b>1. Environmental expenditure programs comply with high standards of fiscal discipline.</b>	<p>Implementation of environmental expenditure programs does not lead to deficits. In particular, contingent and implicit liabilities (such as loan guarantees) are not incurred without explicit, prior approval from fiscal authorities. Medium-term financial forecasts, including contingent and implicit liabilities, are regularly prepared and are disclosed in financial statements.</p> <p>The institutional setups for managing environmental expenditure programs facilitate fiscal transparency. Mandatory internal and external independent audits (financial, legal, and performance) are regularly carried out. Both cash and accrual accounting systems, based on international standards, are introduced and approved by finance authorities. Ex post reporting, according to a transparent expenditure classification system, is regularly conducted and publicly disclosed. An estimate of the revenue and the corresponding expenditures of all</p>

**Checklist 2. Performance in terms of fiscal prudence** *(continued)*

<i>Checkpoint</i>	<i>Description</i>
	extrabudgetary funds is provided in the budget, at least as an annex. Statements on debt and contingent liabilities, especially of all extrabudgetary environmental institutions, are presented to the ministry of finance along with the budget of the ministry of environment.
<b>2. Environmental expenditure programs do not drive public money out of the public finance system.</b>	If the revenues managed within the program come directly or indirectly from compulsory transfer payments (taxes, charges, fees), they are treated as public funds in the meaning of the laws of public finance, public procurement, and state aid. As such, this money is subject to the usual fiscal discipline in the entire public finance sector even if it is managed outside the budget. The revenues flow through treasury accounts before they are allocated to the environmental expenditure program.
<b>3. Negative impacts of earmarking on allocative efficiency are minimized.</b>	If the environmental authorities propose to earmark some taxes and compulsory charges for an expenditure program, they need to demonstrate that the benefits of earmarking outweigh the risks of limiting the government's flexibility in allocating current spending according to priority social needs. Further earmarking within earmarked schemes (e.g., subfunds within earmarked environmental funds) is avoided, since it further infringes on efficiency. If internal earmarking is unavoidable, safeguards prevent inefficient resource allocation and the creation of perverse incentives.
<b>4. Creation of vested interests is prevented.</b>	The legal documents underlying the expenditure program include provisions to ensure that public funds are phased out after they have fulfilled their role. To this end, mandatory reviews of the true need for public expenditure programs are conducted. In addition, an incentive structure is in place to prevent perpetuation of public expenditure programs longer than needed on efficiency grounds.
<b>5. Governance bodies of expenditure programs are accountable for performance to the government, parliament, and the public.</b>	All individuals involved in managing expenditure programs are held accountable for decisions within their distinct lines of responsibility. Accountability systems are based on acknowledged international standards. Arrangements involving conflicts of interest are eliminated. Public funds are guarded against corruption and fraud. This is facilitated politically by effective checks and balances on various interest groups in governing bodies.  Accountability systems are supported by transparent and meaningful information provided to potential beneficiaries on the key terms and rules of the expenditure program. Ex post reports on decisions made and results achieved (in terms of specified performance criteria) are periodically disclosed.
<b>6. Collection of revenues is separated from expenditure management.</b>	Collection of public revenue and direct procurement of equipment and construction services are institutionally separated from expenditure management (e.g., appraisal and selection of projects for financing). Collection of revenue from fiscal or quasi-fiscal instruments is normally done by relevant fiscal authorities under the control of treasury services. Direct procurement of equipment and services needed to implement projects is the responsibility of the project owner. Public procurement rules apply to all purchases from public funds even if a purchasing agent is a private entity.

**Checklist 2. Performance in terms of fiscal prudence** *(continued)*

<i>Checkpoint</i>	<i>Description</i>
<b>7. Public expenditures are used for projects that are economically efficient but not commercially viable.</b>	Public expenditures are not used to support projects that could be implemented on commercial terms. Financial support is limited to what is necessary to make environmental projects financially viable to the beneficiary, given prevailing market conditions and the cash flow profile of the project. The rate of assistance (share of grant equivalent in total project cost) is also adjusted to the value of public benefits generated by a project. Subsidy equivalents in all projects and financial instruments are regularly calculated and are disclosed to the public.
<b>8. Competition with private financing institutions is avoided.</b>	Subsidies to environmental projects do not distort competition in financial markets and do not obstruct the development of private financial institutions. Financial products used in environmental expenditure programs do not compete with financial products offered by commercial banks or investment funds to the same customers and in the same project categories.
<b>9. Special environmental expenditure programs focus on financing capital investments.</b>	Special environmental expenditure programs are generally not used to subsidize operational costs of environmental installations, which should be recovered from users, beneficiaries, or polluters as appropriate. Running costs of environmental administration are financed through a regular budget process. Special expenditure programs are normally focused on financing investment in fixed assets or in precisely defined noninvestment projects, which are not the regular duties of administration. In exceptional instances, when cash flow problems threaten the projects' operations or existence, assistance may be given for a strictly limited period, during which the assistance declines.

**Checklist 3. Performance in terms of management efficiency**

<i>Checkpoint</i>	<i>Description</i>
<b>1. Governance of expenditure programs is subject to consistent rules rather than ad hoc discretion.</b>	Terms and conditions of financing, decisionmaking and administrative procedures, internal policies, and algorithms for project appraisal and selection are written and are released to the public. They are coherent and consistent over time (they do not change frequently and randomly). At the same time, they are periodically reviewed to identify areas for improvement. Needed reforms are implemented without delay.
<b>2. Executive management of an expenditure program is depoliticized and is accountable for performance.</b>	<p>Lines of responsibility of governance and management bodies are clearly defined and separated from each other. The governing body is responsible for programming, priority setting, performance evaluation, supervision, and control. Political interference in the selection of specific projects and beneficiaries is strictly limited and is governed by rigid procedures.</p> <p>A professional executive management body has a high degree of operational autonomy but is subject to strict accountability for performance. Its responsibilities focus on project cycle management—in particular, on impartial project appraisal.</p> <p>Executive managers are held accountable for performance. Performance indicators are clearly written and are used in regular performance management. International quality management systems (such as the ISO 9000 family) are used as the benchmark for performance of the executive management standards.</p>

**Checklist 3. Performance in terms of management efficiency** *(continued)*

<i>Checkpoint</i>	<i>Description</i>
<b>3. The project cycle is subject to intelligible and transparent written procedures.</b>	Applications for financing are accepted only on standard forms tailored to different project types. They are supported by clear, user -friendly instructions. They are available to all potential applicants in an electronic version. All milestones, procedures, responsible bodies, and additional required documents are communicated to applicants up front and in writing. The project cycle guidelines for applicants are clearly written and widely available. The project cycle manual for the staff is binding and is used in practice.
<b>4. Information provision and communication with applicants is proactive and fair.</b>	Proactive communication informs potential applicants of funding opportunities and of the terms and conditions of the application and appraisal processes. Applications solicit all project information essential for appraisal but avoid overburdening applicants by demanding irrelevant data. Communication with applicants is organized in a transparent and fair manner, giving all applicants equal access to information. Communication policy ensures equal opportunity for applicants to have their projects impartially reviewed on the basis of merit.
<b>5. Project identification is proactive and is based on the expenditure program.</b>	Project identification implies an effective search for the best project opportunities in a given expenditure program. Project identification follows from the environmental expenditure program established by the administration responsible for environmental policymaking and priority setting.
<b>6. Project appraisal criteria and procedures are objective, transparent, and unambiguous.</b>	Project appraisal criteria and procedures are specified in legal or operational documents. They are binding on governance and executive bodies and accessible to the public. Appraisal systems are tailored to the size and complexity of different project types. For large investment projects, a two-stage appraisal process is used: (1) screening against eligibility criteria, and (2) ranking of eligible projects. The appraisal system meaningfully compares comparable projects with each other and against objective benchmarks. The appraisal system is kept relatively simple and allows for ex post verification of the selection process, including tracking of personal responsibilities for important judgments and decisions. Appraisal reports are lucid and are publicly available. Discretionary, subjective elements of project appraisal and selection are subject to explicit written procedures. Their records are kept in publicly available files.
<b>7. Expenditure management staff have the right skill set and a high level of competence and motivation.</b>	Expenditure programs have a staff assigned to their management. The skills of the staff adequately match the technical requirements of a given expenditure program. The recruitment and remuneration of staff are based strictly on merit. They are adequate for attracting and retaining highly qualified people. Performance management of personnel rewards high levels of integrity and commitment. The staff has a professional but friendly and welcoming attitude toward beneficiaries.
<b>8. Financial products are adjusted to risk management capacity.</b>	The sophistication of operations and disbursement instruments is proportional to the institutional capacity to manage the associated risk. Typically, grants are used first. As in-house capacity to manage financial risk increases, other financial products are explored in the order of increasing risk: interest subsidies, indirect loans, leasing, direct loans, equity investments, and loan guarantees. Before a new financial product is applied, its feasibility is checked through an assessment of market needs and a business plan.

**Checklist 3. Performance in terms of management efficiency** *(continued)*

<i>Checkpoint</i>	<i>Description</i>
<b>9. Outsourcing is competitive and does not lead to perverse incentives.</b>	External entities (e.g., commercial banks and consulting companies) are contracted to provide certain services, such as loan management, risk assessment and coverage, creditworthiness analysis, and technical advice on project appraisal. This outsourcing should always be conducted through a competitive process and retendered periodically. Conflicts of interest are prevented (e.g., the same consultants cannot both prepare projects and appraise them). All relations with external stakeholders (beneficiaries, intermediaries, consultants) are handled in a transparent, fully unbiased, arm’s-length manner. Training and assistance in project preparation should ensure equal access opportunities for potential beneficiaries.



## Appendix C

# Environmental Financial Flows to Developing Countries

The OECD and the World Bank compile data on flows of official development finance (ODF) into developing countries. ODF is composed of three categories:

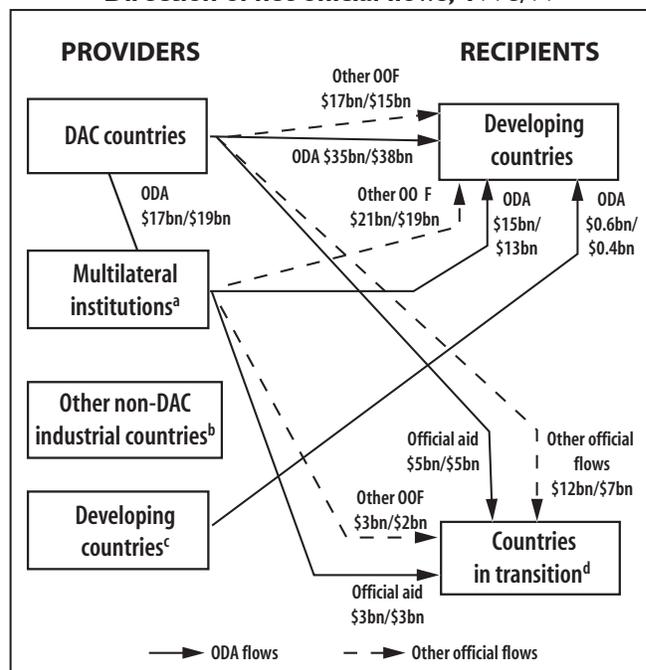
- Official assistance (OA) to middle-income countries
- Official development assistance (ODA) to developing countries
- Other official flows (OOF).

ODA refers to grants or loans to developing countries (Part 1 of the DAC List of Aid Recipients) that are undertaken by the official sector with the promotion of economic development and welfare as the main objective and are extended on concessional terms (i.e., with a grant element of at least 25 percent).

OA refers to flows that meet the criteria for ODA but are extended to aid recipients on Part II of the DAC list (middle-income countries). OOF consists of flows for development purposes with too small a grant element to qualify as ODA. OOF includes officially supported loan insurance and export credits, although the latter are often excluded on the grounds that they are primarily trade promoting rather than development oriented (IMF 2001).

Figure C.1 illustrates the IMF's estimates of the direction of ODF flows in fiscal year 1998/99, based primarily on OECD/DAC data. Table C.1 provides additional detail on the composition of ODF for the period 1993 to 2000. The table

**Figure C.1**  
Direction of net official flows, 1998/99



- a. Multilateral disbursements differ from DAC countries' contributions to multilateral institutions.
- b. Flows have been negligible since 1992.
- c. Mostly Arab countries.
- d. Detailed breakdowns of official flows to countries in transition are not available.

Source: IMF (2002), Figure 2.1.

**Table C.1. Official development finance (ODF) from DAC member countries and multilateral agencies to aid recipients, 1993–2000** (billions of current U.S. dollars)

	1993	1994	1995	1996	1997	1998	1999	2000 <sup>a</sup>
<b>Official development assistance</b>	<b>55.5</b>	<b>59.6</b>	<b>59.1</b>	<b>55.8</b>	<b>47.9</b>	<b>50.1</b>	<b>52.1</b>	<b>49.5</b>
Bilateral component	39.4	41.3	40.6	39.1	32.4	35.2	37.9	36.0
Multilateral component	16.1	18.3	18.4	16.7	15.4	14.9	14.2	13.5
<b>Official assistance to middle-income countries</b>	<b>6.0</b>	<b>6.9</b>	<b>8.4</b>	<b>5.6</b>	<b>5.6</b>	<b>7.0</b>	<b>7.8</b>	<b>7.8</b>
Bilateral component	5.2	5.5	7.1	4.0	4.0	4.5	4.9	4.9
Private component	0.7	1.3	1.3	1.5	1.6	2.5	2.9	2.9
<b>Other official flows</b>	<b>21.0</b>	<b>18.1</b>	<b>20.1</b>	<b>12.2</b>	<b>22.0</b>	<b>31.7</b>	<b>26.1</b>	<b>8.2</b>
Bilateral component	11.4	12.2	14.0	5.7	5.9	12.8	10.4	-1.4
Multilateral component	9.6	5.8	6.1	6.5	16.0	18.9	15.6	9.7
<b>Total ODF</b>	<b>82.4</b>	<b>84.5</b>	<b>87.6</b>	<b>73.5</b>	<b>75.4</b>	<b>88.8</b>	<b>85.9</b>	<b>65.5</b>

a. Estimated.

Source: OECD DAC tables.

highlights the general decline in ODF during the 1990s and the rebound in 1998, which is generally attributed to financial support to countries affected by the 1997 Asian financial crisis.

The size of the environmental component of aid depends on the definition of environmental project. A recent report by Donge and others (2001) notes that various organizations have used different definitions of financial aid flows. Translation of these into “screens” applied to the OECD/DAC Creditor Reporting System (CRS) leads to an environmental component of total international aid flows of between 2 and 13 percent in 2000.

The CRS database includes basic details regarding each commitment, including the donor name and agency, the recipient country, the project title, and long and short descriptions of the project. It includes fields that enable users to screen for environment-related aid flows and that can accommodate alternative definitions and typologies of environmental expenditure.

Each transaction includes a purpose code highlighting the specific area (sector) of the recipient’s economic or social structure that the transfer is intended to foster. The 188 purpose codes include 7 within the category of general environmental protection (codes 41010–41082 in Table 2, Chapter 4).

**Table C.2** details the purpose codes for four environment screens applied in Donge and others (2001). These screens were developed on the basis of the definitions of environmental project used by the organizations.

Drawing on the four environmental screens highlighted in Table C.2, The authors constructed pivot tables for several years of data. (Methodological problems encountered are described in Box C.1.)

The variable results in Table C.3 illustrate the effect of differences in environment screen construction. The OECD, World Bank and WRI narrow screens generate estimates of environment-related aid ranging from 1.5 to 6 percent, whereas the WRI broad screen

**Table C.2. Four environmental screens based on CRS purpose codes**

CRS purpose code	Description	Environmental screen			
		OECD	World Bank	WRI narrow	WRI broad
14010	Water resources policy and administrative management				Included
14015	Water resources protection	Included		Included	Included
14020	Water supply and sanitation, large systems				Included
14030	Water supply and sanitation, small systems				Included
14050	Waste disposal/management	Included		Included	Included
14081	Education and training in water supply and sanitation				Included
23030	Power generation/renewable sources			Included	Included
23066	Geothermal energy		Included	Included	Included
23067	Solar energy		Included	Included	Included
23068	Wind power		Included	Included	Included
23069	Ocean power			Included	Included
23070	Biomass		Included	Included	Included
23081	Energy education/training		Included		Included
23082	Energy research		Included		Included
31130	Agricultural land resources			Included	Included
31140	Agricultural water resources				Included
31192	Plant and postharvest protection and pest control				Included
31210	Forestry policy and administrative management			Included	Included
31220	Forestry development		Included	Included	Included
31281	Forestry education/training			Included	Included
31282	Forestry research		Included	Included	Included
31291	Forestry services		Included		Included
31320	Fishery development				Included
41010	Environmental policy and administrative management	Included	Included	Included	Included
41020	Biosphere protection	Included	Included	Included	Included
41030	Biodiversity	Included	Included	Included	Included
41040	Site preservation	Included		Included	Included
41050	Flood control/preservation	Included		Included	Included
41081	Environmental education/training	Included	Included	Included	Included
41082	Environmental research	Included	Included	Included	Included
43030	Urban development and management				Included
43040	Rural development				Included

Source: Donge and others (2001): 6 (Tables 1–4).

generates estimates of between 11 and 18 percent. Most of this difference can be attributed to the inclusion of water resources and water supply–related purpose codes in the WRI broad screen. Figure C.2 plots environmental aid for the period 1990–2000 according to these definitions.

It is also possible to draw on other fields in the CRS database to disaggregate environmental

aid by donor (bilateral, multilateral); by aid instrument (loan, grant, grant component); by purpose code prefix; or with reference to a number of other fields, including an environmental marker and a field that indicates whether the development of the ODA commitment involved environmental impact assessment.

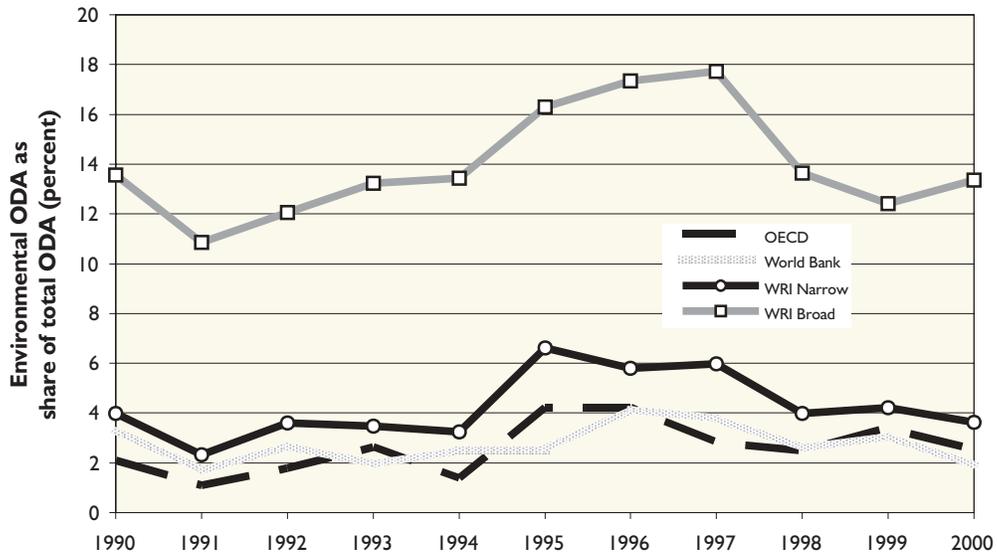
**BOX C.1****Methodological note regarding use of the CRS database**

The CRS database details between 6,000 and 30,000 official development finance transactions a year. Data are available from 1973, but for the purposes of this study only data for 1991–2000 were examined. According to OECD/DAC (2002), this represents some 212,385 records. Some significant difficulties arose in analyzing this data set. For example, the 1998 file included a number of formatting errors such as the use of commas in text strings within comma-delimited data sets. In addition, almost every year file included a small number of transactions with no grant component data or no total grant/loan amount. A cleanup of these files yielded 211,340 viable transactions (99.5 percent, based on the OECD/DAC data) as a basis for environmental screening.

**Table C.3. Environmental aid as a share of total aid, 1990 and 1995–2000**

<i>Year and screen</i>	<i>Amount (U.S. dollars)</i>	<i>Share of total aid (percent)</i>	<i>Year and screen</i>	<i>Amount (U.S. dollars)</i>	<i>Share of total aid (percent)</i>
<b>1990</b>	<b>42,741,155,825</b>		<b>1997</b>	<b>42,972,591,527</b>	
OECD	890,047,209	2.08	OECD	1,223,695,573	2.85
World Bank	1,416,136,772	3.31	World Bank	1,628,565,636	3.79
WRI narrow	1,698,309,673	3.97	WRI narrow	2,572,611,656	5.99
WRI broad	5,794,719,659	13.56	WRI broad	7,616,385,220	17.72
<b>1995</b>	<b>49,544,036,715</b>		<b>1998</b>	<b>49,891,587,929</b>	
OECD	2,094,128,141	4.23	OECD	1,236,490,847	2.48
World Bank	1,244,751,288	2.51	World Bank	1,285,522,476	2.58
WRI narrow	3,275,659,746	6.61	WRI narrow	1,992,149,445	3.99
WRI broad	8,075,863,075	16.30	WRI broad	6,807,914,331	13.65
<b>1996</b>	<b>48,756,311,755</b>		<b>1999</b>	<b>55,467,344,569</b>	
OECD	2,050,973,180	4.21	OECD	1,890,620,269	3.41
World Bank	2,011,367,893	4.13	World Bank	1,699,375,582	3.06
WRI narrow	2,824,032,474	5.79	WRI narrow	2,341,544,935	4.22
WRI broad	8,451,694,260	17.33	WRI broad	6,890,177,132	12.42

**Figure C. 2**  
**Estimates of environment-related ODA commitments as a percentage**  
**of total ODA using four CRS purpose code environmental screens**



Note: ODA, official development assistance; OECD, Organisation for Economic Co-operation and Development; WRI, World Resources Institute.

Source: CRS database, 1990–2000.





Appendix D

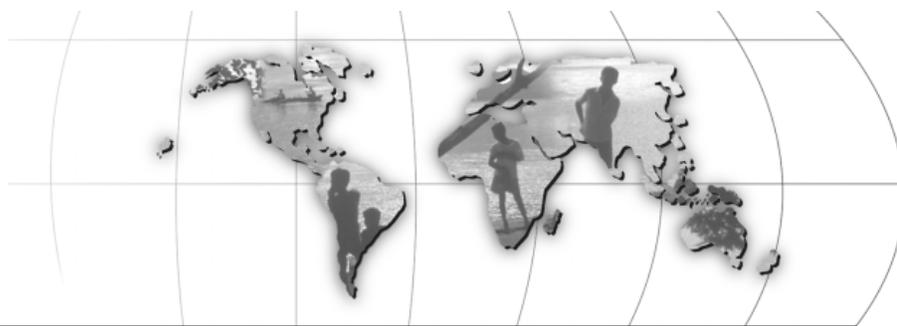
## Guidelines for Using World Bank Thematic Codes Regarding Environment and Natural Resources Management

Subtheme	Sector
<p><b>Biodiversity: ENV-BD</b></p> <p><b>USE FOR :</b></p> <ul style="list-style-type: none"> <li>In-situ conservation (establishment of protected areas, management of existing protected areas)</li> <li>Ex-situ conservation (ex situ collections, germplasm and genebanks, arboretums, zoos)</li> <li>Targeted biodiversity training, research and assessments</li> <li>Ecosystem management approaches (including payment for ecological services)</li> <li>Freshwater/marine biodiversity protection</li> <li>Wetlands/mangrove/coral reef protection</li> </ul>	<p><b>AGRICULTURE, FISHING &amp; FORESTRY</b></p>
<p><b>Water Resources Management: ENV-WR</b></p> <p><b>USE FOR :</b></p> <ul style="list-style-type: none"> <li>Freshwater/coastal/marine water resource management</li> <li>Groundwater management</li> <li>Watershed and river basin protection, management, and rehabilitation</li> <li>Water quality management</li> <li>Flood protection and management</li> </ul>	<p><b>AGRICULTURE, FISHING &amp; FORESTRY</b></p>
<ul style="list-style-type: none"> <li>Bulk water allocation and pricing: water rights</li> <li>Drainage</li> </ul>	<p><b>WATER &amp; SANITATION</b></p>

<b>Subtheme</b>	<b>Sector</b>
Reservoir management improvement Dam safety measures	<b>ENERGY &amp; MINING</b>
Coastal zone and marine water management Flood protection and management (e.g., inland navigation)	<b>TRANSPORTATION</b>
<b>Land Management: ENV-LM</b>	
<b>USE FOR :</b>	
Control and mitigation of land degradation, desertification, and drought Land policies and administration (including titling, registration, tenure, mapping) Land rehabilitation, protection, and conservation Sustainable land management practices Access to land resources, markets, information and technologies, and capacity building Impact monitoring of land use and land use changes and interventions Rural cadastres	<b>AGRICULTURE, FISHING &amp; FORESTRY</b>
<b>Climate Change: ENV-CC</b>	
<b>USE FOR:</b>	
Carbon sequestration	<b>AGRICULTURE, FISHING &amp; FORESTRY</b>
Alternative and renewable energy technologies Gas flaring abatement Energy conservation and efficiency improvements	<b>ENERGY &amp; MINING</b>
Nonmotorized transportation Cleaner transportation technologies	<b>TRANSPORTATION</b>

Subtheme	Sector
<b>Environmental Policies and Institutions: ENV-PI</b>	
<b>USE FOR :</b>	
<p>Establishment/strengthening of environmental regulatory institutions (national, subnational, local)</p> <p>Environmental policies, regulations, monitoring, and enforcement</p> <p>Environmental assessment and management capacity improvement</p> <p>Financing mechanisms and economic instruments for environmental management</p> <p>Environmental awareness building, education, and training</p>	<p>ALL RELEVANT SECTORS</p>
<b>Pollution Management and Environmental Health: ENV-PM</b>	
<b>USE FOR :</b>	
<p>Mitigation of pollution and health effects from pesticide use</p> <p>Reduction/elimination of the use of persistent organic pollutants and ozone-depleting substances</p> <p>Mitigation of non-point-source pollution from agricultural runoff</p>	<p>AGRICULTURE, FISHING &amp; FORESTRY</p>
<p>Cleaner fuels</p> <p>Oil spill contingency planning and remediation</p> <p>Rehabilitation of contaminated production sites and surrounding areas</p> <p>Improved environmental management in mining and energy operations</p>	<p>ENERGY &amp; MINING</p>
<p>Cleaner production/eco-efficiency</p> <p>Industrial pollution control and prevention</p> <p>Hazardous waste treatment, management, storage, and disposal</p> <p>Reduction/elimination of the production of persistent organic pollutants and ozone-depleting substances</p>	<p>INDUSTRY &amp; TRADE</p>

Subtheme	Sector
Pollution abatement from shipping activities Vehicle emissions monitoring and maintenance	TRANSPORTATION
Water pollution abatement Sanitation and sewerage Wastewater management and treatment Solid waste management Surface and groundwater quality management and monitoring	WATER & SANITATION
<p><b>Other Environment and Natural Resource Management: ENV-XX</b></p> <p><i>USE FOR :</i></p> <p>All other environmental activities that do not fall under other subthemes</p>	



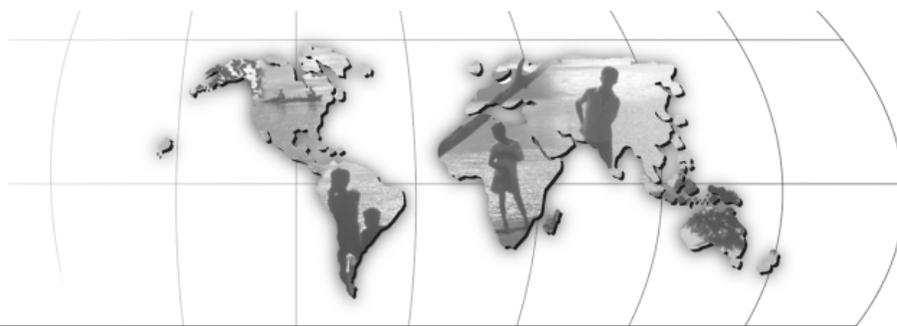
## Notes

1. For example, an expenditure program aimed at pollution abatement in the private sector that consists primarily of subsidies for the purchase of abatement equipment will generally be considered an inappropriate way of addressing the issue.
2. Chapter 5, “Main Elements of a Guidance Note,” below, discusses the use of other policy standards as a basis for judging expenditures when the standards used by the country are considered inappropriate.
3. According to this document, in November 1999 PREM established a subcommittee of the Public Sector Board to develop PER guidelines; the authors were unable to determine what came of this.
4. The OECD cautions about comparisons even among its relatively homogeneous member countries: “In many instances, however, definitions and methodologies remain diverse across Member countries. International comparisons should, therefore, be limited to orders of magnitude” (OECD 1997: 6).
5. It should be noted that although the ImageBank allows searches by document type, the terms “PER” and “PEER” are not included in the very long list of types.
6. The report notes that in developing countries, core environmental agencies typically account for most or all of the “pure” environmental expenditures such as environmental assessment, monitoring, and enforcement, while environmental units in line agencies (if they exist) participate only minimally in such activities. That is, there is usually little mainstreaming of environmental expenditures.
7. Details are available at <[http://www.oecd.org/EN/about\\_further\\_page/0,,EN-about\\_further\\_page-499-nodirectorate-no-no—8-no-no-2,00.html](http://www.oecd.org/EN/about_further_page/0,,EN-about_further_page-499-nodirectorate-no-no—8-no-no-2,00.html)> .
8. Additional details are available at <[http://www.oecd.org/EN/about\\_further\\_page/0,,EN-about\\_further\\_page-499-nodirectorate-no-no—8-no-no-3,00.html](http://www.oecd.org/EN/about_further_page/0,,EN-about_further_page-499-nodirectorate-no-no—8-no-no-3,00.html)> .
9. Additional details are available at <[http://www.oecd.org/EN/about\\_further\\_page/0,,EN-about\\_further\\_page-499-nodirectorate-no-no—8-no-no-6,00.html](http://www.oecd.org/EN/about_further_page/0,,EN-about_further_page-499-nodirectorate-no-no—8-no-no-6,00.html)> .
10. Data for expenditures on the category biodiversity and landscape are not included as part of PAC but are collected

- as part of environmental protection expenditure.
11. Note that both the PAC definition and the environmental protection definition of environmental expenditure exclude natural resource management. Expanding the framework to cover natural resource management could in fact mean that expenditure totals arrived at by the financing principle would be negative for the public sector in countries with large natural resource rent income.
  12. Eurostat has for some time supplemented its needs for additional environmental protection data with its SERIEE questionnaire. The joint OECD/Eurostat questionnaire is issued every two years, and the SERIEE is issued in the alternate years. It includes the elements of the joint questionnaire plus additional elements.
  13. R&D had already been covered but was excluded from the scope of the questionnaire, since the information was available from other OECD sources.
  14. The International Standard Industrial Classification of All Economic Activities (ISIC) and Statistical Classification of Economic Activities in the European Community (NACE) classification systems have been harmonized, at least at the higher levels of aggregation. The most relevant activities are probably NACE 90.01, "collection and treatment of sewage"; 90.02, "collection and treatment of solid waste"; and 90.03, "sanitation, remediation and similar activities."
  15. When calculating expenditures according to the financing principle, the money received from selling these services is recorded under the variable "revenues" for specialized producers (or for the public sector if, for example, the government collected fees for waste collection but contracted out actual waste collection activities).
  16. Final draft, Handbook of National Accounting, *Integrated Environmental and Economic Accounting 2003* (SEEA 2003), p.5-5, paragraph 5.25, available at <<http://unstats.un.org/unsd/environment/seea2003.htm>> . The handbook will be jointly published by the United Nations, the World Bank, the International Monetary Fund, the OECD, and Eurostat.
  17. Available at <<http://esa.un.org/unsd/cr/family2.asp?C1=4>> .
  18. Ecotec Research and Consulting Ltd.(1993), cited in Fulai Sheng (1997).
  19. The reason for the phrase "a particular sector" in the definition is not clear. It seems to imply that projects aimed at environmental improvement in general cannot be counted, although examples of some fairly general activities are noted in the explicit list of inclusions, e.g., "environment-related policy reform" and "cross-cutting activities such as environmental assessment capacity-building."
  20. As indicated above, "PAC expenditures" could include government activities such as regulation. Here, however, the informal use of "classic PAC expenditures" refers to cleanup or installation of infrastructure designed to physically prevent or diminish harmful environmental effects.
  21. "Programs," in public expenditure terms, are groups of expenditures aimed at the same thing—for example, environmental education.
  22. The terms "efficiency," "effectiveness," and "quality" appear to be used somewhat variably in PEER and PER practice.

23. The environmental finance strategies and performance reviews of public environmental expenditure management institutions by the OECD/EAP Task Force have addressed outcomes.
24. See for example the Van Lennep Programme on Economics and Sustainable Development, available at <<http://www.ecouncil.ac.cr/econ/keyissue/>> .
25. For example, even when they are aimed at correcting a market failure, subsidies are generally inefficient instruments; they are difficult to target in practice and often stimulate expansion of the eligibility pool while driving people away from potentially more productive activities. Thus, the removal of most environmentally damaging subsidies will have an economic as well as an environmental benefit.
26. The checklists have been minimally edited to conform with World Bank publications style.





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