THE WORLD BANK

Report No. 32783

Integrating Environmental Considerations in Policy Formulation

Lessons from Policy-Based SEA Experience

Environment Department
ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE DEVELOPMENT

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Environment Department
Environmentally and Socially Sustainable Development Vice Presidency

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Abbreviations and Acronyms

CEA	Country Environmental Analysis
CRA	Comparative Risk Analysis
CSA	Country Social Analysis
CSE	Centre for Science and Environment
CSIR	Council of Scientific and Industrial Research
CSO	Civil Society Organizations
CVC	Cauca Valley Corporation
DPL	Development Policy Loan
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EnvSAL	Environmental Structural Adjustment Loan
EPA	Environmental Protection Agency
GDP	Gross Domestic Product
IGR	Institutional and Governance Review
ITAC	International Trade Advisory Committee
MDG	Millennium Development Goal
NAFTA	North American Free Trade Agreement
NGO	nongovernmental organization
OP	Operational Policy
$PM_{2.5}$	particulate matter with a diameter of 2.5 microns or less
PPA	Participatory Poverty Assessment
PSIA	Poverty and Social Impact Analysis
R&D	research and development
SAGIT	Sectoral Advisory Groups on International Trade
SEA	Strategic Environmental Assessment
SOP	Sectoral Operational Program for Tourism and the Spa Industry
TOR	terms of reference
WHO	World Health Organization

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Contents

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Executive Summary

Millennium Development Goal (MDG) Number 7 aims to ensure environmental sustainability. As part of this goal, Target 9 requires countries to "integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources." This report looks at the main tool that exists to integrate environmental considerations[1] into policies, namely strategic environmental assessment (SEA).

In the literature, SEA extends the application of environmental impact assessment (EIA) from projects to policies, programs, and plans.[2] SEA is best described as an evolving family of tools.[3] Existing national, regional, and international SEA legislation, for the most part, falls under environmental impact assessment (EIA) legislation and extends the use of environmental impact assessment to programs and plans and, in some cases to policies. The European SEA Directive (Directive 2001/42/EC), for example, applies to programs and plans and equates SEA with a formal EIA-based procedure.

In practice, many SEAs (including those that are not driven by legislation) have a continuum of approaches, rather than a single, fixed approach.[4] As described below, at one end of the spectrum, SEA focuses on integrating biophysical *environmental* effects into higher levels of decisionmaking. At the other end of the spectrum, biophysical environmental, social and economic effects are considered in sustainability assessments.

There are many examples of applications of SEAs to programs and plans. This report, reviews the comparatively less extensive experience of application of SEA to policies specifically and draws lessons from it. The principal conclusion is that current SEA approaches, based on EIA methodology, of the sample reviewed have some influence on policy design but it is difficult to evaluate whether the SEA recommendations that have been incorporated into the policy are the key for sustainability or whether they only affect peripheral issues. Furthermore, beyond the design phase, there is even less information about implementation of these environmental aspects of public policies.

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[1] "Environment" in the context of this document means the biophysical environment, as well as the linkages of the biophysical environment with people's quality of life (health, livelihoods and vulnerability) and with economic activity.

[2] Examples of the limitations of EIA that can be overcome by SEA include: the inability of EIA to account for the cumulative effects of multiple, successive projects in a particular area, and the inability of EIA to focus attention on strategic choices that , if they had been made, would have precluded the need for the project considered in the EIA. For more on this subject see Thérivel and Partidário (1996:8-9) and Connor and Dovers (2004:153). A 2004 intergovernmental policy forum on environmental assessment characterized, as "core premises… that SEA will lead to fewer and/or simpler EIAs and will be more effective in identifying issues of cumulative impact" (Canadian Environmental Assessment Agency, 2004a:17).

[3] See Organisation for Economic Co-operation and Development, Development Assistance Committee (2005).

[4] See Dalal-Clayton and Sadler (2004) for the most recent comprehensive review of SEA.

To understand potential causes for an apparent limited influence of current SEA approaches to policies, the analysis turns to explore different policy formulation models that help to understand policy-making in practice. These models suggest that a more effective framework for SEA of policies is one that:

- Is a continuous process, in which the SEA process is integrated within the policy formulation process itself
- Focuses not just on the policy formulation process itself, but also focuses on policy implementation
- Uses SEA as a tool to take advantage of windows of opportunity in policy-making that occur when there is a concurrence of issues, problems, solutions, and people
- Utilizes analytical tools to establish environmental priorities as well as participatory approaches, particularly to obtain the perspective of the more vulnerable groups who disproportionately bear the burden of environmental degradation and who have less of a voice in policy formulation
- Frames environmental issues in the language of the key policymaker, i.e., in economic terms
- Seeks to take a continuous improvement approach in line with adaptive management and the realization that progress is incremental for the most part
- Seeks to build long-term constituencies and transparent processes that allow for the voice of the most vulnerable (i.e., those most affected by environmental degradation) to be heard and government to be accountable for acting on the needs of vulnerable groups.

Based on the aforementioned framework, this assessment suggests that SEA, as an evolving tool, could improve its influence on policymaking by more directly addressing institutional and governance dimensions. This implies a continuous effort, by a country, to incorporate the following four elements:

1. Prioritization of environmental issues in terms of their effect on economic development and poverty reduction, using both quantitative and participatory techniques, in order to select themes or sectors for which there is a definite recognition of the severity of environmental problems.

2. Mechanisms that bring together different viewpoints during the policy formulation and implementation process, particularly the viewpoint of the most vulnerable groups, i.e., those most affected by environmental degradation, who typically have less representation in the policymaking process. Establishing institutional mechanisms that do not disproportionately favor one stakeholder above another, as in the case of regulatory capture, is also important.

3. Mechanisms that ensure social accountability in the context of environmental issues, such as passage of legislation to allow for greater transparency in decision-making and outcomes, advocacy through a free press, and strengthening of recourse measures linked to, for example, environmental quality outcomes or licensing processes, such as complaints systems or the judiciary.

4. Mechanisms through which social learning can occur, so that key environmental priorities are given attention and continuously brought to the policy agenda so that incremental improvement can occur over time.

The analysis suggests that these elements operate throughout the policy design and implementation period. The emphasis is on sustaining a process rather than on output for a policy at a design stage. Conducted on a continuous basis, this approach would seek to improve the design and implementation of *all* relevant public policies associated with *only* those sectors or themes (such as energy, tourism, environmental health, or urban environment) where environmental issues have a major bearing on economic development and/or poverty reduction in that particularly country.

Bringing forward institutional and governance dimensions more directly means advocating that public participation in the policy-based SEA process move far beyond a simple public consultation process to instead strengthening the mechanisms of social accountability.

The above suggestions represent an ideal framework for public policymaking. Long periods of time and continuous engagements will be necessary to strengthen institutional capacity for good environmental governance. The willingness to engage may rest in public awareness of the severity of environmental degradation and its direct impacts on productivity or investments to build capital (social, natural, and physical).

The Bank and other development partners can support countries to move toward strengthening the policymaking and institutional framework by:

- Helping countries assess, through detailed institutional analysis, existing structures and practices to improve (a) how countries define environmental priorities; (b) how viewpoints of different stakeholders, particularly those most affected by environmental degradation, have a voice in public policy design and implementation; (c) social accountability; and (d) social learning

- Helping countries conduct quantitative and qualitative work that raises awareness of priority problems linked with long-term sustainable growth and, when warranted, place these issues on the policy reform agenda

- Support countries with financial resources and/or advisory services to adjust their existing institutional structures for more effective influencing of sustainable policy design and implementation

- Assist countries to ensure continuity with such institutional and policy reform efforts, and to support maintenance and continuous improvements of these policies and processes and corresponding environmental outcomes despite political cycles in countries.

Ultimately, however, it is essential for development agencies to view and work on institutional development over long periods of time. Development agencies' support to build a culture of monitoring and evaluation in countries is also essential so that countries themselves are continuously assessing outcomes, and can measure positive results. The presence of national environmental constituencies is likely to be a key factor in ensuring long-term continuity in integrating environmental considerations into policy formulation and implementation.

Chapter 1
Introduction

Context

Millennium Development Goal (MDG) Number 7 aims to ensure environmental sustainability. As part of this goal, Target 9 requires countries "integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources." This report looks at the main tool that exists to integrate environmental considerations[5] into *policies,* namely strategic environmental assessment (SEA).

Strategic Environmental Assessment: Definitions

In the literature, SEA extends the application of environmental impact assessment (EIA) from projects to policies, programs and plans.[6] SEA is best described as an evolving family of tools.[7] Existing national, regional, and international SEA legislation, for the most part, falls under environmental impact assessment legislation and extends the use of environmental impact assessment to programs and plans and, in some cases to policies. Typical of this is the European SEA Directive (Directive 2001/42/EC) which applies to programs and plans and equates SEA with a formal EIA-based procedure.

However, in practice, many SEAs (including those that are not driven by legislation) exhibit a continuum of approaches, rather than a single, fixed approach.[8] As described below, at one end of the spectrum SEA focuses on integrating biophysical *environmental* effects into higher levels of decisionmaking. At the other end of the spectrum biophysical environmental, social and economic effects are considered in sustainability assessments.

Formally, SEA can be defined as "a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure that they are fully included and appropriately addressed at the earliest appropriate stage of decision making on par with economic and social considerations" (Sadler and Verheem

[5] "Environment" in the context of this document means the biophysical environment, as well as the linkages of the biophysical environment with people's quality of life (health, livelihoods and vulnerability) and with economic activity.

[6] Examples of the limitations of EIA that can be overcome by SEA include: the inability of EIA to account for the cumulative effects of multiple, successive projects in a particular area, and the inability of EIA to focus attention on strategic choices which, if they had been made, would have precluded the need for the project considered in the EIA. For more on this subject see Thérivel and Partidário (1996:8-9) and Connor and Dovers (2004:153). A 2004 intergovernmental policy forum on environmental assessment characterized, as "core premises… that SEA will lead to fewer and/or simpler EIAs and will be more effective in identifying issues of cumulative impact" (Canadian Environmental Assessment Agency, 2004a:17).

[7] See Organisation for Economic Co-operation and Development, Development Assistance Committee (2005).

[8] See Dalal-Clayton and Sadler (2004) for the most recent comprehensive review of SEA.

1996:27). This definition of SEA (or variations of it) reflects an extension of "the EIA tradition and environmental concerns 'further up the chain' of decision making towards programmes and plans arising and dealt with in existing agencies and processes…." (Connor and Dovers 2004:165).

At the other end of the range, is the alternative conceptualization of SEA "as a mechanism for mainstreaming environment and sustainability across the higher levels of policy making….[It] suggests inadequacies of existing policy processes and thus a more substantial degree of organization and institutional reforms" in comparison to the concept of SEA as an upward extension of EIA (Connor and Dovers 2004:165).

This alternative concept is reflected in the term "integrated assessment," defined by Dalal-Clayton and Sadler (2004: Chapter 2, 12) as "a structured process to assess complex issues and provide integrated insights to decision-makers early in decision-making processes." The integration, in this context refers to the joint consideration of social and economic factors along with environmental concerns. Related terms used by SEA experts, such as sustainability assessment or sustainability appraisal also emphasize this joint consideration of environmental, social, and economic effects. Some SEA specialists have registered concerns about this approach because they fear that attention to environmental concerns will be, in a sense, diluted by the simultaneous consideration of economic and social issues (Connors and Dover 2004).

The World Bank describes SEA as a participatory approach for upstreaming environmental and social issues to influence processes for development planning, decisionmaking, and implementation at the strategic level. Implicitly included in this description is the importance of analytical work to support the decisionmaking process (Ahmed, Mercier, and Verheem 2005).

Steps in Typical SEA Guidelines[9]

The typical steps in SEA processes are briefly described below. Historically, SEA has evolved out of the field of EIA, and many SEA advocates were EIA specialists who believed that assessments at the level of policies, plans, and programs could overcome the limitations of assessments conducted for individual projects.[10] Under the circumstances, it is not surprising that the terminology and procedures used for SEAs often have counterparts in the EIA literature, as shown in Box 1.

[9] This section is drawn largely from a background paper prepared by Ortolano (2005) as an input to this study.
[10] See, for example, Thérivel and Partidário (1996: 8-9).

Box 1.1. SEA Terminology and Procedures

- **Screening.** This activity is conducted to answer the following threshold question: For any particular policy, plan, or program, should an SEA be conducted? If the proposal has an environmental impact, then one moves to the next step.

- **Scoping.** Given the determination that an SEA must be conducted, what are the impacts that the SEA must assess? In other words, what is the scope of work (or "terms of reference") for the SEA? Typically, the scope of work of an SEA is determined by professional experts using their collective judgment, and in some jurisdictions the public is invited to participate in scoping.[a]

- **Identification, Prediction and Evaluation of Impacts**. The process of forecasting and evaluating impacts in an SEA can employ some of the same tools and procedures used in project-level EIA.[b] As in the case of EIA work, professional judgment often plays a major role. In contrast to EIA work, however, the need to trace indirect (or secondary) environmental effects can be expected to play a more dominant role in SEAs. This is because many policies, plans and programs subject to SEA are written to produce changes in economic and social effects, which can, in turn, produce significant indirect (and sometimes inadvertent) environmental effects. These interactions between economic, social, and environmental effects play a key role in "integrated assessments."

- **Mitigation.** The term "mitigation" is employed widely in both EIAs and SEAs. Mitigation measures are intended to avoid, reduce, or offset the adverse effects of an action, such as the decision to approve a policy or implement a plan.

- **Monitoring.** Programs to monitor the effects of a policy are often advocated because such monitoring can alert responsible authorities to the unintended outcomes that may be controlled using mitigation measures. Also, by comparing predicted outcomes with those observed via monitoring, analysts may be able to improve their ability to predict impacts in the future.

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[a] Canada's "Guidelines for Implementing the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals" offers the following general advice on what should be included in the scope of work:
"A strategic environmental assessment generally addresses the following five questions:

1. What are the potential direct and indirect outcomes of the proposal?
2. How do these outcomes interact with the environment?
3. What is the scope and nature of these environmental interactions?
4. Can the adverse environmental affects be mitigated?
5. Can positive environmental effects be enhanced?

What is the overall potential environmental effect of the proposal after opportunities for mitigation has been incorporated?" (Canadian Environmental Assessment Agency (2004: Section 2.3.)

[b] The International Association for Impact Assessment (IAIA) uses public participation as a performance criterion for characterizing a "good quality" SEA (IAIA, 2002). For a review of techniques used for predicting and evaluating impacts in the context of SEA, see Thérivel (2004: Chapter 8 and Appendix C).

Applications of SEA

Considerable experience exists in the application of SEA to programs and plans. In addition to national legislation, development agencies and requirements under their environmental assessment policies have often been drivers for SEA in developing countries.

For example, the World Bank's application of SEA initially arose directly from a policy requiring environmental assessment in all investment projects and providing for the use of sectoral or regional environmental assessment in specific contexts. In 1999, the requirement was extended to sectoral adjustment loans, for which SEA was often the tool of choice. There was a further evolution of the use of SEA as a broader strategic analytical tool when the World Bank Environment Strategy, approved by the Bank's Board of Directors in 2001, recognized SEA as a key means of integrating environment into the sectoral decisionmaking and planning process at early stages and made a strong commitment to promote the use of SEA as a tool for sustainable development. There are therefore many examples of SEAs linked with World Bank activities, including:

- The Argentina Flood Protection project: Program-level SEA assessed the cumulative effects of 50 individual flood protection subprojects in three river systems and identified the need for a component to improve coordination between cities and agencies in the flood plain. That provision was then included in the project.

- The recent Iran Energy-Environment Review:[11] Assessed current and future environmental priorities in the energy sector in terms of damage costs. Through detailed cost-benefit analysis and workshops, it is informing decisionmakers and in doing so providing input to Iran's forthcoming Four-Year Development Plan, as well as to the Bank's country assistance strategy.

- The ongoing SEA for Power Development Options in the Nile Equatorial Lakes Region: Incorporates a multi-criteria analysis methodology to screen power development options, cumulative impacts assessment, mitigation plans, and power system planning in order to define an indicative least-cost regional power master plan for the sub-region.

- The ongoing technical assistance for the SEA for the Palar Water Basin in Tamil Nadu, India: Is using both analytical and participatory processes to internalize environmental considerations in water resources planning in a Basin framework in order to frame a common development vision for the Basin.

A review is currently underway of lessons from previous SEAs.

[11] Energy-Environment Reviews are considered a form of SEA by the World Bank.

In addition to SEAs associated with Bank activities, there are many other examples of applications of SEA in developed and developing countries. A recent international review by Dalal-Clayton and Sadler (2004) shows the wealth of on-going activity on SEAs. There are also considerable efforts by different donors to harmonize approaches to SEA and to identify new opportunities for its application. The recent draft Good Practice Guidance on SEA from the OECD Development Assistance Committee is one such example.

The remainder of this report focuses specifically on the use of SEA as applied to the policy formulation and implementation process, which is a subset of applications on SEA.

Objective of the ESW

The main objective of this study is to review experience in SEA applied to policy formulation and suggest how to further improve its effectiveness in successfully integrating environmental sustainability dimensions in design and implementation of public policies.

Structure of this Report

First, Chapter 2 reviews current experience with application of SEAs to policies. Drawing upon six case studies of policy-based SEA in both developed and developing countries, as well as self-assessments by two developed countries of their policy-based SEA system, the study notes that the effectiveness of SEAs as applied has been somewhat limited in integrating environmental considerations into policy design and implementation.

Chapter 3 turns to an analysis of policy formulation models and management approaches that help understand the inherent ambiguity and uncertainty of the policy formulation process. Based on these models, Chapter 4 proposes a further evolution in policy-based SEA approach, which brings in the institutional and governance dimensions in addition to the technical dimension that is already so well covered in existing SEA methodology. This approach emphasizes a continuous process-based effort, comprised of certain key institutional aspects, in order to improve the likelihood of integrating environmental sustainability considerations into public policy formulation and implementation.

Finally, in Chapter 5, the report discusses the possible role of the Bank and other development partners in encouraging countries to move toward implementing this evolving approach to SEA, which involves strengthening key national institutional processes with the ultimate objective of improving the quality of growth and the quality of life through better governance.

Chapter 2
Experience with the Application of SEAs to Policies

This chapter reviews current experience in application of SEAs to policies. Drawing upon six case studies of policy-based SEA in both developed and developing countries, as well as self-assessments by two developed countries of their policy-based SEA system, an analysis is done on the level of influence of SEAs in integrating environmental considerations into the policies to which they have been applied.

2.1 Case Studies of Policy-Based SEA

Case studies provide a close look at policy-level SEA in practice, and a number of case studies have been conducted. The cases presented here are from countries in different stages of development, and are all drawn from cited studies.[12] First is a brief summary of each case study, and then a summary analysis of the following characteristics: extent to which the SEA process is integrated with the policymaking process; identification of key environmental priorities; level of intersectoral coordination; level of public involvement; level of influence of the SEA on the policy design, as well as on policy implementation; and the extent to which policy outcomes are monitored.

Slovak Republic: Energy Policy 2000

Under the Slovak EIA Law, which was implemented in 1994, environmental assessments are required for basic development policies in a number of sectors, including agriculture, energy, forestry, mining, transport, and water management.[13] The law requires the ministry designing a policy to prepare a draft that reflects environmental considerations, and then to inform the public of the draft policy at least two months before the Ministry of the Environment reviews it formally. The proposing ministry must then confer with the Ministry of Environment before submitting the policy for government approval. In this way, the proposing ministry is forced to consider impacts and mitigation measures.

Before conducting its SEA on the proposed energy policy established in 2000 (i.e., "Energy Policy 2000"), the government of the Slovak Republic had had prior experience in doing SEAs for energy policy.[14] That experience helped inform the SEA approach followed in 1998, when a new government called for a revision of the existing energy policy. The process for creating the new energy policy was initiated in 1999 and the associated SEA was carried out as part of the policy formulation process.

A key feature of the SEA process in the Slovak Republic is that it is indistinguishable from the policy design process. Thus when the Ministry of Economy was preparing its draft energy policy in 1999, it sent a preliminary draft to a range of stakeholders,

[12] This section is drawn mostly from Ortolano (2005).
[13] This section is based entirely on ERM (2004: 33-45).
[14] According to Dusik and Sadler (2004:91) "[a] precedent-setting element of the SEA for Slovak Energy Policy in 1997 was the conduct of transboundary consultations."

including NGOs, for comment. The Ministry incorporated the NGO comments into its draft Energy Policy 2000.

This integration of environmental consideration into policy design activities was carried out in eight steps:

1. Preparation of the draft policy
2. Public notification of preparation of policy
3. Formal consultations and public participation
4. Public hearing on the draft policy
5. Statement by the Ministry of Environment on the draft policy
6. Revision of draft policy
7. Adoption of final policy
8. Monitoring implementation of the policy (ERM, 2004: 35).

The full integration of SEA into the policy formulation process has been characterized as "probably the most important factor behind the effectiveness of Slovak SEAs" (ERM 2004: 44). At the same time, however, the lack of a distinct, structured "SEA process" has been criticized by ERM as being a departure from "SEA good practice." Associated criticisms of the SEA for Energy Policy 2000 are that results of the SEA process were not documented and that trade-offs were not analyzed (ERM 2004: 44).

Some degree of coordination between the proposing ministry (in this case, the Ministry of Economy) and the Ministry of Environment is built into the policy design process. This coordination occurred in the phase of policy formulation that required the Ministry of Environment to prepare a statement on the draft policy, as well as in the revision of the draft policy. In designing Energy Policy 2000, the Ministry of Economy revised its draft policy based on the conclusions of the SEA process. The proposing ministry is not obligated to accept the recommendations in the Ministry of Environment's statement; such revisions are made by "mutual consent." ERM (2004:44) characterized "improved inter-departmental government communications" as a positive "spin off" of the SEA process for Energy Policy 2000.

Public involvement was a hallmark of the SEA for the Slovak Republic's Energy Policy 2000. The SEA provided a vehicle for mobilizing NGOs interested in energy and for raising public awareness of important energy-environment relationships. The Ministry of Economy circulated a preliminary draft to NGOs for comment prior to finalizing its draft policy. Then the public was notified of the draft policy via newspaper announcements in addition to it being made available on several government, university and NGO websites. Media coverage was extensive and the draft policy was also made available at district and regional offices of government agencies and at eleven information kiosks at squares of seven towns in Slovakia through an NGO. The public had two months to offer comments to the Ministry of Environment. As a result, the Ministry of Environment received hundreds of comments.

NGOs organized themselves under an umbrella organization, "Energy 2000," and they formulated their own proposed energy policy called the "New Energy Policy of the

Slovak Republic." This policy, which was discussed extensively, was posted on the websites of government agencies and NGOs. In addition, Energy 2000 organized an international conference at which both the "New Energy Policy" and the Ministry of Economy's draft policy were debated.

After consultation with NGOs regarding the scope and structure of a public hearing on the government's draft policy and the New Energy Policy, the Ministries of Environment and Economy held a hearing. About 150 people participated in the one-day meeting. The transcript of the hearing, together with several hundred public comments and government consultations with experts formed a basis for the Ministry of Environment's formal statement, which was made available to the public on request.

The SEA process yielded many modifications to the government's draft energy policy. For example, the government's draft was changed to encourage the diversification of energy sources and the "de-monopolization" and decentralization of the energy sector. As another example, the policy included a government commitment to create programs for cutting energy intensity, supporting R&D for alternative energy sources, and promoting fuel security and energy savings.

A limitation of the SEA was that it focused narrowly on a subset of environmental issues. It excluded many important subjects, such as effects of the energy policy on air quality and human health.

There is no legal requirement for monitoring environmental impacts of implementing Energy Policy 2000. However, the Ministry of Economy has committed to a monitoring program. Although monitoring outcomes had not been reported as of 2004, monitoring was being conducted by "responsible government bodies" (M. Kozova, personal communication reported by ERM, 2004: 40). In addition, monitoring was being conducted by several NGOs, including Greenpeace Slovakia and Energy 2000.

Furthermore, according to Kozova (personal communication reported by ERM, 2004: 40) the commitments made in the SEA have been delivered by the government. No further information is available on whether all or some of the policy commitments have been implemented and therefore analysis of this is currently not possible.

Argentina: SEA for Policy Reform in Water and Sanitation Sectors

During the late 1990s, the Government of Argentina requested World Bank assistance to further expand earlier reforms to the water and sanitation sectors in Argentina.[15] "The proposal concerned policy reforms relevant to water and sanitation in medium-size cities and emerging issues related to earlier policy reforms in larger cities. In keeping with the World Bank's *Operational Policy 4.01 – Environmental Assessment*, the World Bank requested the Government prepare an environmental assessment for what was officially termed the "Argentina Water Sector Reform Project."[16] The proposed Project included

[15] This section is based on Sanchez-Triana and Enriquez (2005).
[16] In this context, a "project" consists of a set of policy reforms for the water and sanitation sectors.

policy reforms as well as measures to finance public works projects, such as municipal water and wastewater treatment facilities. The Government hired an SEA consultant team with expertise in the water and sanitation sectors, engineering, economics, and sociology to elaborate an SEA in a three-month period. The government asked the consultants to consider reforms that would enhance environmental regulations, remedy institutional weaknesses linked to environmental management, develop criteria and methods for environmental analysis within the sectors, and define environmental requirements and responsibilities for private utilities participating in the sectors. They focused on linkages between the environment and the water and sanitation sectors. The terms of reference for the SEA were prepared jointly by the Water Resources Agency in the Ministry of Economy and the Environment Agency.

The initial terms of reference (TOR) prepared for the SEA focused on a typical EIA approach. However, it soon became apparent that it was not feasible to identify impacts from reforms that had still not been designed. So the consultants were asked by the government to focus on priorities in the water supply and sanitation sector based on quantitative analysis, such as cost of degradation studies. The consultants identified three types of negative externalities, which were quantifiable and expected to be significant.[17] One priority concerned the waste of water linked to inefficiencies within the water sector, such as water leakages in treatment plants and distribution systems. A second priority concerned water quality deterioration, such as the degradation caused by inadequate municipal and industrial wastewater treatment and inadequate methods of urban solid waste disposal. The third priority concerned adverse environmental effects linked to the construction and maintenance of water and sanitation facilities; examples of such effects include noise and odors.

Another distinguishing feature of this SEA is that it was viewed as part of a much broader, continuing policy dialogue in the water and sanitation sector between World Bank staff and government officials in Argentina. The assessment process helped decisionmakers in Argentina move from a narrow focus on the environmental impacts of individual projects to a broader concern with sector-level priorities and environmental management issues that could only be addressed by means of policy reform.

The SEA was well integrated into the process of designing sector reforms in the sense that the consultants interacted on several occasions with relevant policy-design authorities in Argentina, particularly the Ministry of Economy, in both conducting their study and reporting their results. Moreover, the SEA was created during the earliest stages of preparation of the Water Sector Reform Project. In addition to these interactions, the consultants conducted an institutional study in the form of an evaluation of the regulatory and organizational factors contributing to inefficiencies in water use, degradation of water resources, and impacts associated with treatment plants and other civil works in the water and sanitation sectors. The process of conducting this institutional study allowed the SEA team to become very familiar with the local context and institutions in Argentina.

[17] A standard definition of a negative externality follows: a cost that one economic agent imposes on another without accounting for that cost in making decisions.

The government and the SEA consultants paid much attention to the perceptions of multiple stakeholders. In framing their analysis, government officials, Bank task team members, and the SEA consultants visited several cities and requested information from various local water authorities, water operators, and other stakeholders. These field visits, along with several workshops, were crucial in determining regulatory issues that blocked the expansion of water service provision and the involvement of the private water operators. The team visited some of the poorest neighborhoods, such as in *Comodoro Rivadavia* and in *Campana,* in order to deliberately highlight the needs of vulnerable populations because of the Bank's poverty reduction mandate.

The SEA influenced the nature of the Water Sector Reform Project in that the assessment recommended many loan conditions that were incorporated into the final policy reform arrangements between the World Bank and the government of Argentina. An environmental institution-building component was included in the final design of the project, and it represented about 2 percent of the total cost of the project. Among other things, the environmental elements of the project would finance the updating of environmental standards, the preparation of EIA guidelines, and the enhancement of institutional capacity to manage watersheds and avoid conflicts among stakeholders. In addition, the SEA recommended that the project include institutional reforms and environmental clauses that clearly defined the environmental obligations of local government authorities and utility operators.

Monitoring of policy outcomes is a routine aspect of World Bank policy-based loans. Interestingly, the SEA was quite deliberate in including in its recommendations, measures that would provide the basis for continual policy development and evaluation of progress. In particular, the SEA recommended information-gathering measures to overcome the absence of dependable data on the quality of water resources, sources of pollution, and various environmental indicators. These information generation mechanisms were intended to be used in determining whether sector priorities identified by the environmental assessment were being addressed over time.

Notwithstanding the high degree of SEA integration into the policymaking process and the strong influence of SEA on the final version of the Reform Project, the institutional reforms from the SEA that were a part of the project have still not been implemented under the project.

Colombia: SEA for Policy Reform in Water and Sanitation Sectors

The SEA exercise above was repeated a few years later for the World Bank's "Water Sector Reform Assistance Project" in Colombia.[18] In this case, the SEA was lead by the Ministry of Development, with the assistance of a group of consultants with backgrounds in economics, engineering, and law. The TOR for this SEA were prepared by an interdisciplinary group consisting of specialists from the Department of National

[18] This section is based on Sanchez-Triana and Enriquez (2005).

Planning, the Ministry of Environment, and the Ministry of Development, with assistance from the Bank task team.

This TOR used the previously described Argentina SEA as a starting point in designing the scope of the work. Not surprisingly, there are many similarities in the two SEAs. The TOR requested the consultants quantify negative externalities as in the Argentina case, namely deterioration of water quality, inefficient water use, and impacts associated with the construction and maintenance of public works. Deterioration of water resources was identified as the first priority, due to its significant impacts on human health that included diarrheal illnesses estimated to represent a cost of US$315–400 million per year. A particularly significant finding related to priority setting was that environmental regulations constitute a barrier to expansion of basic water and sanitation services by the private utilities, and this barrier has had significant adverse effects on human health.

As in the case of the above-described Argentina SEA , the one for Colombia was integrated into the process of designing sector reforms. The SEA consultants interacted with relevant authorities in Colombia, particularly the Ministry of Economic Development and the Ministry of Environment. In addition, the SEA was initiated early in the process of developing the Water Sector Reform Assistance Project. In conducting an institutional analysis of the environmental management strategies used in the water and sanitation sectors, the consultants became familiar with the local context and the principal actors in the policymaking process.

Coordination between the Ministry of Economic Development and the Ministry of Environment was greatly facilitated by the SEA process. At the outset, only the Ministry of Economic Development favored the SEA and the inclusion of its recommendations in the Water Sector Reform Assistance Project. In contrast, the Ministry of Environment seemed intent on protecting its own turf at the outset. However, the Ministry of Environment eventually saw advantages in cooperating and an interagency committee was formed to facilitate joint work on environmental management issues in the water and sanitation sector.

Public involvement played a featured role in this SEA. Early in the process, a nationwide workshop was held to obtain the opinions of stakeholders on the scope of the environmental assessment. In later stages of the work, a second nationwide workshop was held. In this case, the workshop was used to present a preliminary draft of the final SEA report and to obtain additional comments for stakeholders. In addition to these workshops, the Ministry of Economic Development and the Ministry of Environment consulted with a number of government agencies, NGOs, private utility operators, and professional associations, among others.

The SEA developed many recommendations intended to reform aspects of both the effluent charge system and the wastewater discharge standards used in Colombia. These recommendations were intended to attract private investment to the water sector by reducing uncertainty associated with environmental controls. In addition, the SEA recommended changes intended to reform Colombia’s EIA regulations. Among these

were provisions for guaranteeing adequate public participation in the EIA process. Finally, the SEA defined the environmental obligations of local authorities and utility operators. Recommendations for capacity building and institutional strengthening for environmental management were important parts of the SEA. These recommendations targeted the Ministry of Economic Development because it was the leading government authority in the water and sanitation sectors. Municipalities and utility operators were also identified as organizations that needed to build capacity to implement environmental management efforts. In the final analysis, the Water Sector Reform Assistance Project in the Colombia included an environmental component with a budget representing about 1.1 percent of the total cost of the reform effort. As a result of the SEA process, the Ministry of Economic Development and the Ministry of Environment were able to agree on strategies for implementing jointly some of the SEA's recommendations in the final agreement with the World Bank.

As mentioned, monitoring of policy reform outcomes is routine for World Bank policy-based loans. As with the Argentina case, however, the record is not very good with respect to policy implementation. In this instance, regulatory modifications made in response to recommendations in the SEA were superficial because those who benefited from the existing system resisted the recommended reforms intended to reduce barriers to private investment in the water and sanitation sectors. In response to these outcomes, the World Bank continues to have a dialogue with the Colombian authorities on water quality and quantity problems that have not yet been addressed in a satisfactory manner. In this sense, the process of monitoring policy outcomes has contributed to organizational learning on the part of both the World Bank and the Colombian government.

Canada: SEA for NAFTA

Canada is among the relatively few countries that have embraced SEA at the policy level. A 1990 Cabinet directive requires SEAs for proposed policies, plans, and programs before those proposals are brought before the Cabinet for decisionmaking. Since 1990, the government has issued a number of guidance documents and established a well-defined process for implementing the Cabinet directive.[19]

A few years before the first (1993) guidelines implementing the Cabinet directive were issued, the Canadian government undertook a major policy-level SEA for the North American Free Trade Agreement (NAFTA). That SEA, which has been well documented, demonstrates SEA in the context of a high profile policy proposal in an industrialized country.[20] The NAFTA negotiations took place between June 1991 and August 1992, and the final draft SEA was published in October 1992, the same month in which the text of NAFTA was initialed by the trade negotiators for Canada, Mexico, and the United States. Initialing enabled each of the three countries to begin the process of working toward domestic approval of the draft treaty.

[19] For a summary of the history of the SEA program under the Cabinet Directive, see Hazell and Benevides (2000).

[20] The literature on the Canadian SEA for NAFTA includes ERM (2004), Hazell and Benevides (2000) and Shuttleworth and Howell (2000).

The Canadian SEA for NAFTA did not reflect an effort to fully integrate activities related to SEA into the process of drafting NAFTA because the SEA was conducted after the negotiations had started. (Current Canadian practice on environmental reviews for treaties requires commencement of the review process either before or, at the latest, the very beginning of negotiations.[21]) The production of an SEA report was only one element of the process of integrating environmental considerations into the design of NAFTA, and it came as the last step in a "four point plan."[22] The other three steps played a more significant role in bringing environmental concerns into the treaty design process.

The four-point plan included the following:

1. Environmental representatives were appointed to the International Trade Advisory Committee (ITAC) and each of the fifteen Sectoral Advisory Groups on International Trade (SAGIT).
2. Trade-related environmental concerns were included as integral components of all phases of the negotiation for NAFTA.
3. Parallel discussions were initiated on environmental cooperation among Canada, the United States and Mexico.
4. An SEA was conducted for NAFTA by the NAFTA Environmental Review Committee. The process included explicit provisions for coordination among agencies.

The NAFTA Environmental Review Committee included representatives from numerous federal departments, including: Foreign Affairs and International Trade (DFAIT); Agriculture; Energy, Mines, and Resources; Environment; Finance; Fisheries and Oceans; Industry, Science, and Technology; and Transport. The Department of the Environment created a "technical expert advisory committee" to provide support for the NAFTA Environmental Review Committee.[23] As the responsible department, DFAIT established and led the Committee.

The principal mechanisms for public involvement consisted of ITAC and SAGITs, inasmuch as members of these committees included representatives of "business, environment, labor and academic sector," and results of consultations with ITAC and SAGITs were "reported directly to the Trade Minister" (Hazell and Benevides 2000:63). In addition, in February 1992, chairs of ITAC and SAGITs, along with environmental representatives and the senior Canadian negotiation team for NAFTA met to discuss environmental issues. A similar group met in April 1992 for a workshop on trade and environment.[24]

In carrying out its work, the NAFTA Environmental Review Committee consulted with Canadian negotiating team members and various advisory groups (i.e., ITAC and SAGITs), and it interacted with provincial officials. The Committee also held several

[21] Shuttleworth, J., personal communication with Leonard Ortolano via email, June 17, 2005.
[22] Information on the four point plan is from ERM (2005:10).
[23] Information in this paragraph is from Hazell and Benevides (1996:55).
[24] Information in this paragraph is from Hazell and Benevides (2000:63).

workshops for environmental groups. Moreover, there was an extensive stakeholder consultation process involving government ministers, environment agencies, and university faculty members.[25]

The general public's participation in the treaty-making process was limited. As a consequence of the aforementioned April 1992 workshop, it was agreed that the terms of reference for the Canadian NAFTA SEA would be made available to the public. Individual citizens submitted commentary in the form of letters.[26]

The SEA document focused on the following four issues:

1. Environmental Provisions – Would the provisions in NAFTA ensure that governments in Canada could select levels of environmental protection consistent with Canadian conditions and priorities?[27]
2. Environmental Screening – How would the NAFTA-related changes in the volume and location of goods and services traded in North America impact Canada's air, water, land, and natural resources?
3. Industry Migration – Would industry migrate from Canada to Mexico as a result of perceived advantages of operating in a country that industry believed had lower environmental standards and less stringent enforcement of pollution laws?
4. Follow-up Mechanisms – Do mechanisms exist to ensure that there is appropriate follow-up to NAFTA related to environmental co-operation?

According to Jaye Shuttleworth, Director of the Environmental Policies and Sustainable Development Strategies Division of Foreign Affairs Canada, one of the primary concerns of the Canadian environmental review of NAFTA was to assess whether treaty ratification would diminish Canada's ability to regulate for environmental quality.[28] The environmental review concluded that NAFTA included several chapters that would ensure that Canada's ability to regulate environmental quality would not be diminished.

Specific treaty provisions include the following:[29]

- "Chapter 7 (Sanitary and Phytosanitary Measures) permits NAFTA countries to take measures they consider appropriate to protect human, animal, and plant life or health within their respective territories.
- Chapter 9 (Standards-Related Measures) explicitly protects the rights of Canada's federal, provincial and local governments to determine the level of environmental protection that they consider appropriate for their own circumstances.

[25] ERM (2005: Appendix B, 3).
[26] This paragraph is based on Hazell and Benevides (2000:63) and ERM (2005:Appendix B.3).
[27] The subject of "environmental standards" was of particular interest. Issues included the right of federal and provincial governments to regulate, the right to adopt more stringent standards, and the right to choose the level of environmental protection. Standards harmonization, enhancement, and enforcement were also examined.
[28] From Shuttleworth, J., "Building on Experiences and Addressing Challenges" presented at the Theme Forum on Ethics and Quality in Trade Impact Assessment, 25th Annual Conference of the International Association for Impact Assessment, Cambridge, MA, May 31-June 3, 2005.
[29] The chapter summaries below are from Annex A, Executive Summary of the "North American Free Trade Agreement: Canadian Environmental Review."

- Chapter 11 (Investment) recognizes that NAFTA countries should not lower health, safety or environmental standards for the purpose of attracting an investment. These are important precedent-setting principles"[30]

Available documentation does not allow for disentangling the different factors that led to specific environmental provisions in NAFTA and the environmental side-agreements to NAFTA. There is no doubt that NAFTA's negotiators considered environmental concerns and that the NAFTA Environmental Review Committee played a role in raising environmental concerns with the Canadian negotiators. However, preparation of the SEA document was only one part of a four part plan to integrate environmental concerns into the treaty design process. Moreover, there is no evidence available to link a particular provision in NAFTA or the environmental side-agreement to the process of producing the SEA document: North American Free Trade Agreement: Canadian Environmental Review.

Environmental issues were important in the creation of NAFTA, and thus it is no surprise that provisions were made to monitor policy outcomes linked to the environment. For example, a Committee on Standards-Related Measures was created to enhance environmental standards and cooperation among member states. As another example, the North American Commission on Environmental Co-operation was created to facilitate cooperation among the three signatories to NAFTA. The Commission has a mandate to assess the ongoing impacts of NAFTA implementation.

Czech Republic: Tourism Policy and Sectoral Operational Program

In 1992, the government of the Czech Republic enacted the Czech Environmental Impact Assessment Act (No.244/1992).[31] Section 14 of the Act set out provisions for policy-level SEA by requiring an environmental assessment for "development concepts" submitted to or approved by central administrative authorities in several sectors, including tourism.[32] The term "concept" was not defined in the Act or in subsequent legislation, but it is widely understood to refer to strategies, policies, plans, and programs.

Procedures under Section 14 are supposed to be implemented as follows. The proponent of a development concept must prepare SEA documentation, which includes elements typical of those contained in project-level EIAs. The proposed concept and the associated SEA documentation are then to be subject to public review for at least 60 days. Detailed arrangements for this review are to be determined jointly by the proponent and the Ministry of Environment. Following the public review, the proponent must forward those comments along with the concept and the SEA documentation to the Ministry of

[30] These three chapter summaries are from the Executive Summary of the "North American Free Trade Agreement: Canadian Environmental Review." Chapter 11 includes provisions that go beyond those mentioned in this summary statement.

[31] General information on SEA in the Czech Republic in this paragraph and the two that follow is from Machac, M.D., Rimmel, V. and L. Zenaty (2000), and from Dusik, J., personal communication via e-mail to L. Ortolano, June 1, 2005.

[32] The sectors include agriculture, energy, mining and processing of minerals, recreation and tourism, transport, and waste management.

Environment, which then has 30 days to issue an "SEA standpoint." Although conditions in the SEA standpoint are not binding on the proponent, a concept cannot be approved by the government unless it is accompanied by a standpoint.

Prior to 1997, practical application of SEA in the Czech Republic was quite limited. Indeed, some central governmental organizations adopted strategies to evade the SEA requirements by changing the names of documents so they would not be viewed as "concepts" that would trigger SEA requirements under Section 14 of the Czech EIA Act. The absence of an unambiguous, legal definition of the term "concept" together with the paucity of state plans, programs and policies in the early stages of the post-socialist reform period contributed to the limited number of SEAs conducted through the mid-1990s.[33] These factors, together with early experiences by some ministries in trying to conduct SEAs, led to efforts in 1998 to try to amend the Act. The case study below, which concerns the tourism sector, highlights some of the challenges in conducting SEAs in a political context in which the level of coordination between sectoral ministries is not strong and ministries have not embraced SEA.

The Ministry for Regional Development in the Czech Republic developed Czech Tourism Policy 2000. Even though the policy had not been the subject of an SEA, as required by Section 14 of the EIA Act, the policy received preliminary approval by the government. Soon thereafter, the Ministry created its draft "Sectoral Operational Program for Tourism and the Spa Industry" (hereinafter referred to as "SOP"), and like Tourism Policy 2000, it was also created in the absence of an SEA, even though one was required. SEA requirements for the tourism policy were contained in a Czech law, and SEA requirements for the SOP, which was part of the EU Structural Funds Program, were laid out in an EU directive. The Ministry of Regional Development eventually engaged consultants to conduct SEAs for both the tourism policy and the SOP, but this took place because the Ministry of the Environment advised the government that SEAs were required.[34]

The SEAs for the tourism policy and SOP reflect a situation in which the integration of SEA into policymaking took place relatively late in the policy design process. The policy proponent, the Ministry of Regional Development, was initially unenthusiastic about the SEA work. The Ministry feared that excessive time and bureaucratic hurdles would be added to the process.

The Ministry of Regional Development's lack of eagerness to have the SEAs conducted is clearly reflected in the Ministry of Environment's need to formally intervene in order to have the SEAs performed and in the delay of several months in starting the SEAs because of "discussions" that took place between the two Ministries.

[33] Based on experience with socialist planning, there was a widely held view in the Czech Republic that state plans and programs were an inappropriate form of intervention into an emerging market economy. Dusik, J., personal communication via e-mail to L. Ortolano, June 1, 2005.

[34] The assessment for the SOP was prepared by Tichá, Dusik and Sulcova (2001).

The Ministry of Regional Development was not unique in its reluctance to embrace SEA. In commenting on difficulties in implementing SEA under the Czech EIA Act in the 1990s, Machac, Rimmel, and Zenaty (2000:88) characterize the level of "political will" as "unsatisfactory" and noted that the "level of communication between ministries and inside the MoE (Ministry of Environment) particularly is weak."

One of the unexpected positive outcomes of the SEA process for tourism and SOP is that the Ministry of Regional Development changed its attitude toward SEA and, in the end, became quite enthusiastic about the process.[35] This change came about largely as a result of the several interactions between the SEA consultants and the staff of the Ministry. Interactions between the Ministry of Regional Development and the SEA team took place after each of four stages in the SEA study:

1. Review of key tourism issues
2. Assessment of proposed goals for environmental protection
3. Assessment of proposed measures and activities
4. Assessment of proposed implementation and recommendations for monitoring.

Results from the last three stages of the SEA work were used in modifying the tourism policy and the draft SOP.

In order to appreciate the nature of the interactions that took place, it is useful to consider how the SEA process unfolded. In the normal course of events, an SEA would have been conducted for the tourism policy and the final tourism policy would have provided a basis for the SOP, which would have had its own SEA. The process followed in this case was different. Once the tourism policy was practically in final form, having received preliminary government approval, the SOP was drafted. At that point, the Ministry of Environment intervened, and consultants were engaged to prepare SEAs.[36] The SEA documents were produced by a three-person team of consultants. The team first worked for 70-person days on the SEA for the SOP; it then worked for an additional 12 to 15 person days to produce the SEA for the tourism policy. The SEA for the tourism policy was produced relatively quickly because of experience gained (e.g., in establishing an overall methodological approach) in preparing the SEA for the SOP. Moreover, by the time the SEA for tourism policy was initiated, the SEA consultants had established a solid working relationship with staff from the Ministry of Regional Development who were responsible for creating the tourism policy and SOP.

The SEAs were conducted by technical experts, but the general public had opportunities to participate in each of the SEA processes. Public involvement for the SOP was conducted in the context of five public workshops held in different regions of the Czech Republic. Over 100 people attended these workshops. The business community, municipalities, and district authorities were the main participants in the workshops, and their comments on the SOP were quite positive.

[35] Dusik, J. personal communication via e-mail to L. Ortolano, June 1, 2005.
[36] Information in the remainder of this paragraph is from Dusik, J., personal communication via e-mail with L. Ortolano, May 25, 2005.

The SEA for the tourism policy also contained an element of public involvement. It consisted of a national public hearing. About 30 people attended and they offered positive comments on the policy.

After the SEA team had completed its work assessing the strategic goals set out in the tourism policy and draft SOP, the team met with 15 representatives of different departments within the Ministry of Regional Development. The SEA team's recommendations for changes in the goals section of the SOP were considered seriously by the Ministry, and they were the subject of extensive debate between Ministry staff and the SEA team. Whereas the goals in the draft SOP made reference to the Czech Republic's State Policy on the Environment, the SEA team recommended that the goals be based on "10 strategic targets of the protection of environment for sustainable development of tourism," which also embraced recommendations of various United Nation reports on environmentally sustainable tourism.[37] After two days of meetings, the SEA team's recommendations for changes in the goals section of the draft SOP were accepted. This activity was eventually repeated for the tourism policy, and in that case, the Ministry of Regional Development was more open to the recommended changes.

The next occasion for influencing policy took place after the SEA team completed its assessment of the proposed "measures and activities" contained in the tourism policy and draft SOP. To complete this work, the SEA team projected impacts (based largely on professional judgment) and proposed modifications to the tourism policy and SOP to avoid or mitigate those impacts. In meetings involving the draft SOP, Ministry staff discussed the SEA team's judgments regarding impacts, and the proposed measures and activities were debated over a 3-4 day period. Eventually, many of the SEA team's recommendations were accepted. At a later time, changes in the tourism policy were discussed and agreed upon in less than a day.

The final set of interactions between the SEA team and the Ministry of Regional Development concerned the team's recommendations for implementation and monitoring. The SEA team emphasized the importance of consistency between the tourism policy and the SOP. Also, at this stage, a workshop was held to create indicators to be used in monitoring progress in meeting environmental goals. The Ministry agreed to implement a monitoring plan but did not follow up (as of September 2004).

The SEAs for the SOP and tourism policy were conducted after the Ministry of Regional Development had, in its own view, completed the bulk of its policy design work, but the SEA processes led to a number of notable changes in both the SOP and the tourism policy. Jiri Dusik, who was part of the SEA team, explains this result in terms of how the SEA process was structured and how the team's sometimes vigorous debates with staff of the Ministry of Regional Development were facilitated.[38]

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[37] Quoted material is from Tichá, Dusik and Súlcová (2001), and an example of the type of report mentioned is United Nations (1999).

[38] The remainder of this subsection is based on Dusik, J., personal communication via e-mail to L. Ortolano, May 25, 2005. Another explanatory factor, which Dusik considers as relatively minor, is that the potential for finding mutually supportive linkages between tourism development and environmental

Little can be said about the influence of SEAs on monitoring policy outcomes. The SEA team recommended a program for monitoring and the Ministry of Regional Development accepted it. However (as of September 2004), the monitoring program had not been implemented. Given the lack of monitoring, it is also difficult to assess the level of implementation of the SEA recommendations in the policy.

South Africa: KwaZulu-Natal Trade and Industry Policy

In South Africa, the Development Facilitation Act, which was passed in 1995, provided legal foundations for addressing environmental concerns in the context of spatial planning in South Africa. Although the Act emphasizes community empowerment and focuses on land development objectives, it does not require SEAs. Notwithstanding the absence of a legal mandate, several jurisdictions within South Africa have voluntarily undertaken SEAs as part of their spatial planning processes (Wiseman 2000).

Passage of the 1998 National Environmental Management Act enabled the Department of Environment and Tourism to issue guidelines for 'Integrated Environmental Management," and SEA has become a popular tool for implementing this management approach, particularly in the context of spatial planning (ERM, 2004:47).[39] The Council of Scientific and Industrial Research (CSIR), in partnership with the Department of Environment and Tourism, issued a "guideline document" in 2000 entitled *Strategic Environmental Assessment in South Africa*. CSIR is a key source of SEA expertise in South Africa and its staff has conducted a number of SEAs.

An example of a policy-level SEA conducted in the context of spatial planning in South Africa is the SEA commissioned by the KwaZulu-Natal Regional Economic Forum in 1996. In response to the Development Facilitation Act of 1995, the Regional Economic Forum asked CSIR to prepare an SEA that could provide input into its process for creating the trade and industry policy for the KwaZulu-Natal region. The Forum, which consisted of representatives of regional government, industry, and NGOs, was responsible for creating the region's trade and industrial development policy (Wiseman 2000:159-160). According to the former head of the Forum (Coleman, as quoted by ERM, 2004:47), the Forum wanted a framework and data regarding what types of development would be possible "before looking at what type of development could and should be recommended."

The SEA process was completed before the policymaking process started. Moreover, "it is not clear how the SEA was integrated into policy, if at all" (Wiseman 2000:161). And given that the SEA was an input into a subsequent policy design process, it had no

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protection makes it possible to identify actions that advance tourism while protecting the environment. This contrasts with the energy and transport sectors, where it is more difficult to find such mutually supportive linkages.

[39] For an assessment of shortcomings of the National Environmental Management Act, see Roussouw and Wiseman (2004:133). One of the shortcomings they highlight is the lack of consultation with local government and civil society in the design and implementation of the Act.

bearing on either the monitoring of policy outputs or inter-sectoral coordination. The one clear link between the SEA and the policymaking process is that it was commissioned by the Regional Development Forum, and the SEA consultants at CSIR had some interactions with the Forum.

Apart from two stakeholder conferences involving members of the Regional Economic Forum, CSIR and its subcontractors conducted the SEA on their own. The SEA was "mainly an analytical exercise, based on the spatial resources baseline [i.e., data embedded in a geographic information system] overlaid with possible future industrial development scenario impacts" [ERM, 2004:46]. The exercise was conducted during a six-month period in 1996, the same year in which the Forum created its trade and industrial development policy.

The process employed by CSIR started with a set of technical studies, which was soon followed by a stakeholder workshop in which key environmental issues were identified. The SEA team then identified three "assessment criteria" which were used in subsequent stages of the study. One criterion concerned the degree to which an industrial development scenario (e.g., a scenario emphasizing sugar production) would lead to waste emissions in excess of "assimilative capacity." A second criterion concerned demands of the proposed scenario on use of natural resources. The third and final criterion centered on the suitability of particular land areas for various types of industry. Even though the Forum would eventually create a policy of trade and industrial development, trade was largely ignored in the SEA.

The final stage of the SEA involved an application of the three assessment criteria to classify the environmental issues and baseline conditions as strengths, weaknesses, opportunities, or threats in the context of particular industrial development scenarios. Thus, for example, the CSIR team found that if the sugar industry were developed, it would have certain strengths and weaknesses and it would also provide particular opportunities and pose specific threats. The overall output of the SEA consisted of information on how the baseline environmental conditions and issues constrained development and how particular development scenarios would affect the environment.

After the CSIR team conducted its analytic work, a second stakeholder meeting was held. Forum members had the opportunity to comment on the results and CSIR made subsequent adjustments in response to comments. As mentioned, no apparent causal link exists between the SEA and the eventual trade and industrial policy issued by the Forum. However, the industrial development sectors "highlighted for development" in the KwaZulu-Natal Trade and Industrial Development Policy "were in agreement with findings of the SEA" (Coleman, as quoted by ERM, 2004:51).

Analysis of Case Study SEAs

Results from the six case studies can be analyzed collectively by classifying the cases by the way in which the SEA study was integrated into the policy design process. The following four categories are employed:

1. Complete Integration. The environmental (or SEA) experts are a part of the policy design group, and there is no clear distinction between policymaking and SEA; policy design and SEA are integrated into a single process. The Slovak Republic's energy policy SEA is in this category.[40]
2. Partial Integration – Simultaneous Effort. The SEA experts are assembled as a team that is distinct from the policymaking body, but the team works cooperatively with the policymaking group, and there are multiple points of contact during the policymaking process. The SEAs for the water and sanitation sectors in Argentina and Colombia are in this category.
3. Partial Integration – Late Stage Effort. The SEA team conducts its work in response to a draft policy proposal. There may be multiple points of contact between the SEA experts and the policymaking body, but those interactions occur relatively late in the policy-design process. This category includes the SEA case studies involving Canada and the Czech Republic.
4. Discrete Point Integration – Technical Support. The SEA is conducted primarily to provide technical information to support the policy-design process. In this instance, the integration occurs at a discrete point in the policy-design process. This category includes the South African case study.

Table 2.1 characterizes the outcomes of the six cases. Table entries are intended to reflect only general tendencies because available case study documentation does not permit a more complete characterization.

Table 2.1: Characteristics of the Six SEA Case Studies

Type of integration	**Complete**	**Partial – simultaneous effort**		**Partial – late stage effort**		**Discrete technical support**
Case study country	*Slovak Republic*	*Argentina*	*Colombia*	*Canada*	*Czech Republic*	*South Africa*
Inter-sectoral coordination	√	√	√	√	√	0
Public involvement	√	√	√	√	√	0
Consideration of key environmental priorities	?	√	√	?	?	?
Influence on policy design	√	√	√	?	√	?
Influence on monitoring	√	√	√	?	?	0
Influence on policy implementation	?	?	?	?	?	?

[40] The concept of full integration of SEA into the making of plans and programs has been employed by others, see, e.g., Dusik and Kosikova (1993), and United Nations (2004).

Notwithstanding its approximate nature, Table 2.1 suggests the following:

1. While an SEA that is completely integrated into policymaking can be expected to influence policy design, partially integrated SEAs, as illustrated by the Czech Republic case study, can also affect policy design. Interestingly, in the case of Colombia, despite partial integration, the political economy implications of policy changes have been so strong, that the recommendations have only been incorporated in a partial manner. The available case study documentation does not permit any evaluation of the importance of this influence or whether it is the key environmental priorities that are being influenced. For example, health impacts and air quality impacts were not assessed in the case of the Slovak Republic, and it is unclear whether these are the key priorities or the ones that were included in the policy.
2. Five of the six SEAs had positive effects on inter-sectoral coordination; the one SEA with no discernable effect on coordination was the one in the discrete point – technical support category of integration. The influence of an SEA on inter-sectoral coordination depended upon how the SEA process was structured. In any particular case, key factors involved whether opportunities were created for the SEA team to interact with technical experts in various agencies and with those involved with drafting the policy.
3. The degree of public involvement was highly variable, and this reflects the strikingly different political and cultural contexts in which the SEAs were conducted.
4. The influence of SEA on monitoring is difficult to characterize beyond observing that the discrete point – technical support SEA had no effects on monitoring. It does not appear that the two SEAs in the partial integration – late stage effort had an effect on monitoring, but information needed to verify this is not available.
5. Information to assess the influence of the SEA beyond the policy design phase, i.e., on policy implementation is difficult to assess in four out of the six cases. Up to this point in time in the Argentina case (where there is routine monitoring), there has been partial progress on implementation, despite including some SEA recommendations in the policy design.

Two other observations can be made on the basis of the case studies summarized herein. First, as was the case for the Slovak Republic SEA, cases in the full integration category may be criticized for not producing a discrete SEA report and for unintentionally masking the environmental tradeoffs made when alternatives are compared. This masking can occur because there may not be a separate forum for discourse on the environmental advantages and disadvantages of alternative policies.

A second observation concerns the potential for cases in the partial integration – late stage effort category to prolong the planning process and be viewed by policy designers as a bureaucratic hindrance. This occurred in the Czech Republic SEA. In particular, the policy designers at the Ministry of Regional Development felt the SEA had the potential

to stall the policy design process excessively. Their hope was that the SEA could be finished in two to three weeks.[41]

2.2 Policy-based SEA Systems in OECD Countries

In this section, two advanced SEA systems in Canada and the Netherlands are analyzed, extracting lessons with respect to the practice of conducting SEAs of policies in these countries, as well as the level of influence of these SEAs on the policies themselves.

A number of countries, such as Canada, Denmark, New Zealand, and the Netherlands have implemented procedures to incorporate environmental consideration into the design of public policies. Table 2.2 provides some examples. In developing countries, it appears that in some cases legislation for SEA of policies does exist, however implementation is rare. In more recent examples, such as in the case of China, there is explicit reference to SEA of plans of programs, but policies are excluded. The recent EU Directive on SEA similarly makes a distinction between SEA for programs and plans, which are included, and SEA of policies, which are not mentioned.

Table 2.2 Examples of Countries that have Adopted SEA for Policies

Country	SEA Instrument
The Netherlands	Environmental Test (E-Test)
Canada	Combination of policy Policy Impact Assessment: process to appraise environmental effects of policies. (CEAA 2000, p.3)
Denmark	Policy-based: SEA of government bills and other proposals that are likely to have significant impacts on the environment (Sadler and Verheem 1996)
Finland	Norm Law issued in 1996 requires the application of SEAs to policies
New Zealand	Policy statements and plans must be evaluated to determine if the purpose of the Resource Management Act (1991) is achieved, thus the promotion of sustainable management of natural and physical resources (Sadler and Verheem 1996, UK-DETR 1998)

Canada and the Netherlands are among the countries with the most extensive experience in conducting environmental assessments for policies, plans, and programs. In addition, each has conducted an evaluation of its own experience with policy-level SEA. What follows is an extraction of some of the lessons from each of these evaluations.[42]

[41] Dusik, J., personal communication via e-mail with Leonard Ortolano, May 25, 2005. In commenting on the disadvantages of what is referred to herein as partial integration – late stage efforts into plans and programs, Dusik and Kosikova (2003:15) note: [The SEA] may come too late – new alternatives and proposals may be boycotted by planners.

[42] The remainder of this section draws heavily from Ortolano (2005).

2004 Audit of Canadian Cabinet Directive on SEA

In 1990 the Canadian Cabinet issued a directive on SEA in the context of federal government decisionmaking. It was revised in 1999 and again in 2004. The directive spells out the following mandate for federal departments:

"… Ministers expect a strategic environmental assessment of a policy, plan, or program to be conducted when the following two conditions are met:

1. The proposal is submitted to an individual Minister or Cabinet for approval; and
2. Implementation of the proposal may result in important environmental effects, either positive or negative."

The participants in the SEA process are as follows:[43]

- Cabinet – the main decision making body
- Ministers – ultimately responsible for having their departments conduct screening and, where appropriate, SEAs
- Minister of the Environment – responsible for advising other ministers on environmentally appropriate courses of action
- Line departments – responsible for ensuring that appropriate SEA processes are designed and implemented
- Environment Canada – responsible for providing expert advice to other agencies
- Canadian Environmental Assessment Agency – responsible for issuing documents to guide implementation of the Cabinet directive.

Significantly, the Cabinet directive is an administrative (as opposed to legislative) mandate.

During the past several years, a number of formal assessments have been conducted to determine performance of departments in the Government of Canada in implementing the 1990 Cabinet directive (as amended). These assessments have been conducted by the Commissioner of the Environment and Sustainable Development in the Office of the Auditor General of Canada.[44]

A 1998 assessment supported findings of an earlier study by the Canadian Environmental Assessment Agency, namely, that "most departments had not developed guidelines or directives on the Environmental Assessment of policies or programs" (Commissioner of the Environment and Sustainable Development 1998:17). Another finding was that SEAs were conducted without consulting with experts across departments or even within the departments conducting the SEAs. Moreover, in some departments, senior officials

[43] This paragraph is based on Dalal-Clayton and Sadler (2004:56-57).

[44] The Commissioner has broad powers to "hold the government accountable for its policies and activities to protect the environment and to implement sustainable development." (Dalal-Clayton and Sadler 2004:56).

responsible for preparing Cabinet documents "either were not aware of the existence of the Cabinet directive or did not know how it was being implemented" (p.18). Notwithstanding the existence of the Interdepartmental Committee on Policy and Program Environmental Assessment to improve the performance of departments in implementing the 1990 Cabinet directive, little had changed by the time of the Commissioner's 1998 assessment.

The Commissioner (in 1998) felt that the departments may have needed additional pressure to implement the Cabinet directive. The principal sources of pressure cited were "parliamentarians, the public and the Commissioner of the Environment" (p.18). In a follow up report in 2000, the Commissioner again found that departments were not "making sufficient progress to fully correct deficiencies we noted" (Commissioner of the Environment and Sustainable Development, 2000, Section 9.70).

In 2004, the Commissioner conducted another assessment of the performance of departments in implementing the 1990 Cabinet directive (as amended in 1998). In this case, the focus was on performance in the three-year period from 2000 to 2002.

A striking result from the 2004 audit is that even after more than a decade of experience, in general, "departments and agencies do not know how the strategic environmental assessments they have done have affected the decisions made, and, in turn, what the ultimate impacts on the environment are" (Commissioner of the Environment and Sustainable Development 2004:p.22). Moreover, audit results, "taken together, suggest that most departments have not made serious efforts to apply the directive" (p.28).

Of the 12 departments examined in the audit, three had not set up most of the basic internal management systems (i.e., systems establishing accountabilities, tracking, etc.). Another six departments had made some progress, but only three of the 12 had "generally satisfactory [internal management] systems in place" (p.10). Even these relatively strong departments had "room for improvement" (p.11).

For one cluster of three departments, including two of the relatively high performers, only 12 SEAs had been prepared in the 2000-02 "test period," even though the three departments had submitted over 500 proposals to the Cabinet for 2000-02. And the three departments could not document that these 12 SEAs "were the only ones needed in the test period" (p.15). Of all the SEAs reviewed as part of the audit, none contained all the elements identified in the guidelines for implementing the Cabinet directive (Canadian Environmental Assessment Agency 2004b). "Few assessments reported on the need for, or the results of, consultations relevant to the strategic environmental assessment" (p.15).

The audit also contained some positive findings where good practices were cited. Some departments were lauded for the following: accountability structures, guidance (both in documents and on intranets within departments), and SEA screening and tracking systems.

In the final sections of the 2004 audit, the Commissioner responded to the question: why, more than a decade after the Cabinet directive was first issued, "is there still a performance gap?" (Commissioner of the Environment and Sustainable Development, 2004:10). According to the Commissioner, the following factors contributed to the inadequate performance of departments in response to the Cabinet directive: (i) absence of oversight authority, (ii) ambiguities in requirements, (iii) absence of public review, (iv) varying commitment by senior management, and (v) shortcomings in Training and Guidance.

In addition to the factors listed above, the Commissioner highlighted a systemic problem based on the lack of congruence between SEA as a "one-time-only" exercise and the existence of multiple decisionmaking points in the policy-making process. Thus, for example, some SEAs were conducted at the time a policy was first proposed and existed only at a general level. However, no follow up was done when, much later in the process, many details had been added to flesh out (and sometimes change considerably) the original policy statement. In contrast, some departments only did SEAs late in the policy-making process, just prior to submission for funding approval. In these cases, it was generally too late to have the SEA process significantly inform policy design.

This timing dilemma is linked to the practice, which is sometimes apparent, of treating SEA as "a separate, isolated track, or 'silo,' which is not integrated with other analyses" (p.20). As the Commissioner pointed out, this may result in missed opportunities for integrating environmental studies with social and economic analyses, and it limits the degree to which SEA results are integrated into decisionmaking.

Interestingly, the Commissioner of the Environment and Sustainable Development (2004:20) recommended that the Privy Council should create mechanisms to ensure compliance with the Cabinet directive and the "deputy heads (of departments be held) accountable for implementing the directive."[45] Instead of embracing this recommendation, the Privy Council argued that SEAs were self-assessments and that quality control could be assured by existing mechanisms for inter-sectoral coordination.

2000 Evaluation of the Netherlands' E-Test

Beginning in the 1980s, the government of the Netherlands experimented with requirements to have a statement of unintended, side effects of legislation accompany legislative proposals.[46] In 1994, this initial effort was expanded in the form of an "environmental test," which has come to be called the "E-test": a requirement to assess the environmental impacts of proposed legislation. E-test results are attached to draft legislation submitted for consideration by the Council of Ministers.

[45] The Privy Council in Canada serves as the secretariat to both the Prime Minister and the Cabinet.
[46] Except where noted, this section is based on an unpublished note by Rob Verheem of the Commission for Environmental Impact Assessment in the Netherlands, entitled "The Evaluation of the Dutch E-Test: Second Draft 18, March 2004."

In the Netherlands, many laws are drafted by government departments using an informal process based on trust and cooperation among civil servants. This drafting process is carried out without requirements for public participation and it does not involve an external review.

In order to encourage government departments to conduct the E-test, it was built around a small set of basic questions. Those conducting the test were asked to determine the consequences of proposed legislation on the following: (i) energy consumption and mobility; (ii) use of renewable and non-renewable resources; (iii) waste and emissions to air, soil and water; and (iv) use of open space (Dalal-Clayton and Sadler 2004:73).

In contrast to the Canadian Cabinet directive, which does not involve oversight by a central authority, E-test results had to be reviewed by the Joint Support Center for Draft Legislation. This center served as both a source of assistance (in providing information and environmental data) and as a review body.[47] In cooperation with the Ministry of Justice, the Center could oppose the submission of proposed legislation to the Council of Ministers if the E-test for the proposal did not contain information needed by the Council to make an informed decision. This ability of the Center to oppose submission provided departments with an incentive to produce E-test results of appropriate quality. A delay in submission to the Council could be disruptive for departments proposing new laws.
After the first five years of experience with the E-test, the Ministry of Housing, Spatial Planning and the Environment hired consultants to evaluate the test's effectiveness.[48]

After reviewing documents, interviewing staff and conducting case studies, the consultants submitted their findings to an expert committee for discussion. An important conclusion of this evaluation was that the E-test was carried out so late in the process of drafting a legislative proposal that it had little influence on the quality of the legislation that was eventually adopted. Another finding was that staff in many departments knew little about the E-test.

In response to the evaluation of the E-test, the government made the following changes:

- Timing – The E-test has been replaced by a two-stage process involving a "Quick Scan" in the early stages of formulating a proposal, and, where warranted, an "Environmental Assessment." The Quick Scan is a screening step that yields both a decision on whether further study is needed and the "terms of reference" for any further study.[49] The name "E-test" was dropped and replaced with Quick Scan and Environmental Assessment.
- Responsible Unit – Instead of having the assessment performed by the interdepartmental group crafting a law (as was the case with the E-test), the

[47] The Center was "maintained by three ministries: Economic Affairs, the Environment, and Justice" (Dalal-Clayton and Sadler, 2004:74).
[48] During this initial five-year period, only 5 percent of legislative proposals with potential impacts significant enough to require assessments were subject to the E-test.
[49] These changes were "approved by the Council of Ministers in October 2002 and became obligatory on March 1, 2003" (Dalal-Clayton and Sadler, 2004:75).

assessment is to be conducted by the department taking the lead in proposing the legislation.

- Proposed Legislation Desk – The name of the Joint Support Center for Draft Legislation was changed to Proposed Legislation Desk to reflect its shift in focus to being more of a body to review the quality of information and less of an organization that facilitates preparation of assessments.
- Awareness – New efforts were made to make senior departmental officials and other staff members aware of the existence and advantages of requirements for the Quick Scan and Environmental Assessment.

A follow up review was conducted at the end of 2004, but it was not available for release at the time of this writing. Moreover, it was considered too early to use this review to evaluate whether the new two-stage process (Quick Scan and Environmental Assessment) is more effective then the former E-test.[50]

Experience with the E-test through 2001 showed that the test "was applied on a pro forma basis and had a negligible effect on decision-making" (Dalal-Clayton and Sadler 2004: 75). These results stem from two deficiencies in the initial arrangements used in the Netherlands: weak incentives for departments to carry out SEAs and the late timing of screening (to determine if an SEA was needed) within the overall policymaking process.
Modifications introduced in 2003 to the E-test dealt with the problems of weak incentives and poor timing by introducing what van Dreusel (2004: 45) referred to as "a 'stick' at the beginning of the [legislation formulation] process and one at the end, before decision-making takes place." The first of these "sticks" is the Quick Scan, which (assuming results indicate a need for further study) yields the terms of reference for a full environmental appraisal. The second "stick" comes after the Environmental Assessment is conducted, and it involves a "legislation report" prepared by the Ministry of Justice.
The legislation report indicates whether, in the view of the Ministry of Justice, the quality of information yielded by the Environmental Assessment is appropriate for the draft legislation that is being put forward. If the Ministry of Justice finds that the information is not of sufficient quality, "the responsible ministry includes this legislation report in the documents for the Council of Ministers" (van Dreusel 2004:45).

Some Lessons from Evaluation in Canada and the Netherlands

Requirements for strategic environmental assessments on proposals for new policies (in the case of Canada) and new legislation (in the case of the Netherlands) brought before cabinets appear not to have had much influence on proposed policies and laws. In both countries, compliance with policy-level SEA requirements has been characterized as pro forma. Where solid progress has been made in these countries, it has resulted partly from the commitment of senior officials in particular agencies and, more generally, as a result of the evaluations by external bodies that suggested changes to deal with shortcomings.

[50] Information in this paragraph is based on an e-mail from Rob Verheem, Dutch Commission for EIA, to Kulsum Ahmed, the World Bank, February 17, 2005.

Self-assessment is a central feature of policy-level SEAs in both countries. Departments that create proposed policies or legislation are themselves responsible for determining whether they should assess their proposals from an environmental perspective. Why would departments be expected to spend the time and money for such self-assessments? Clearly part of the explanation for the slow progress in both Canada and the Netherlands is the existence of weak incentives for departments responsible for conducting the policy-level strategic environmental assessments.

There are two possible tracks that could be followed to remedy this issue. The first is the introduction of strong oversight and nontrivial penalties for noncompliance with SEA requirements, which currently are practically nonexistent. Prior to recent changes in both countries, little rigorous oversight was provided because no organization had a strong mandate to monitor performance closely and control quality. As noted above, this changed recently in the Netherlands with new mandates for quality review given to the Proposed Legislation Desk and the Ministry of Justice. In addition to the absence of substantive penalties for noncompliance, ambiguities in the requirements themselves made it possible for agencies to get by with token compliance.

However, given that the SEA requirements are largely self-imposed by cabinets on their own members, it is unlikely that significant penalties for noncompliance will be forthcoming. So a second track is that if top officials in departments come to believe in the value of SEAs in reaching national goals for environmental quality and sustainable development, they may devote more substantial resources to the production of higher-quality policy SEAs. In both Canada and the Netherlands, increased attention has been given to promoting sustainable development as a national objective. Recommendations by the external evaluating bodies in both countries have emphasized the significance of making senior officials more aware of the existence and importance of SEAs for proposed policies and laws.

Tools that bring environmental issues to the table often are perceived by non-environmentalists as a threat, rather than a mechanism to enhance sustainability. The nature of this threat is well summarized by Connor and Dovers (2004: 168): "…SEA or equivalents, if taken seriously, represent a rather serious policy change. SEA raises issues of territory within the public policy system, it seeks (or threatens) to make the current minor policy concern of environment more mainstream, lacks an agreed home in the institutional landscape, and is a new and relatively untested approach."

Interestingly, a recent innovation in Canada points to the possibility of dealing with potential dilution issues of combining environmental, economic, and social effects, while maintaining the advantages of complete integration. In Canada, environmental assessment of trade policy is now being conducted using an approach that combines two of the integration approaches discussed herein: complete integration as reflected in the Slovak Republic case study, and the partial integration – simultaneous effort exemplified by the Argentina and Colombia case studies. The new approach to trade policy SEA has elements of "complete integration" type of SEA because a member of the SEA team is also a member of the policy design group; this ensures continual interaction between

SEA and policy design. This new process also has elements of the "partial integration – continual effort" type of SEA because the SEA team does its work in parallel with the policy development process. It also clearly reflects that the institutional process of policy formulation is as important as the inputs that are provided to that process.[51]

Finally, the evaluations in both Canada and the Netherlands highlight a systemic shortcoming with timing and frequency of SEA inputs to policy formulation, which are similar to shortcomings in the traditional project-level EIA approach. The evaluation of the E-test in the Netherlands noted that the test was often conducted too late in the process to have much influence on legislation. The 2000 evaluation of the Canadian Cabinet directive emphasized the limitations of "one-time-only" assessments in the context of policymaking, which involves multiple decisionmaking points.

The evidence from Canada and the Netherlands — two of the world's leaders in terms of policy-level SEAs — makes it clear that the implementation of effective SEAs for policies will be a gradual process to create the requisite institutional structures, design appropriate incentives, and develop the human resources needed for effective implementation. Time is required because policy formulation is a complex process that combines technical and political factors. The following chapter aims at understanding these complexities and two management approaches to handle the inherent uncertainties and ambiguities associated with the actual way in which policies are formulated and implemented.

[51] This approach was described by Jaye Shuttleworth, Director of Environmental Policies and Sustainable Development Strategies Division, Foreign Affairs, Canada (personal communication with Leonard Ortolano, June 1, 2005). A handbook describing this new approach to SEA is available at http://www.dfait-maeci.gc.ca/tna-nac/documents/handbook/e-pdf.

Chapter 3
The Non-Linearity of Policy Formulation

In this chapter models of organizational decisionmaking are used to explore the process of policy formulation.[52] The context of policy formation is similar in many ways to the context of organizational decisionmaking and many scholars have previously used the models described here to explore the process of policy formulation. It is important to note that any model is a simplification of the phenomenon.

This report then draws some conclusions on what elements are important if one is to influence the policy design and implementation process to incorporate sustainability dimensions. The conclusions draw on lessons learned from these models, which depict the way that policy formulation happens in practice, as well as from the previous chapter of applications of policy-based SEA.

3.1 The Rational Model for Decisionmaking

This section describes the most prominent model of decisionmaking, the rational model. This model is an ideal, rather than a depiction of reality. It has a well-defined starting point and completion point, and consists of the five steps listed below:

- Determine the problem
- Establish preferences
- List all options or alternatives
- Gather all relevant information
- Make a choice that maximizes or optimizes the likelihood or efficiency of achieving goals.

SEA methodology was designed based on the rational model illustrated below. The second step of the rational model is implicitly included in the identification of significant environmental impacts.

<u>SEA as Rational Decisionmaking Model</u>

- Identification of key environmental impacts = defining the problem and establishing preferences
- Assessment, consideration of alternatives, measures to mitigate = list options or alternatives
- Decision making stage = gathering information and making a choice
- Monitoring stage = subsequent data gathering for subsequent choices

However, even though SEA methodology is based on the assumption that policy formulation occurs in a linear manner, in reality the actual practice of decisionmaking is quite different for several reasons, including the fact that: (i) people are limited

[52] This chapter is drawn from a background paper by Feldman and Khademian (2005).

information processors (Simon 1957a, 1957b; March and Simon 1958); (ii) policy making entities, or relevant decision makers are not unitary actors with preferences (utility functions) that are clear, consistent and stable (March 1978), but rather are made up of multiple actors with multiple and often conflicting goals (Cyert and March 1963, Allison 1971, Halperin 1974); and (iii) frequently, it is difficult or impossible to define a problem clearly.

Policy formulation, in reality, does not have a clear starting or ending point, but rather is a continuous process that is better depicted by the models described in the next section.

3.2 Learning from Policy Formulation Models

The Garbage Can Model

The Garbage Can model of decisionmaking formulated by James G. March, Johan P. Olsen and Michael D. Cohen (Cohen, March, and Olsen, 1972; March and Olsen, 1976) is considered to be a better representation of the way that policy formulation actually takes place in practice.

This model depicts policymaking as a non-linear and continuous process, in which streams of issues, problems, solutions and people flow together and result in decisions during particular "choice opportunities." A choice opportunity occurs whenever people have a chance to connect different issues to one another. Meetings are examples of relatively formal choice opportunities.

A good example of this being played out in reality is the Presidential Decree signed in Mexico in December 2000 that forgave past federal government debts for municipalities which agreed to pay water fees in the future and agreed to forgo federal funding for water supply and sanitation in the event of fee non-payment. This Presidential decree was drafted by senior officials from the Ministries of Finance and Environment and the National Water Commission that met with municipal and state representatives and took advantage of a window of opportunity brought about by a change in administration and broad support by Congress. The latter was particularly important as the Decree was issued together with an amendment of the Bill of Rights, which states under Article 231A that 100 percent of the water fees would be returned to municipalities by the federal government in accordance with an incentive scheme under which municipalities need to have an equal amount invested in hydraulic programs. This is problematic from several standpoints, including pure economic theory. Why ask municipalities to pay and then return them that money? There was also no corresponding increase in the fee to represent the economic value of water. However, the government and Congress thought that this was good idea in order to create a culture of paying for water and investing in hydraulic works (World Bank 2002a and 2004).

John Kingdon built upon the Garbage Can model to describe the way in which agendas are set in the United States federal government (1995). He builds on the concept of organized anarchy introduced by Cohen, March, and Olsen (1972), arguing that the

process is not linear but consists of three process streams. In one stream, problems are recognized, defined and redefined. Indicators or measurements, dramatic events, and evaluations of existing programs combine with values and beliefs to bring a problem to the fore. Another stream consists of a "policy primeval soup", the ingredients of which are ideas generated by multiple actors in multiple settings. Policy communities consisting of academics, policy analysts, scholars in think tanks, administrators, interest groups and congressional staff who have common interests in homeland security or transportation, for example, generate ideas that are shared in professional conferences, round tables, public hearings, in publications, or through lectures. The policies that bubble to the top of the soup will be viewed as feasible and in line with values and beliefs held by policymakers. The third stream is politics. Kingdon argued that the "national mood," "pressure group campaigns," and the turnover of legislative and administrative offices define the dynamic of this stream. Just as choice opportunities provide decisionmaking opportunities in the Garbage Can model, "windows of opportunity" provide opportunities to link the three streams in Kingdon's model and set the agenda.

The Garbage Can model draws attention to the use of information as symbol, signal and repertoire (Feldman and March 1981, Feldman 1989). Gathering and displaying information may have as much to do with the process of legitimating the role of particular players in a policy-making process as it does with answering policy questions. Scholars have noted that the expectation that policy information will be used to solve current policy problems is unrealistic and seldom met (Bozeman 1986, Feldman 1989, Lindblom and Cohen 1979, Lynn 1978, Weiss 1977, 1978, 1980). The continued production of information can be explained in several ways. First, attention to processing information symbolizes the participants' adherence to a set of values consistent with the rational model. This adherence can legitimize the role of the participant as an appropriate decisionmaker (Feldman and March 1981). Second, attention to processing information can be a signal that the participant really does know how to use information in ways that will help make rational decisions. The cost of signaling goes down as the skill of the participant with information goes up (Feldman and March 1981). Third, the information may form a repertoire, much like a library, that can be drawn upon as needed, which is not necessarily the time frame in which it was produced (Feldman 1989). In all of these senses, information becomes like another stream that flows in and out of the Garbage Can model. It is important to the overall outcome but it does not have a linear relation to problem solving or policy formation.

In summary, the Garbage Can model provides some insights to the policy formulation process as a non-linear and continuous process, which is influenced by the creation of "choice opportunities" in which solutions, problems, and people are brought together. Decisions in these choice opportunities are affected by the context, the interpretation of events, and the pre-availability of solutions. This suggests that if an SEA is to successfully influence a policy, it needs to be used as a tool during windows of opportunities that occur in the policy formulation and implementation process. The case studies finding that SEAs that were fully integrated into the formal policy formulation process had greater influence than those which were only partially integrated is also consistent with this model. It is important to note, however, that these SEAs were only

integrated into a part of the actual policy formulation process, and this is perhaps why, at best, there was only limited influence. Examples are the Argentina (1997) and Colombia (2000) SEA cases, which identified priority issues linked to the sectoral agenda, as well as solutions to tackle those issues, but up to June 2005 have still not been fully implemented. The same message was also emphasized in the 2000 evaluation of the Canadian Cabinet directive on SEA which noted the limitations of "one-time-only" assessments in the context of policymaking, which typically involves multiple decision-making points. In this case, however, the SEA system is a periodic one, but still comes into play at a particular point in the policy formulation cycle.

However, given the complexities of making decisions illustrated by the Garbage Can model what are the options for policymakers looking for ways to address these difficult circumstances, and managers trying to move forward? How can one address environmental protection, economic development, and poverty alleviation, for example, in ways that produce not just "elegant" proposals but also enable people to take actions that make a difference? The concern with policy formulation cannot stop with the pronouncement of a policy. It must be possible not only to adopt a policy but also to implement it (Brunsson 1985, Moore 1995, Feldman and Khademian, 2005). Extending the understanding of policy formulation in this critical direction requires thinking about how to put the lessons of the Garbage Can model to use. The next section presents two alternative models that have emerged as ways of incorporating concerns with implementation in the policy formation process in the complex context in which policy is inevitably formulated. One of these alternatives is oriented to enabling action in the face of uncertainty; the other is oriented to enabling action in the face of ambiguity.

Adaptive Management

The Garbage Can model shows that policy formulation and implementation is full of uncertainty with respect to future effects. In order to tackle this uncertainty, Hollings (1978) and Jacobs and Westcoat (2002) have suggested implementing an approach called adaptive management. Adaptive management is an approach to managing the process of design and implementation of policies, in the face of uncertainty.[53] Adaptive management has been used in a variety of fields, but is most commonly found in the field of environmental policy (Hollings 1978). This model of policy formulation promotes the use of quasi-experiments that take place as an ongoing part of the policy process (Jacobs and Westcoat 2002). It involves taking action while there is still considerable uncertainty about outcomes, but designing actions so that they can be monitored and adjusted as their effects become more clearly understood. "Management policies are designed to be flexible and are subject to adjustment in an iterative social learning process (Lee 1999)"

[53] "Uncertainty can be resolved by obtaining certain specifiable pieces of information" (Feldman 1989:4-5). Note that specifying the information does not imply that the cost of obtaining the information is reasonable or even that the information is obtainable. Often, instead of gathering the information directly, an estimate or prediction is made of what the information is likely to be.

(National Research Council 2004:20). While there is no formula for adaptive management, elements generally include:

- Management objectives that are regularly revisited and accordingly revised
- A model(s) of the system being managed
- A range of management choices
- Monitoring and evaluation of outcomes
- A mechanism for incorporating learning into future decisions
- A collaborative structure for stakeholder participation and learning.

(National Research Council 2004:24-27)

Given that there is a broad literature that shows that the environmental effects of policy formulation are uncertain and difficult to predict precisely, adaptive management points in the direction of setting up a system or process that is focused on continuous improvement based on monitoring and evaluation of outcomes and learning, rather than a one-shot approach to integrating environmental aspects into policy formulation alone. In that regard, both the policy formulation and implementation processes are important, unlike in the case of previously described SEA methodology, where the SEA process ideally occurs at the time of policy formulation. Interestingly, the Colombia SEA case study (due to its evolution from an SEA for a policy reform loan to a solid piece of information that has continually been used by the Bank in its dialogue with the country) illustrates this approach of incremental progress with respect to integrating environmental considerations into public policies through a continuous process going beyond the particular project for which the SEA was carried out.

Another example of adaptive management is the evolving policy in Mexico with respect to improving the sustainability of water resource management. The current situation is such that allocated water rights are far in excess of water availability in certain water stressed areas. Water availability and quality, economically is a crucial resource for growth and quality of life in some states. Politically, therefore, water is an emotive issue. Hence a discussion on reducing existing "rights" to such a resource is fraught with difficulties in the short term, despite its importance from a sustainability perspective, where water is considered a potential limiting factor to future growth. In this context, Mexico's path in addressing this issue has been an incremental process. The first step has been an attempt to create behavioral change through publishing water availability data and improving the water rights registry. In 2002, one could only speculate on perhaps attempting to "buy back" excess water rights, adjusting rights to accurately reflect water scarcity in one pilot (World Bank 2002). Three years later, the government is actively buying back water rights in one over-exploited aquifer (CNA 2005).

As this example shows, both the policy formulation and implementation processes are important, unlike in the case of previously described SEA methodology, where the SEA process ideally occurs at the time of policy formulation. Moreover, formulation and implementation are not separate processes. The policy formulation process never ends and the way it unfolds depends on the community that participates in the processes of policy design, adoption and implementation and the actions that they take. Participation

is critical to dealing with the ambiguities that are inherent in policy contexts as is explored in the following section on inclusive management.

Inclusive Management

The Garbage Can model is also rife with ambiguity. "Ambiguity is the state of having many ways of thinking about the same circumstances or phenomena" (Feldman 1989: 5). Specific pieces of information will not resolve ambiguity. Indeed, though gathering information is often necessary in the face of ambiguity, more information often increases the ambiguity rather than resolving it.

Inclusive management is the management approach that is primarily oriented to enabling action in the face of ambiguity. This approach is defined by: 1) continuous iterative processes that help to create, and 2) an inclusive community of participation in which a wide range of perspectives involved in a process of policymaking and implementation will be seen as having a legitimate role to play in a collective process (Feldman and Khademian 2000, 2005). The approach is based on understanding the importance of combining multiple perspectives in problem-solving efforts. A rich literature explores the potential of public management directly engaged with the public to enhance the quality of public programs and strengthen democratic practices (Box 1998; Box, Marshall, Reed, and Reed 2001; King and Stivers 1998; Roberts 1997, 2002, 2003; Roberts and King 1996; Denhardt and Denhardt 2000; Rubin and Rubin 2001; Ingram and Smith 1993). Consistent with this premise, those using the inclusive management approach endeavor to facilitate participation and continuously search for ways of expanding the perspectives represented. Where traditional management approaches may see building community capacity as an outcome, even an important outcome, of solving policy problems, this approach places the capacity building in the foreground rather than the background. In a reversal of the traditional view, building capacity becomes the primary goal and projects become a way of pursuing that goal.

The engagement of continuous iterative processes and the creation of a community of participation are ways of addressing ambiguities by creating more choice opportunities, and a readiness for action when choice opportunities arise. Specifically, the continuous iterative processes and the ongoing creation of the community of participation make it possible for problem definitions to emerge and evolve over time as participants change and as features of the policy context change and become recognized. From this perspective, any particular policy problem/choice opportunity is an occasion to create, maintain or modify the community of participation. An example of inclusive management is the preparation and implementation of sustainable development Agenda 21 in communities. For example, in the tourism sector in Mexico, sustainable tourism development is inextricably linked with local economic opportunities, quality of services for both locals and tourists, the carrying capacity of the natural environment, among other factors. The preparation and implementation of local Agenda 21 plans in tourism destinations provides an opportunity for diverse stakeholders, from private businesses, municipal authorities, federal officials, to the people living in those communities to play

a role in voicing their perspectives and acting together to implement a common vision. More than a dozen such plans have been prepared and are under implementation. Their success is encouraging other municipalities to follow suit.

Inclusive management provides a way to address the issue of how to increase the relative power of otherwise less powerful stakeholders. Inclusive management, in fact, is not about increasing the numbers of people who are involved in policy formulation but increasing the diversity of views represented and the ability of otherwise neglected views to influence policy.

In summary, ambiguity is an important characteristic of the policy-making process. Past use of SEA can almost be viewed as one way of thinking, i.e., the "environmental perspective" among several ways of viewing a particular problem, competing with other ways of thinking, such as the social, economic, and sectoral perspectives. Here, the inclusive management model points in the direction of the need to better combine multiple perspectives, through a continuous iterative process and the creation of a community of participation. This suggests there is better integration of environmental concerns if they are considered together with other priority concerns, such as poverty alleviation and economic development, as was done in the priority setting stage and consultations with poor communities in the Latin America SEAs summarized above.

3.3 Toward an Adaptive and Inclusive SEA Methodology

This section describes the implications of evolving SEA in line with the adaptive and inclusive management approaches described earlier, in order to better handle the uncertainties and ambiguities associated with the actual policy formulation process.

Moving from "one-time" to continuous engagement

The previous examples point to problems associated with treating SEA as an essentially "one-time" assessment, particularly in the context of a process which has multiple decision points. It is difficult to assess the extent of monitoring and follow-up in these SEA cases, but the NAFTA, Argentina, and Colombia Water Supply and Sanitation SEA cases clearly illustrate that policy formulation and implementation occur over a long period of time and that there is value in having a mechanism for continuous engagement that effectively integrates priority environmental aspects.

Integrating the SEA process with the policymaking process, which includes implementation

Timing is also important. If SEAs are conducted in an integrated manner with policy formulation processes, there is clearly a relatively greater chance of having an influence than when the SEA process is only partially integrated or the SEA outcomes are only forthcoming after the policy formulation process is complete. Potentially, such an SEA could feed into the policy implementation phase, but again, there are few examples of this, particularly if there is limited monitoring and follow-up.

Focusing on Priority Environmental Issues

The case study examples do not clarify whether the priority environmental issue was integrated into the policy or whether it was other, lower priority, environmental issues that were integrated into the policy. Neither is it clear in some of the cases what the basis was for identifying priority environmental issues compared with other priority issues, such as poverty reduction or economic growth. Again, the exceptions are the Argentina and Colombia cases, where a specific prioritization step helped to highlight which issue was most critical through both analytical work coupled with consultations with the poor, given the focus of the related project on poverty reduction.

Providing Equal Representation

The case studies show that public consultation based on EIA methodologies can be difficult to implement in the context of policy formulation, where the groups that participate are not always representative of those most affected by environmental degradation.

Less Focus on Reports, more on Outcomes

It is also interesting to note that in the majority of the cases, there seems to have been less thought given to how the SEA could be used to influence decisionmakers, but rather much more emphasis on the production of a report, which was expected to feed automatically into a process in which policy decisions would be made following a rational, linear process. As discussed above, in practice the policy making process is very different. Furthermore, there seems to have been limited follow-up, and hence accountability, on the part of decisionmakers to implement SEA recommendations.

In summary, the effectiveness of SEA in influencing policymaking could be enhanced if it is used as a tool to take advantage of windows of opportunity in policymaking that occur when there is a concurrence of issues, problems, solutions, and people. The next chapter discusses this in greater detail.

Chapter 4
Evolving Policy-Based SEA to Bring in Institutional and Governance Dimensions

The previous chapter described some of the limitations of using EIA-based methodology to integrate environmental considerations into policies. This chapter describes some key elements that, in theory, may potentially provide a more successful approach to integrating sustainability concepts into policy formulation. The approach advocated here emphasizes the need for policy-based SEA to evolve into a continuous process, which brings in institutional and governance dimensions, in order to better influence policy formulation and implementation. These institutional and governance dimensions are comprised of four key elements:

1. Prioritization of environmental issues based on their effects on economic development and poverty reduction
2. Stakeholder Representation through mechanisms that bring together different viewpoints, and in particular mechanisms that give those most affected by environmental degradation a voice during the policy formulation and implementation process
3. Feedback mechanisms that ensure social accountability
4. Systems through which social learning can occur in order to raise more attention to priority environmental issues.

Each of these elements—priority setting, stakeholder representation, accountability, and learning—is illustrated below with examples of applications that are linked with improved environmental outcomes.

4.1. Priority Setting of Environmental Issues

This section argues that it is important to only *selectively* implement a continuous process policy-based SEA, particularly for sectors or thematic areas which matter from the perspective of economic growth and poverty alleviation. Some tools that could be used to prioritize environmental issues linked to economic growth and development will be described. Finally, examples are listed of some mechanisms that could be strengthened in countries to ensure that within the country there is capacity to use such tools and feed the results into decisionmaking processes that can, in turn, identify the sectors or thematic areas where there is a need to initiate a continuous-process SEA.

Selectivity in Selection of Policy-Based SEAs

In order to bring an issue to the policy agenda, it is essential to first raise awareness of the problem. Second, putting in place a long-term process requires both human and financial resources. In these days of scarce resources and competing priorities the value of the process must be made clear before a country considers putting it in place. Therefore it is critical that some sort of prioritization exercise is conducted to help policymakers decide in which cases such SEA processes should be put into place. Clearly one of the bases for making this decision should be the extent to which these environmental priorities impact broader priorities. The ultimate goal to which all countries aspire is long-term term

sustainable economic growth. With this in mind, clearly any prioritization effort needs to evaluate environmental priorities taking into account this broader sustainable economic development goal.

In practice, a number of factors can influence the establishment of environmental priorities including public clamor, cultural/historical/institutional/political factors, development agency priorities, international agreements, judicial decisions, and the results of technical studies employing analytical/quantitative techniques. Given countries' resource constraints, and the need to ensure that the benefits of carrying out the SEA outweigh the corresponding costs, a structured, two-fold approach to identify priority environmental issues is recommended. The first is use of a quantitative technique to value environmental damage in economic terms, so that a direct comparison can be made with a country's Gross Domestic Product (GDP). The second is to use more participatory techniques, such as surveys and focus groups of those most affected by environmental degradation, so that a better understanding is obtained of how much of a priority tackling these issues are for these stakeholders (i.e., those most affected by the degradation). The next section reviews some of these tools.

Tools for Identifying Environmental Priorities

This subsection, describes a number of tools for prioritizing different environmental problems, starting with briefly describing two quantitative techniques, comparative risk assessment (CRA) and cost of environmental damage studies, for priority setting.[54] There is also a description of participatory techniques.[55]

Comparative Risk Assessment

CRA provides a systematic framework for first evaluating different environmental problems that pose different types and degrees of risks to human health and the environment, and then for deciding what to do about them. The basic premise of CRA is that risk provides an objective measure for comparing the relative severity of different environmental problems, and risk reduction provides a metric for organizing and evaluating efforts to address the problems. CRA generally has two stages:

- *Risk Assessment*. In this stage, the environmental problems facing an area are identified, evaluated and compared, with the aim of developing a ranking of the problems in order of their relative severity. The problems are ranked based on the risks they pose. In some cases a single risk metric is employed. In other cases different rankings are developed for different risk categories, e.g., cancer versus non-cancer health risks, or health versus ecological risks. The ranking process involves assembling and analyzing relevant data on the environmental problems (including information from existing scientific risk analyses) and using structured judgments to fill gaps in data. Although the risk ranking process is scientifically oriented, there is extensive need for value judgments. The hazards to be

[54] This section draws largely on a background paper prepared for this study by Morgenstern (2005).
[55] This draws upon a background paper prepared for this study by Robb (2005).

considered in the risk assessment, how "risk" is to be measured, how different risks should be weighted, and how uncertainty should be treated are matters which often involve local values and social choice.

- *Risk Management*. In this stage, initiatives, action plans or budgetary alternatives are developed and assessed. The considerations in this stage extend beyond risk to include a broad balancing of economic, technical, institutional, legal, and political factors.

CRA was originally developed at the U.S. Environmental Protection Agency and published as an Agency report, "Unfinished Business." This report did not lead to a major re-allocation of resources at the U.S. EPA. Nor did it radically change public perception of environmental risks. Yet, it did help broaden thinking in the policy community on the need to prioritize efforts on the basis of risk reduction potential. Since the original publication of "Unfinished Business," more than half of the states in the U.S. and more than fifty localities have employed the comparative risk approach for identifying and addressing important environmental issues. Several papers have chronicled the lessons learned from these projects and they are now a well-established part of the American policy folklore (Davies 1996, Finkel and Golding 1994). As example, the Hawaii CRA resulted in the establishment of an indoor air program, a program to test blood lead levels in children, new legislation to implement the recommendations, and a cabinet-level committee to oversee progress (Ijjasz and Tlaiye 1999).

Internationally, CRAs have been conducted in more than a dozen developing countries and economies in transition, including Bolivia; Bangkok, Thailand; Cairo, Egypt; Quito, Ecuador; as well other locations in Eastern Europe, Asia and Central and South America. The results of international CRAs appear in published reports by USAID and other US government agencies, consulting firms, universities, and the World Bank.

Typically most CRA studies develop rankings of problems reflecting their relative health risks, while a few CRAs have also developed separate rankings based on ecological risks and risks to quality of life. All the studies addressed residual as opposed to inherent risks.

The World Bank Environment, Industry, and Mining project in Bolivia included a CRA to identify how best to use financial resources specifically targeted for remedying environmental contamination associated with mining. The study first compared mine sites according to the risk that they posed to people, to the economic infrastructure, and to ecosystems through heavy metal contamination, acid generation and physical hazards. The goal was to make informed decisions on which sites to clean up first, how much to clean them up, and how to do the job. In the second part of the study the set of actions analyzed was expanded beyond those directly related to the remediation of mine waste. The study identified the most cost-effective measures for dealing with problems resulting from contamination for example, repairing water supply pipes affected by acid drainage, sealing playgrounds built on mine waste, and paving dust roads (Ayres, Anderson, and Hanrahan 1997 as cited in Ijjasz and Tlaiye 1999).

CRAs can employ both quantitative and participatory techniques. At one extreme, the risk rankings were developed by a small group of technical experts (generally less than 10 people), including consultants retained to conduct the project. At the other extreme, several projects developed their risk rankings through a broad participatory process involving representatives of the general public as well as scores of experts from both governmental and nongovernmental organizations. Although a few projects involved only consultants, most involved government officials. Virtually all the projects were multi-sectoral. There has been a clear trend over time in the design of CRAs toward broader public participation in developing the risk ranking. Nearly all CRA risk ranking processes were informed by extensive collection and analysis of technical information.

Some of the international CRAs incorporated novel features not widely used in the U.S. studies. For example, the AID-sponsored CRA conducted in Quito, Ecuador included so-called ethnographic methods (focus groups, structured observations, and in-depth interviews) to improve the risk assessments. Researchers studied people's behaviors that affected how they were exposed to environmental pollutants (e.g., how much drinking water did they consume, how was it stored, did they boil it before use) in order to replace the typical default exposure assumptions with estimates reflecting actual local practices. The researchers also studied and asked about people's attitudes in order to reflect local values in the risk assessment—what aspects of "severity of a health effect" matter (e.g., in the local culture, is an illness of more concern if it affects a child, a working adult, or an elderly person?); what sorts of "quality of life" risks should be evaluated?

In contrast, several CRAs sponsored by the World Bank employed economic methodologies to inform the risk ranking process. Several CRAs conducted in Eastern Europe and Asia employed public opinion polling to inform both the risk assessment phase (which environmental risks are people concerned with?) and the risk management phase (what degree of public support might there be for various possible initiatives to address risks?).

Cost of Environmental Damage Studies

The monetary valuation of environmental damage, and quantification of environmental damage, involves many scientific disciplines including environmental, physical and biological, health sciences and epidemiology, and environmental economics. Environmental economics, in turn, relies heavily on other fields within economics, such as econometrics, welfare economics, public economics, and project economics. New techniques and methodologies have been developed in recent decades to better understand and quantify preferences and values of individuals and communities in the context of environmental quality, conservation of natural resources, and environmental health risks. For example, economic analyses attempt to value the importance of particular health endpoints, based on people's willingness to pay to avoid such consequences. The applied results from these techniques and methodologies can then be, and often are, utilized by policymakers and stakeholders in the process of setting environmental objectives and priorities. And, because preferences and values are

expressed in monetary terms, the results can provide an additional guiding principle for allocation of public and private resources across diverse socio-economic development goals.

The costs of environmental damage include many aspects. Some costs are economic. These include reduced productivity of agricultural land due to erosion, salinity, or other forms of land degradation; medical treatment costs and lost work days for illnesses associated with environmental pollution; reduced fishery catch due to pollution and overexploitation; and losses in tourism revenues due to pollution and/or natural resource degradation. Other costs are associated with reduced well-being and quality of life. These include an unclean environment such as inadequate waste management, pain and suffering from ill health and disability, the risk of mortality from pollution, and the loss of recreational quality and natural heritage due to degradation of natural resources.

When estimating the cost of environmental damage a distinction is made between financial and economic costs. To the extent feasible, economic cost should be applied because it captures the cost and reduced welfare to society as a whole. For instance, the financial cost of health services that an individual pays may be substantially less than the true cost of providing these services. It is therefore important to estimate the real cost to society of providing those services, including the portion paid by individuals receiving the services and the portion paid by others, including the public sector. Another example is time lost to illness or provision of care for ill family members. If the ill person or the individual providing care for an ill person does not earn income, the financial cost of time losses is zero. However, the person is normally engaged in activities that are valuable to the family. Thus, the illness of a family member can impose significant burdens on the family, including reduction in the amount of time available for leisure activities. In economics and welfare analysis, the economic cost of time losses to the family is normally valued at the opportunity cost of time, i.e., the salary, or a fraction of the salary that the individual could earn if choosing to work for income.

There is an extensive literature underlying the quantification and monetization of environmental damages. Recent examples of developing country case studies include a World Bank sponsored program for these studies in the Middle East and North Africa Region, including in Egypt, Syria, Morocco, Tunisia, and Lebanon (Sarraf 2004) and a study in Colombia to influence environmental priority setting in the context of a development policy program (Larsen 2004). Notwithstanding, the actual results of these studies, which put the costs of environmental damage somewhere between 3 percent and 5 percent of GDP, depending on the country, a number of benefits of this type of analysis can be highlighted. These include the following (Sarraf 2004):

- This tool provides a useful mechanism to rank the relative social costs of various forms of environmental degradation.
- It offers policymakers an instrument for integrating environment into economic development decisions.
- By expressing damage costs as a percentage of GDP, it allows for comparison with other economic indicators.

- It enables Environment Ministries to discuss environmental protection in the "same language" as the Finance or Economics Ministry.
- The process of conducting such an analysis provides an indication of the relative impacts of environmental damage on different vulnerable groups (e.g., the poor, children, ethnic groups, etc.).

Sometimes the overall result or the ranking of some issues provides some surprises, compared with perceived priorities. The Colombia cost of degradation study, for example, showed that the estimated number of annual premature deaths from urban and indoor air pollution was more than 7,000 and this was higher than the estimated deaths from road accidents, and higher than in any other category. At a national level, the estimated annual cost of inadequate water supply, sanitation and hygiene was highest followed closely by the annual cost of natural disasters, urban air pollution, erosion and salinity of cultivated lands, and finally, indoor air pollution (Larsen 2004).

In the case of Algeria, the results of the costs of damage study were used at the highest political levels to decide on important investments in environmental protection, totaling about $450 million. In Egypt, the study has sparked interest in further analysis of the cost of degradation, but at the governorate level, in Damietta, Qena and South Sinai (Sarraf 2004).

Participatory Techniques

Combining quantitative methods with participatory methods allows the deepening of the understanding of how environmental degradation may affect vulnerable groups. As described in the next section, the identity of these groups varies considerably depending on the country context. Often, though, it is the poor who are most affected by environmental degradation. The social sciences offer useful techniques to identify priorities in the context of poverty assessments. First, those most affected by degradation may have a different view of the problem and of the solutions. For example, direct consultations with poor people have revealed that vulnerability, physical and social isolation, insecurity, lack of self-respect, lack of access to information, a distrust of state institutions, and powerlessness can be as important to the poor as low income.[56] Tools or approaches such as Participatory Poverty Assessments (PPAs), which have now been undertaken in more than sixty countries,[57] that allow policymakers to consult the poor directly and transmit findings to policymakers are useful in this regard, for situations where environmental degradation affects the poor.

Using PPAs to extract information just for research purposes, with limited participation and no link to policymaking, is considered bad practice. Hence, in order to increase impact, many new PPAs have been more closely linked to the political context of policy choice and change. In fact, PPAs have developed from the "first generation" where the focus was to provide information to policymakers about poor people's perspectives on

[56] World Bank (2001a) advances a three-pillar framework for analyzing poverty: opportunity, empowerment, and security.
[57] This draws from Robb (2005).

poverty, to a "second generation," where the process is longer, involves multiple stakeholders, provides information to policymakers and is also embedded in policy structures at the national level. In Cameroon, for example, the government disregarded a PPA, even though the field work was of good quality and the results relevant, in part because some key policymakers felt excluded from the process.

Unlike a household survey, which consists of a predetermined set of questions, most PPAs use a variety of flexible methods that are known as participatory learning and action methods (Chambers, 1997). Such methods combine visual techniques (mapping, matrices, diagrams) and verbal techniques (open-ended interviews, discussion groups), and emphasize exercises that facilitate information sharing, analysis, and action.[58]

In addition, Poverty and Social Impact Analysis (PSIA) is a broader approach to analyze the positive and negative distributional and poverty impact of policy change on the well-being of different groups in society, with a focus on the poor and vulnerable.[59] This encompasses a range of tools and methods, including those of a quantitative nature. It has also enabled the opinion of the poor, often through participatory poverty assessments (PPAs), to be reflected in the analysis of the poverty impacts of reforms in a more systematic way. The objective of PSIA is to support country ownership of policies by informing a public debate on the most appropriate policy combination for growth and poverty reduction and the trade-offs between policy choices; assess the appropriateness, timing, and sequencing of reforms; and better defining appropriate compensatory and complementary measures, if appropriate.

Surveys can be another technique for assessing environmental priorities in a qualitative manner. When this technique was used to assess environmental priorities in the context of the Colombia Country Environmental Analysis, in conjunction with more quantitative techniques, it revealed that priorities varied with income, as well as among different stakeholders. For example, the most important issues for the lower income groups were improvements in air quality and reduction in noise, together with reductions in risk from natural disasters, such as flooding and landslides. By contrast, higher income groups felt that the most important priorities were global environmental issues, biodiversity and urban environmental issues. Similarly, the general public, including many industry stakeholders, identified air pollution as the most important environmental issue, whereas environmental officials identified loss of biodiversity as most critical (CNC 2004).

This difference in needs of different income groups is mirrored in opinion polls at a global level, which show that citizens from developing countries list health-driven environmental issues (such as shortage of freshwater and air pollution) as the most serious, compared with citizens from industrial countries, where the top issue of concern was loss of rainforest/wilderness (Miller 2004).

[58] Beneficiary Assessments have also been used in PPAs. See Salmen, 1995.
[59] See also World Bank (2002b, p.2).

Environmental Prioritization in the Context of Country Processes

Many of the examples described above for environmental prioritization in developing countries have been financed by development agencies. Typically a consultant team "jets" in and gathers information, and then conducts the analysis, which is shared for comment with country stakeholders. Ultimately it is important that countries build their own capacity to conduct prioritization exercises. Ideally, such capacity needs to be built through universities and Think Tanks in countries, but there needs to be recognition that this capacity building is a slow process. Originally, PSIA was envisioned as an approach that is financed and implemented by client countries. However, it has been learned from the more than 100 PSIA studies initiated so far in the past four years, that intention often remains "wishful thinking" in the context of human and financial resource limitations, even though governments do take the lead in designing and using the results of these studies for decisionmaking.[60] Capacity constraints and resource limitations often come in the way of client-managed PSIA. Practice shows that often the use of these tools is driven by development agency requests or funding. There are some examples in the Bank of building capacity for such analysis, typically in Environment Ministries, for example, through the creation and strengthening of the Economic and Social Unit in the Mexican Ministry of Environment and Natural Resources under the National Environmental Project, initiated in 1992. Sarraf (2004) reports that the Tunisian National Environmental Protection Agency is interested in setting up a unit of environmental economists who will be trained to undertake economic analysis of environmental projects.

There are also some questions as to which government agency should conduct or contract such prioritization exercises. In the case of *Unfinished Business*, it was the US EPA that conducted this exercise. However, in most countries, the environmental agency is not keen to carry out such exercises, simply because they feel it detracts from the larger challenge of garnering more resources to address environmental concerns. Hence, they prefer to focus on increasing the size of the overall resource envelope rather than fighting over a portion. Furthermore, given the limited leverage of environmental agencies vis-à-vis sectoral ministries or cities/municipalities, there is only a limited possibility of them influencing others to initiate a policy-based SEA.

Given that the very purpose of this exercise is to determine priority sectors or themes for conducting a policy-based SEA, it is therefore important that regardless of which Ministry or third party actually conducts such prioritization studies, the results are used by the Ministry that allocates budget and has overall planning responsibilities, e.g., in Mexico, this would be the Ministry of Finance and Public Credit or in Colombia, the National Department of Planning.

Finally, priority-setting processes should take place periodically, given that the policy-formulation process lacks a clear beginning or end. This allows attention to be drawn to problems and feeds into agendas as they are set, such as during an election period, or when a new administration comes on board. Since most of the techniques described

[60] Comments on earlier draft of this report, Anis Dani, Advisor, Social Development Department, World Bank (May 17, 2005).

above are less about forecasting the future and more about obtaining a better understanding of current problems, another reason to conduct such exercises periodically is the need to detect environmental problems at an early stage, rather than when they impose a significant cost to society.

4.2 Stakeholder Representation—Bringing Different Viewpoints to the Table and Allowing the Voice of the Most Vulnerable to be Heard

The earlier analysis of policy formulation and decisionmaking models indicated the importance of setting up communities of practice associated with particular priority issues so that people, issues, problems and solutions can come together in advance in readiness for "windows of opportunities," such as policy reforms. More powerful stakeholders disproportionately affect policy formulation processes, thus it is essential that mechanisms are also put in place to allow for weaker stakeholders to also bring their perspective to the discussion. This subsection describes who are the more vulnerable (less powerful) stakeholders in the context of environmental issues. Then mechanisms to bring different viewpoints together are discussed, i.e., the setting up of communities of participation,[61] in the context of predefined priority sectors or themes (as defined in the previous section). A discussion on how the viewpoint of the most vulnerable groups could also be represented in such communities of practice concludes.

Identifying the Most Vulnerable Groups

The Oxford Dictionary defines vulnerability as "susceptibility to injury or exposure to damage." In the context of environmental issues, vulnerable groups could be those susceptible to increased health risks associated with environmental factors, those whose livelihoods are threatened as a result of changes in the natural resource base, and those susceptible to economic losses as a result of natural and man-made disasters, ranging from flooding to toxic chemical releases to the environment to climate change. For example, on a global scale, lack of access to clean water and sanitation, and indoor air pollution are the two principal causes of illness and death, principally affecting children and women in poor families (Lvovsky 2001). In Colombia, in the Bogota Savanna, a recent case study documents that water scarcity is clearly an issue for the small farmers living in the Savanna, whereas the larger more powerful interests, such as the irrigation district, the regional environmental corporation and the energy company have secured access to a sufficient quantity of water (University of Los Andes, 2004). In another case study in Colombia focused on the process of creation of National Protected Areas, in which, by law, all economic activity is forbidden, one of the more vulnerable groups are the indigenous populations living in that area from whom property rights are taken away, despite their close and long association with the land (University of Los Andes 2004).

Studies indicate that the poor are often disproportionately affected by environmental degradation (World Bank 2001b). For example, wood fuels are the primary source of energy for approximately 2 billion people. However, from a health perspective, they are

[61] This term is used in the context of inclusive management. It is described in greater detail in Chapter 3.

associated with health problems caused by indoor smoke, such as acute respiratory infections in children and chronic obstructive pulmonary disease in women. Most of the victims, infant children and women, are from poor rural families. In developing countries with high mortality rates, indoor air pollution is the fourth leading cause of illness and death (WHO 2002). The poor are also the ones who have limited options to mitigate or avoid the consequences of this degradation. Installing a chimney or switching to a less-polluting fuel source are options that may not be easily implemented due to resource constraints.

Another vulnerable group that it is important to highlight, particularly in the context of any discussions on environmental sustainability, are children. The Brundtland Commission's definition of sustainable development implies ensuring that future generations have (at the very least) the same opportunities as current generations. For many, the future is distant and difficult to link to present needs. The future is, however, directly linked to the present through children, who are the future generation (Ahmed and Sanchez-Triana 2004). They are also typically most affected in developing countries by environmental degradation, principally through health impacts. For example, diarrhea causes 2 million deaths per year. Over 90 percent of the health effects are experienced by children under five years of age. This is equivalent to one child dying every fifteen seconds. Diarrhea accounts for about a third of total child deaths under the age of five in developing countries. (WHO 2002)

Setting up Communities of Participation

Given the complexity of the theme or sector and its linkages with priority environmental issues and broader goals of economic development and poverty reduction, a community of participation in the context of a predefined sector or theme should ideally consist of a multitude of stakeholders with different viewpoints or perspectives. Bringing such a community together will allow for not only an exchange of viewpoints on particular issues, but also may lead to a broader range of possible solutions, by combining the solutions that are available to individual stakeholders, to deal with particular issues. The bringing together of a community of participation does not diminish the role of governments; rather it gives governments a more prominent role as decisionmakers that take into account different viewpoints and accordingly assess trade-offs. The interaction between stakeholders in such communities can result in alliances between different stakeholders for differing reasons to support a common goal, such as was described earlier in the context of Local Agenda 21 Plans in Mexican tourism municipalities.

Once these communities are set up, balancing the different viewpoints in these communities so that equal weight is given to the viewpoints of the less powerful stakeholders is the next challenge. This is considered in more detail below.

Including the Viewpoint of the Vulnerable

As was described earlier, inclusive management, in fact, is not about increasing the numbers of people who are involved in policy formulation but increasing the views

represented and the ability of otherwise neglected views to influence policy. Inclusive managers engage in both informational and relational work to bring together people from different perspectives in ways that allow them to appreciate one another's perspectives and potentially problem-solve together.

Directly consulting the vulnerable does not guarantee that policy will be influenced.[62] Policymaking is a complex—and inherently political—process. Rules, legislation, traditions, networks, ethnic alliances, patronage, political allegiances, and bureaucratic structures all interact to form a complex and fluctuating policy environment. In addition, individual survival in an institution, institutional survival in a government, and the maintenance of a regime within a country can also affect policy choice (Grindle and Thomas 1991).

In general, open political environments provide greater opportunities for building consensus around policies for improving the quality of life and poverty reduction. In Costa Rica, where there is a tradition of bringing marginal groups into the political sphere, the government was eager to better understand poverty from the perspective of the poor, and the data from consulting poor people had an impact on policy. If a government is not fully committed to consulting with the more vulnerable groups, such as the poor, it is unlikely to act on research results that run counter to its own interest. In such circumstances, even though direct consultation is clearly the optimal option, different mechanisms need to also be considered for increasing the likelihood that the viewpoint of the most vulnerable is heard. Two other options are discussed below.

The first option is to use national advocates on behalf of the most vulnerable groups. In countries, where the culture of consultation is not so strong, this may be an easier step for countries to implement, particularly since the advocates are country nationals, rather than external actors such as development agencies. Civil Society Organizations (CSOs) are examples of such advocates. Ensuring that CSOs or other advocates, such as academia are present in the community of participation on behalf of the more vulnerable groups becomes another means for making the views of the more vulnerable groups heard. Again, this is not as straightforward as it may sound. CSOs often have their own narrow agendas and these may or may not be in line with the needs of the more vulnerable groups. Furthermore it is not possible to exclusively encourage CSOs to represent the less powerful stakeholders. Encouraging CSO engagement in policymaking will also mean that the more powerful stakeholders will have another mechanism to influence the policy debate.

An example of an effective CSO advocate can be found in case studies on urban air pollution in Delhi, India. Here, two fairly elitist NGOs, the Indian Council for Enviro-Legal Action and the Centre for Science and Environment (CSE) brought public interest lawsuits and generated a fact-based, high-profile publicity campaign that compelled the government to enforce legal regulations with respect to air pollution (Blair 2005a, and Pandita, undated).

[62] This draws upon Robb (2005).

The second possible option to increase the likelihood that the voice of the most vulnerable groups is heard is by ensuring that there are no cases of regulatory capture in a country or any such cases are phased out. Regulatory capture can be defined as a situation where interest groups exert undue influence on the activities of the environmental authorities, so that instead of acting to further social welfare, they act to further the interests of select groups.

4.3 Reinforcing Social Accountability for Improved Environmental Governance

As pointed out in the World Development Report 2003 on Sustainable Institutions, it is not enough to simply ensure that interests are balanced, i.e., that different viewpoints are equally represented at the decisionmaking table. In order to ensure that commitments made through policy design are implemented and last over time, how mechanisms for ensuring social accountability can be used to improve environment governance is discussed. The section begins with some definitions and concludes with some examples.

Defining Social Accountability

Accountability means being answerable for one's decisions and actions. Social accountability means the broader obligation of public officials and decisionmakers to render account towards its citizens and the society at large regarding their plans of actions, their behavior and the results of their actions.[63] At a general level, accountability mechanisms include free and fair elections, legislative oversight, administrative supervision, financial audits, legal redress (rule of law) and free and active media.[64] Social accountability mechanisms more specifically refers to the broad range of actions and mechanisms (beyond voting) that citizens themselves can use to hold the state accountable, e.g., citizen monitoring of public services, participatory expenditure tracking, social auditing, independent budget analysis, civil society monitoring of the impact of policies, and so on. These social accountability initiatives regularly rely on actions on the part of government, the media and other societal actors that increase transparency, improve access to public information, or enhance the enabling environment for civic engagement.[65]

Mechanisms for Reinforcing Social Accountability for Improved Environmental Governance

In recent years, India has made major strides forward with respect to the access that people have to the judiciary to address environmental pollution issues. The landmark case on air quality discussed earlier in Delhi firmly brought this issue to the attention of government policymakers as one for which they are accountable to the public (Blair 2005a). In this particular case, in the early 1990s, an Indian NGO asked the Supreme

[63] See Ackerman, John M. (2005).
[64] This subsection draws from Blair (2005b).
[65] See Malena, Carmen with Reiner Forster and Janmejay Singh (2005) Social Accountability – An Introduction to the Concept and Emerging Practice, Social Development Papers No 76, Washington, The World Bank.

Court to compel the Delhi government to enforce the clean air laws that had been passed some fifteen years previously. After a long and sustained campaign which utilized quantitative information on health damage effects, including estimated mortality rates, as well as an effective public awareness campaign through the Press, in 1998 the Supreme Court issued its first comprehensive mandate for tackling air pollution. The trend in India continues with the most recent filing of a civil writ petition linked to the installation and operation of incinerators for biomedical waste in the Supreme Court of India by an NGO against several government organizations, including the Ministry of Environment and Forests and the Central, Delhi and Maharashtra Pollution Control Boards. Environment and Forests Secretary Ghosh (2004) has stressed the importance of voice and accountability mechanisms, such as "India's pluralistic democracy, which is based on universal adult suffrage and includes strong, independent judicial institutions and a free press" in order to harmonize environmental concerns and economic growth.

Mechanisms to disseminate information in a manner that is easily interpretable can allow communities to play a role as informal regulators, but also promotes accountability on the part of those being regulated. An example is the pioneering public disclosure scheme in Indonesia (PROPER) that encouraged small firms to clean up their act with respect to environmental pollution (World Bank 2000). Interestingly, in a second phase of the same program, the government has moved to make such a disclosure program compulsory, rather than voluntary (Leitmann and Dore 2005). Arguably, this forces greater social accountability than a voluntary program of a similar nature.

Other examples of such accountability mechanisms include several actions implemented by the Government in the Mexico Programmatic Environment Structural Adjustment Loan (World Bank 2002a). These include public disclosure of funds returned to municipalities for water treatment investment programs to encourage greater scrutiny and accountability for this urban service on the part of the public from their municipal governments. Another example under the same project is the requirement to make available through the internet the processing status of any particular environmental license in the overall license application process, including the number of days that the license is at any one point in this process, in order to improve transparency of government procedures and hence reduce corrupt practices. While these mechanisms could be implemented in isolation, it should be noted in this case that a Transparency Law was passed in Mexico in 2001 and this greatly facilitated such actions on the part of the government.

Civil society organization can be a key mechanism for providing voice to those who are vulnerable to environmental damage. But, straightforward as this may sound, it is essential to better understand the institutional context in which CSOs operate in a country on environmental matters. In a recent institutional assessment of Colombia's environmental management system, Blackman and others (2004) noted that even though Colombia's 1991 Constitution and Law 99 of 1993 create numerous mechanisms for public participation in both the formulation and implementation of environmental policy, the relative weaknesses of national NGOs and political considerations have a much stronger influence. As an example, representation by NGOs on the boards of directors of

Regional Autonomous Corporations (CARs, based on their initials in Spanish; these are akin to regional EPAs) "has been the subject of cronyism—spurious NGOs are often created by local political and business interests to fill seats on CAR boards" (Blackman and others 2004). Blackman and others (2004) go on to emphasize different courses of action to strengthen the environmental NGO sector in Colombia, such as through promoting environmental education, making environmental data easily available, ensuring that NGOs are adequately represented on both formal and informal deliberative bodies and by adopting reforms that strengthen advance notice of significant environmental policy actions and provide opportunities for public input. On the latter, some very specific proposals in the context of Colombia include (i) establishing clear procedures and mandates for national and regional regulatory agencies to provide early notification of the government's intent to draft new regulations or make major changes in policy (for example, requiring drafts of proposed regulations to be published in the *Diario Legal* and/or on public ally accessible websites) and for enabling the public to comment on these notices; (ii) building capacity for public comment in economic sectors with significant environmental impacts; and (iii) establishing requirements and developing the internal agency capacity to take comments into consideration in writing regulations and making policy, and to report back to the public on exactly how public comments were taken into consideration.

4.4 Learning in Environmental Policymaking and Implementation

Both the adaptive and the inclusive management model point to the importance of social learning in order to continuously improve the design of public policies by ensuring that there is allocation of attention to key environmental problems as well as to the effectiveness of current policies in addressing these issues. This is particularly important for ensuring that these priority environmental issues are placed back on the policy agenda, so that incremental improvement can continue to occur over time. This section briefly presents an overview of key types of learning apparent in organizational and environmental policy contexts; followed by some examples of how such learning has resulted in a change in behaviors with respect to certain environmental issues, in some cases, over a fairly short time frame.[66] Also briefly discussed are learning traps.[67]

Types of Learning

There is a considerable literature on "organizational learning" which draws largely from the fields of organizational sociology and management. This section provides a brief introduction to concepts of learning from this literature.

Learning in Organizations

[66] This section draws on a background paper for this study by Ebrahim (2005).

[67] The motivation is to identify ways in which learning can be improved so as to result in better policy-making and more effective implementation. It is important however, not to fall into the trap of portraying learning as a rational and technocratic endeavor. In practice, it is a messy process embedded in social, political, and cultural ambiguities, which may not easily lead to improvements in organizational behavior.

Organizations learn from their own experiences through two primary mechanisms, learning by doing and learning by exploring. The first of these mechanisms, learning-by-doing, is a repetitive trial and error process. An organization is likely to repeat a routine that is associated with success in meeting a target, whereas it is less likely to repeat one that is associated with failure (Cyert and March 1963, Levitt and March 1988). Learning by exploration occurs when organizations search for new ideas "without knowing or anticipating the full consequences of their work" (Sanchez Triana 1998: 167). In addition to learning from their own experiences, organizations also learn by imitation, taking on the routines, strategies, hierarchies, or technologies of other organizations (Ebrahim and Ortolano 2001).

Organizations can be seen as learning "by encoding inferences from history into routines that guide behavior" (Levitt and March 1998: 320) or, in broader terms, by "improving actions through better knowledge and understanding" (Fiol and Lyles 1985: 803). Learning, as such, involves generating knowledge by processing information or events and then using that knowledge to cause behavioral change.[68] According to this usage of learning, generating knowledge is not enough; learning also involves the use of knowledge to influence organizational practices and may not always be an intentional process.[69] As such, simply identifying shortfalls in organizational performance and assuming that the information will be used by the organization to improve performance is insufficient for ensuring actual change.

In their widely cited work, Argyris and Schön (Argyris 1992, Argyris and Schön 1996) suggest that learning occurs at two basic levels in an organization — single-loop or double-loop. The former is "concerned primarily with effectiveness: how best to achieve existing goals and objectives, keeping organizational performance within the range specified by existing values and norms" while the latter involves "inquiry through which organizational values and norms themselves are modified" (Argyris and Schon 1996: 22). Both single- and double-loop learning involve an iterative process in which information is processed in order to affect decisions.

It is important to note that learning processes are frequently subject to a series of social and institutional processes that are interpretative, symbolic, and power-laden. For example, policy and program evaluations can be undertaken for the symbolic purpose of legitimating existing activities rather than for identifying problematic areas for improvement. It is by no means unusual or uncommon for organizations to engage in such ceremonial activities, some of which may involve a decoupling of information from decisions (Feldman and March, 1988; Meyer and Rowan, 1977). In addition, information that receives attention in a decision process is not necessarily the information that would be most valuable for improving effectiveness or performance.

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[68] A distinction is made between information and knowledge. Knowledge arises from the processing or analysis of information (Edwards 1997), as well as from the conducting and analysis of action.

[69] Learning is only one of many processes yielding organizational change (e.g., changes in organizational routines can be brought about through new laws which mandate procedural changes). Moreover, learning is not always an intentional process, and it does not always lead to improvements in an organization's performance (Levitt and March 1988: 333, Scott 1992: 110)..

Learning in Environmental Policy Contexts

Learning in a policy context is considerably more complex than learning in organizations for a variety of reasons including, but not limited to: i) policymaking and implementation involve multiple organizational actors and political interests; ii) policymaking occurs in a political arena, while implementation occurs in an administrative one, although the distinction is porous and sometimes artificial; iii) time lags between policymaking and policy implementation are long, often extending into several years if not decades; and iv) causal relations between policy choices and impacts are difficult to establish or predict, given the large number of possible variables and confounding factors. What this suggests for examining learning in policy contexts is that it makes sense, at the very least, to examine policy processes over long time frames and to have conservative expectations about the potential for actual learning. It also suggests that a multi-stakeholder approach to examining policy can be useful for identifying options, alternatives, and differential impacts.

Pieter Glasbergen's (1996) work on environmental policy in the Netherlands distinguishes among three kinds of policy learning (as described by Fiorino 2001: 324):

- *Technical learning*—involves "a search for new policy instruments in the context of fixed policy objectives. Change occurs without fundamental discussion of objectives or basic strategies." This may be seen as a form of *single-loop* learning since it does involve a questioning of basic goals, objectives, or problem definitions. The approach of policy makers to environmental problems is hierarchical and prescriptive, drawing upon instruments with which they are familiar: regulations, oversight, and enforcement.

- *Conceptual learning*—involves "a process of redefining policy goals and adjusting problem definitions and strategies." In this type of learning, policy objectives are debated and strategies reformulated. Because it requires new conceptualizations of problems and objectives (such as sustainability and ecological modernization), this may be seen as a form of *double-loop* learning.

- *Social learning* — involves both technical and conceptual learning, but "it emphasizes relations among actors and the quality of the dialogue." In other words, it stresses the importance of multi-stakeholder views and information for improving both technical and conceptual learning.

These three types of learning may be viewed as complementary rather than mutually exclusive. In addition, Glasbergen's typology suggests that the institutional context of learning is crucial, as this is what shapes the relationships among actors and the quality of social learning. It is therefore impossible to separate learning about environmental policy from the legislative, legal, administrative, and democratic institutions that frame it. This implies the need for reservation and caution in attempts to transfer policy successes in one country to another, given the considerable variation in institutional contexts.

Examples of Social Learning in the Context of Environmental Priorities

It is noted above that learning involves generating knowledge by processing information or events and then using that knowledge to cause behavioral change. It is also noted that dialogue among actors and constant evaluation was also important. The examples below attempt to illustrate behavioral change linked with priority environmental issues. One example, the evolving situation with respect to matching water rights with water scarcity in Mexico has already been described earlier.

In the 1970s, the conventional wisdom was that high ambient concentrations of total suspended particles (TSP) represented a serious health problem. More recently, with improvements in measurement technologies and analytical techniques, fine particles with diameters of 2.5 microns or less appear to be the real culprits. This finding, in turn, has lead to significant changes in air pollution control strategies in the U.S. and other countries. In Colombia, for example, through a dialogue on the Country Environmental Analysis during 2004, the importance of fine particles with diameters of 2.5 microns or less (PM 2.5) on health impacts is increasingly being recognized, and the government intends to move ahead with the installation of a monitoring system for PM 2.5 to obtain better information for decisionmaking on air pollution control strategies. This illustrates the importance of assuring that systems of evaluation are not static, and are able to adjust to new developments in science, technology, and other fields.

The other air pollution story that illustrates behavioral change is the phaseout of lead in gasoline in a fairly short time frame, due to a better understanding of its health impacts on children, as well as better knowledge, based on other country's experiences, on how to move forward and implement such a policy. The story of indoor air pollution, however, is still at an early stage. As little as ten years ago, indoor air pollution was not considered to be a major health threat. Today, together with water-borne diseases, it appears on the list of top ten causes of illness and death in the World Health Organization's Global Burden of Disease report (WHO 2002). Recent WHO estimates indicate that indoor smoke from solid fuels causes 1.6 million deaths annually. This is not because the problem did not exist ten years ago. Only with the generation of information, and the processing of that information, it is becoming clearer that this form of pollution affects principally millions of women and children in poor rural families who depend on firewood for cooking and heating. Some countries are realizing the importance of this and acting on it. Based on a recent ongoing review of Poverty Reduction Strategy Papers, many others have still not grasped the importance of placing this issue high up on the policy agenda. A recent study in Guatemala revealed that even though fuelwood is the dominant cooking fuel in 97 percent of households in rural areas, exposure monitoring studies reveal very high levels of PM 2.5 in rural households, and between 1997 and 2000, pneumonia was the single most important cause of infant death in Guatemala, accounting for 36 percent of all registered deaths among infants in 2000, the Ministry of Health's Environmental Unit's primary focus was still on urban air pollution, rather than indoor air pollution, which clearly has a more severe effect on child health in Guatemala (Ahmed and others 2005).

Another example of behavioral change in a fairly short space of time has been the transformations in certain cities, such as Bogotá in Colombia, and Curitiba in Brazil to change the concept and expectations with respect to the quality of city life among their citizens. In Bogotá, an increase in green spaces, in pedestrian walkways, in bike paths, and the introduction of a bus mass transit system, as well as the introduction of an annual "day without a car" during the short administration of Mayor Penalosa in the late 1990s has changed citizens' expectations with respect to the quality of city life.

Clearly systems for monitoring and evaluation that are publicly available seem especially crucial, not only for technical learning but also for purposes of democratic legitimacy and public confidence. This involves the use of both ex-post evaluations and ex-ante assessments of policymaking and impacts built on broadly shared sustainable development goals. Efforts by communities-of-participation to evaluate experiences to avoid learning traps are also crucial. Sometimes, things do not seem as they appear. An example is the common misconception of the critical factors behind the success of Colombia's Cauca Valley Corporation (CVC)'s successful water pollution control program, which has led the CVC to emphasize cooperation with industry, de-emphasize strict enforcement of regulations and experiment with effluent charges. A more thorough analysis demonstrates that an important factor for the success of the program was citizen pressure, negative publicity and policies of parent transnational companies calling for the use of environmental audits to facilitate compliance with environmental rules (Sanchez-Triana and Ortolano 2001).

Ultimately, however, promoting social learning in environmental policy appears to be less about developing technical measures or benchmarks and monitoring systems, and more about creating a culture of stakeholder involvement and scrutiny among policy makers and implementers. Improving policy learning—technical, conceptual, and social—relies on enhancing communication and dialogue among actors, and constant evaluation. Which agency should be responsible for implementing learning mechanisms is very country-specific. Such a role could be carried out by a powerful environmental agency, by a planning agency, by an auditor general's office, among other options.

In closing, social learning allows attention to be allocated back to the priority environmental issues, allowing for incremental improvements over time as states move back through the policy formulation and implementation process but with continually broader perspectives and increased knowledge on how to achieve more sustainable environmental outcomes. .

4.5 Evolving Policy-Based SEA to Bring in Institutional and Governance Dimensions

The preceding sections discussed four institutional elements: priority setting, stakeholder representation, accountability, and learning that, in theory, appear to be important elements if the policymaking and implementation process is to be more successfully influenced. This final section reiterates the argument presented in preceding sections of this report that in order to better influence the policymaking and implementation process,

policy-based SEA needs to evolve away from a focus on producing an output (e.g., report), associated with only a small part of the policy formulation process to a continuous-process that brings in institutional and governance dimensions, in addition to the technical aspects that are typically strong in SEA. In particular, SEA needs to be applied as a tool to take advantage of windows of opportunity that occur when there is a concurrence of issues, problems, solutions, and people in the context of policy decisionmaking.

Public participation in the policy-based SEA process needs to move far beyond a public consultation to identify significant issues and to seek feedback to a more continuous process where policymakers are accountable to citizens for their actions on a continuous basis, particularly those citizens who are disproportionately affected by environmental degradation and who are less powerful in voicing their needs.

The above suggestions represent an ideal framework for public policymaking. Long periods of time and continuous engagements will be necessary to strengthen institutional capacity for good environmental governance. The willingness to engage may rest in public awareness of the severity of environmental degradation and its direct impacts on productivity or investments to build capital (social, natural, and physical). The next chapter discusses the role of development agencies in such an approach.

Chapter 5
The Role of Development Agencies in Implementation

The World Bank and other development partners have a stake in supporting countries to move towards strengthening institutional capacity, with the ultimate objective of improving the qualities of growth and life through better governance.

This chapter is divided into three sections: (i) the first focuses on the continuing role of agencies to help countries assess existing institutional structures to get a better understanding on how these could be more effective in the development and implementation of sustainable public policies; (ii) the second focuses on the use of development agency instruments to support countries to incrementally adapt or change its existing institutional framework to optimize their potential for improving environmental sustainability outcomes; and (iii) finally, how development partners can assist countries to ensure continuity with such institutional and policy reform efforts, which are inherently long-term efforts.

5.1. Using Analytical Work, including Institutional Assessments

The previous chapter described some institutional aspects that are important if environmental considerations are to be integrated into policy formulation by countries in select sectors or thematic areas. This section focuses on how development agencies can support countries to assess their existing institutional processes and help them to identify how these can be adjusted (ideally at the margin) in order to play a more effective role in the development of sustainable public policies.

No Cookie-Cutter Solution

As has been described earlier, there is no cookie-cutter solution that one can apply or, indeed, should apply, with respect to putting such institutional processes in place in a particular country. Rather, given that the processes described are implemented by the country, it is important to first gain an excellent understanding of existing institutional processes linked to the four key elements in Chapter 4, from the perspective of formal legislation as well as the way that the processes are implemented in the particular cultural context of a country. Next, with this detailed understanding, it is important to consider what can be changed marginally in order to be acceptable but which will result in an incremental step forward in designing and implementing sustainable policies. The examples in Chapter 4 illustrate well this incremental approach, which has a positive outcome in one country, but would not necessarily have the same impact, if applied in other country contexts.

Such an assessment needs to be done in close conjunction with the country, including both country nationals (who understand the country context the best) as well as third parties who can bring to bear international experience, and thus put on the table a multitude of options. In that context, development agencies could play a role, in close conjunction with country governments, to carry out such detailed institutional assessment

of the four key elements in a process-based SEA. Such assessments are mechanisms for joint learning for both country and World Bank officials. Government ownership is clearly crucial if there is to be a commitment toward continuous improvement.

A second area where development agencies currently play a major role and need to continue to do so is with raising attention to priority environmental issues associated with development needs. Again the needs are very different, depending on the country. A variety of tools are available and the Bank has financed many studies using tools described in Section 4.2, such as CRAs, cost of degradation studies, PPAs, tools in the PSIA toolkit, among others. The first building block of the Country Environmental Analysis (CEA) also highlights the need to set priorities, but previous CEAs display a wide variation in the way that they implement this. It is important to note that this study discusses setting environmental priorities linked with long-term sustainable growth. Other priority exercises may focus on priority issues more generally for a government or priorities among a set of select environmental issues or priorities for donor support. These are clearly different analyses, and no less important, but not relevant to the discussion in this study.

Examples of World Bank Instruments for Conducting Institutional Assessments

There are a multitude of World Bank instruments to conduct institutional assessments. These include Country Environmental Analysis (CEA), Country Social Analysis (CSA), Institutional and Governance Reviews (IGRs), among other tools. They typically tend to be conducted in silos. For example, the CEA focuses only on priority environmental issues, and then conducts assessments of policies, institutional framework and performance in the context of those environmental priorities. The CSA is an instrument for upstream analytical work in order to identify key opportunities, constraints and risks arising out of the social context linked to the World Bank's Country Assistance Strategy in a country. IGRs, on the other hand, assess institutional roots and political dynamics underlying weak government performance and hence prioritize reform measures.

All these tools have a *raison d'être* beyond the institutional analysis that is being discussed in this study, namely of the four key institutional elements proposed in this report as being important in the context of a policy-based SEA. So, in theory, any of them could be used to conduct such analysis or indeed, even other sector work. The important factor, however, is that one conducts an analysis or assessment that goes beyond the biophysical environment to also include social and economic dimensions. An example of such an analysis can be found in the underlying studies conducted as part of the Colombia CEA.

Linkage with World Bank Policies

Policy design and formulation is directly linked with development policy lending and the underlying Operational Policy (OP) 8.60 that governs this lending. Under OP 8.60, for each development policy loan (DPL), the World Bank is required to determine whether specific country policies supported by the operation are likely to have significant effects

on the country's environment, forests, and natural resources. For policies with likely significant effects, the documentation for the operation that is submitted to the World Bank's Board is required to assess the borrower's systems for reducing adverse effects and enhancing positive effects associated with the specific policies being supported. The policy also emphasizes upstream analytical work as a source of information for the analysis of environmental effects, as well as for the institutional analysis. If there are gaps in analytical work or shortcomings in the borrower's systems, then the program documentation should describe how such gaps or shortcomings would be addressed before or during program implementation, as appropriate. In conducting this analysis, the World Bank is expected to draw upon analytical work conducted by the Government, the World Bank, or other third parties.

Typically the preparation of DPL programs is done in a short time frame between two and six months, and the details of the program only become evident about a month before the program is sent to the Board for approval.[70] Therefore there is wide recognition that any gaps in knowledge or in terms of institutional capacity gaps linked with policy design and implementation, have to be addressed over a longer period of time, and using a variety of instruments, including SEAs, rather than just within the context of the loan under consideration.

5.2. Using Technical Assistance and Lending Instruments

If a country decides to adjust existing institutional processes so that they are more effective in designing sustainable policies, a different set of instruments are available in development agencies to support countries in implementing these changes. The instruments are predominantly of two types, and sometimes a combination is best suited to the country's needs. These two types are:

1. Technical assistance activities, in which there is much more detailed day to day involvement with a country as it moves forward to make these changes and where either a loan or a grant may finance the activities, thus ensuring initial financial sustainability; and/or

2. Loans that support policy and institutional reforms, such as DPLs, in which a country moves forward with implementing its institutional reforms in a mutually-agreed direction, and where the loan goes directly to the Finance Ministry, thus providing them with leverage to bring different sector ministries to the table in national interests. In such a case, the loan monies may not finance the activities, and it is important for the country to make provision for these resource needs. An example of this type of loan is the Mexico EnvSAL, which focuses on integrating environmental considerations into key sectoral policies. Sector reform loans, such as the Colombia and Argentina Water and Sanitation Reform loans or the Bulgaria Privatization Adjustment Loan are examples with a single sector focus. In all these cases, instruments that can operate over a longer time frame, such as programmatic

[70] This is typically just before appraisal, at the Regional Operations Committee Meeting, which usually takes place about a month before the program document is sent to the Board.

approaches are favorable, given the time to implement such changes and to assess changes in environmental outcomes.

5.3. Ensuring Long-Term Engagement

Finally, it is important to remember that typically policies and institutions only change incrementally over a long period of time. Hence, a long term view is essential, particularly one which seeks to build environmental constituencies over time and demand better environmental governance from their elected representatives. After all, this is the ultimate goal expressed in MDG No. 7, target 9, namely ensuring environmental sustainability. What role can development partners play to help countries "stay the course"?

One potential role is linked to helping countries that transition from one administration to the next, where there is no stable civil service. In such cases, conveying a consistent message from one administration to the next through Policy Notes or other means is important. Another way of achieving the same objective is through setting up a programmatic approach, such as a DPL program that is implemented over more than one administration. An example of this is the Mexico EnvSAL program, which consists of three separate loans over a period of about 6 years. The third operation of the program is expected to take place during the new administration, compared with the first two operations, which have taken place during the Fox administration. Indeed, a major reason for the Mexican government to take the second EnvSAL loan has been this continuity factor, particularly since they are currently in a favorable fiscal environment where oil prices are high and the need for external debt is low, and hence they are not keen to incur additional debt.

Another role is for development agencies to be consistent in the dialogue with clients with respect to key priorities over long periods of time, extending well beyond that of country assistance strategies. It is essential that such dialogue is backed up by detailed analysis and data. An example of this is the continuous dialogue on priority environmental issues across administrations, through a series of instruments, including sector studies, technical assistance, and lending instruments, as in the case of India.

Ultimately, however, it is essential for development agencies to work over long periods of time with countries to help build strong national constituencies that will help ensure that countries themselves "stay the course." Development agencies' support to build a culture of monitoring and evaluation in countries is also essential so that countries themselves are continuously assessing outcomes, and can measure positive results. In the long run, the presence of national environmental constituencies is likely to be a key factor in ensuring long-term continuity for countries towards a path that integrates both environmental sustainability and economic growth.

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