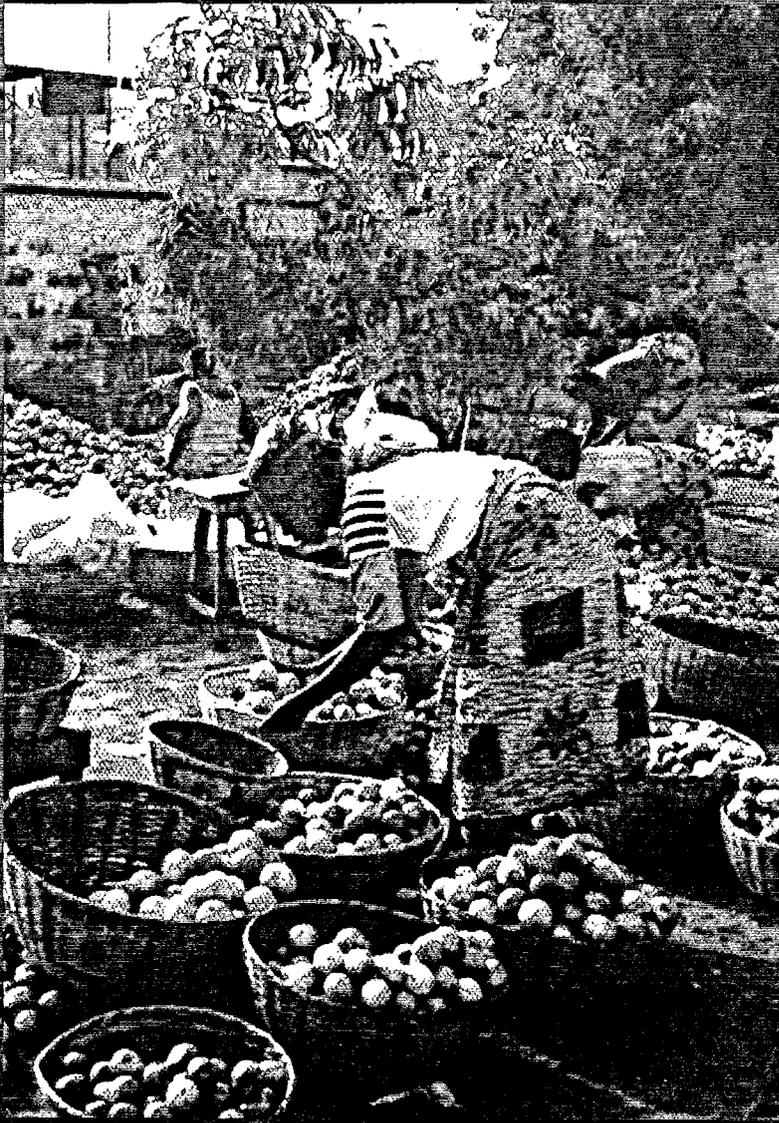


**ENVIRONMENTAL
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IN AFRICA
A World Bank Commitment**

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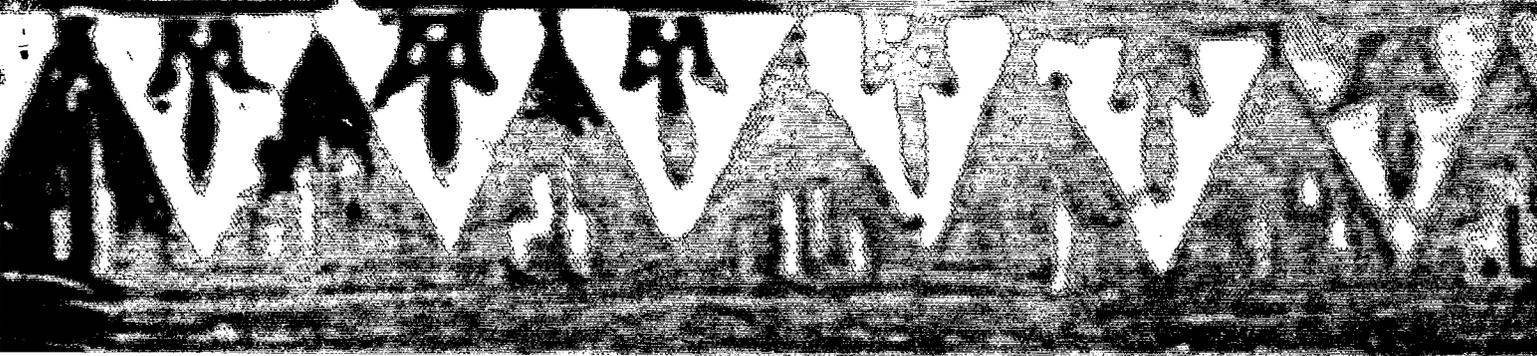


**Proceedings
of the Durban,
World Bank
Workshop
June 25, 1995**

**Robert Goodland
Jean-Roger Mercier
Shimwaayi Muntamba
Editors**

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Environmental Assessment (EA) in Africa
A World Bank Commitment

Proceedings
of the Durban (South Africa) Workshop
June 25, 1995

**Environmentally Sustainable Development Division
Africa Technical Department (AFTES)**

**Land, Water & Natural Habitats Division
Environment Department (ENVLW)**

**THE WORLD BANK
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**The views and interpretations in this document are those of the authors,
and do not necessarily represent the opinions of the World Bank
or any of its affiliated organizations.**

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Abbreviations and acronyms

AFTES	Africa Technical Environmentally Sustainable Development Division
AID	US Agency for International Development
AMCEN	African Ministerial Conference on Environment
AREMIS	Africa Region Environmental Monitoring Information System
ARIS	Annual Review of Investments
ARPP	Annual Review of Project Performance
AT	Appropriate Technology
C/BA	Cost Benefit Analysis
CAP	Common Agricultural Policy (of EC)
CAS	Country Assistance Strategy
CEA	Cumulative Environmental Assessment
CEC	Commission of the European Communities
CEM	Country Economic Memorandum
CESP	Country Environmental Strategy Paper
DAC	Development Assistance Committee (OECD)
DG	Directorate General of EC
DSM	Demand Side Management
EA	Environmental Assessment
EAP	Environmental Action Plan
EAR	Environmental Assessment and Review
EC	European Community
EDI	Economic Development Institute
EE	Environmental Economics
EIA	Environmental Impact Assessment
EIS	Environmental Information System
EMEMP	Environmental Mitigation, Evaluation and Mitigation Plans
EMP	Environmental Management Program
EPA	Environmental Protection Agency
EPC	Environmental Protection Council (Ghana)
ER	Environmental Review
ERR	Economic Rate of Return
ESA	Environmental Sustainability Assessment
ESD	Environmentally Sustainable Development
ESP	Environmental Support Program
EU	European Union (formerly European Economic Communities)
FAO	Food and Agriculture Organization (of the United Nations)
FCCC	UN Framework Convention on Climate Change
FEARO	Federal Environmental Assessment Review Office (Canada)
FEPA	Federal Environmental Protection Agency (Nigeria)
FSU	Former Soviet Union
GATT	General Agreement on Trade and Tariffs
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GIC	Ghana Investment Centre
GIS	Geographic Information System
GIS	Geographic Information System
GTZ	Gesellschaft für Technische Zusammenarbeit
HMSO	Her Majesty's Stationery Office
I/O	Input/Output

IAIA	International Association for Impact Assessment
IBRD	International Bank for Reconstruction and Development (World Bank group)
ICZM	Integrated Coastal Zone Management
IDA	International Development Association (World Bank group)
IEM	Integrated Environmental Management (South Africa)
IEPS	Initial Executive Project Summary
IFC	International Finance Corporation (World Bank group)
IIED	International Institute for Environment and Development
IISD	International Institute for Sustainable Development
IMEPCC	Inter Ministerial Environmental Policy and Coordinating Committee (Ethiopia)
IMF	International Monetary Fund
IQ	Intelligence Quotient
IRR	Internal Rate of Return
IUCN	World Conservation Union (formerly International Union for the Conservation of Nature)
LDC	Less Developed Country
LRMC	Long Run Marginal Cost
ME	Ministry in charge of Environment
MEPNR	Ministry of Environmental Protection and Natural Resources (Russia)
MET	Ministry of Environmental Affairs and Tourism (South Africa)
MFI	Multi-Financial Institutions
MIGA	Multilateral Guarantee Agency
MOS	Monthly Operational Summary
MW	Megawatt
NAFTA	North American Free Trade Agreement
NEAP	National Environmental Action Plan
NEMA	National Environment Management Authority (Uganda)
NEPA	(US) National Environmental Policy Act
NEPA	National Environmental Protection Authority (Ethiopia)
NES	National Environment Secretariat
NGO	Nongovernmental Organization
NPCS	National Programme Coordination Secretariat
NPV	Net Present Value
NPW	Net Present Worth
NRM	Natural Resources Management
OD	Operational Directive
ODS	Ozone Depleting Substances
OECD	Organization for Economic Cooperation and Development
OED	Operations Evaluation Department
OMS	Operational Manual Statement
OTA	Office of Technology Assessment (US)
PEAR	Project and Environmental Assessment Review
PER	Public Expenditure Review
PPF	Project Preparation Fund
RAF	Réforme Agraire et Foncière
REA	Regional Environmental Assessment
RED	Regional Environmental Divisions
SA	Social Assessment
SAL	Structural Adjustment Loan
SAR	Staff Appraisal Report
SEA	Strategic Environmental Assessment

SEE	State Ecological Expertise (Former Soviet Union)
SIA	Social Impact Assessment
SNA	UN System of National Accounts
SSA	Sub-Saharan Africa
TARDA	Tana and Athii Rivers Development Authority
TNC	TransNational Corporation
TOR	Terms of Reference
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
USAID	United States Agency for International Development
VROM	Netherlands Ministry of Housing, Physical Planning and the Environment; Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer.
WB	World Bank
WHO	World Health Organization

Contents

Preface.....xi

Summary and conclusions.....xiii

Presentations

Strategic Environmental Assessment: Strengthening the EA Process
Robert Goodland & Robert Tillman..... 1

**Harmonization of EA Procedures And Requirements between the World
Bank and Borrowing Countries**
Andrei Barannik & Valentina Okaru.....35

**Public Participation in EA in Bank-supported
Projects in Sub-Saharan Africa**
Shimwaayi Muntemba.....65

**Influence of EA on the Design of World Bank-financed Projects
in Sub-Saharan Africa, *Jean-Roger Mercier & Olav Kjørven.....81***

**Integration of EA in Project Analysis, *Patrice Harou, Olav Kjørven
& John Dixon.....107***

**Environmental Management: Approaches And Tools
for a Rapidly Urbanizing World**
Josef Leitmann.....123

Environmental Management Capacity Building in Africa
Arne Dalfelt & Patrice Harou.....139

Questions and answers.....153

Communiqué from High-level African Ministers Meeting.....157

Coda.....161

List of participants.....163

Preface

The workshop linked the African Ministerial Conference on Environment (AMCEN) – 23rd and 24th of June – and the annual meeting of the International Association for Impact Assessment (IAIA) – 26th through the 29th of June. AMCEN proposed environmental policies, the EA workshop made them pragmatic, and the IAIA Conference built on and extended the EA findings. All events took place in Durban, South Africa.

The AMCEN meeting, organized by UNEP, sparked an intense debate among participants, among whom were representatives from the donor community and national and international NGOs. The final communiqué (annex 1) outlines the commitments made during that meeting.

The one-day World Bank workshop built on these two intense AMCEN days. The dynamic involvement of the 200 attendees ensured an interactive and productive workshop.

Robert Goodland and Robert Tillman showed Environmental Assessment's role in decision-making and argued for a broader and more strategic use of the EA tool. EA will be essential as a sustainable development tool when used for sectoral and/or regional approaches. Goodland and Tillman urged a shift from reactive, project-focused EA to a broader proactive upstream EA of programs, policies, and sectors.

At the project specific EA level, Jean-Roger Mercier and Olav Kjørven reviewed six years of activities in Africa within the context of World Bank regional activities. They assessed EA's influence on project design and implementation and identified measures to increase this influence. They found a fluctuating degree of influence from one project to the next, and suggested that EA's influence could be more systematic with more emphasis on Mitigation Plans, increased stakeholders' participation (increased local/national capacities), better composition of EA teams, improved donor coordination, and better monitoring.

Five different ways of enhancing EA effectiveness, all applicable to Africa, were investigated:

- harmonization of national and World Bank EA requirements
- and procedures
- participation in EAs
- integration of EA in project preparation
- EA capacity building
- new tools for urban environmental management.

Andrei Barannik and Valentina Okaru maintained that harmonizing EA procedures eases project processing and helps arrange donor funding in borrowing nations. The approach taken to EA harmonization in the Former Soviet Union states – as demonstrated in a seminar held between the World Bank and the Russian Federation in February 1995 – could influence future activities in Sub-Saharan Africa.

Shimwaayi Muntemba investigated increased stakeholder participation, categorizing the various degrees – from cooption to empowerment, with all the intermediary steps (one-way information, consultation, development of partnerships). The Bank's first years of EA policy have not been optimal, but new developments in

EA in Africa: A World Bank Commitment

EA preparation show a marked improvement, and a strategy to enhance stakeholder participation in EA is proposed.

The integration of EA in project preparation is key to its effectiveness. Patrice Harou, John Dixon, and Olav Kjørven looked at the relationship between EA and economic analysis, concluding that both the input and output schedule of the project analysis are crucial to determining investment in the EA.

Patrice Harou and Arne Dalfelt experimented with environmental management sensitization and capacity building in Africa for green (desertification), brown (urban and industrial pollution), and red (involuntary resettlement) issues. The authors described the networks being created and maintained (e.g., for environmental economists) and the EA capacity building processes taking place throughout Africa. The authors concluded that more efforts are needed, especially in coordination with other donors.

Finally, in a somewhat provocative manner, Josef Leitmann recommended the use of pro-active urban environmental planning tools to overcome bureaucratic aspects of urban EA. Experience in Asia and Latin America and – to some extent – Africa has shown that the very participatory preparation of Local Environmental Action Plans, with the help of economic analysis, has improved management of urban ecosystems. The author also announces an initiative for Managing the Environment Locally in Sub-Saharan Africa (MELISSA).

Environmental Assessment – or Environmental Impact Assessment as it is more commonly known in Africa – is a relatively new tool in the Region. The editors welcome feedback from interested readers.

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Summary and conclusions

Colin Rees (Chief, ENVLW)

Historically, the role of development projects was aimed at removing strategic economic bottlenecks – such as a lack of basic infrastructure – and creating the basis for economic growth. However, as the often associated negative environmental and social impacts became better understood, measures were formulated and implemented to identify and mitigate them.

Environmental assessment has been one of the most effective of these measures – and now many development institutions and developing countries in Africa have introduced EA requirements and regulations into their development activity. EAs treat environmental issues in a timely and cost-effective way, allowing projects to realize environmental and social benefits, rather than simply reacting to potential costs.

Since 1989, EA has been a requirement for Bank-funded projects, the primary responsibility for the EA process lying with the borrower; the Bank's role is to advise and ensure that practice and quality are consistent with EA requirements. Between 1989 and 1995 more than 1,000 World Bank-funded projects were screened for their potential environmental impacts involving different regions, sectors, and project-types. The accumulated experience of these activities was reviewed in a Bank publication entitled "Environmental Assessment's Challenges and Good Practice" (June 1995) and made available to the Durban Meeting for discussion during a one-day seminar sponsored by the Bank.

The discussions proved a rich and rewarding experience for all parties, the salient issues centering on institutional capacity building and the desire of Africans to assume more ownership of the EA process; other topics drawing attention included harmonization of donor/government procedures and public participation. The nature of the discussions may be summarized as follows:

Building capacity

Capacity building is a long-term process – but many borrower countries still lack formal EA requirements and the capacity to conduct and manage EAs, thereby placing major constraints on effective EA implementation. However, such capacity may be strengthened through environmental institution building via technical assistance, training and advice. Current training is targeted at central, provincial and local government agencies and industry, banks, universities and local NGOs. This is laudable, but participants urged the Bank to give more support to emerging centers of excellence. This would help integrate experience gained in the Africa region and enhance dissemination of good practice in a more appropriate context.

Harmonization

Coordination among bilateral and multilateral institutions (like the World Bank) and international NGOs involved in capacity building efforts is crucial and can produce significant cost-savings. Because there are differences between the Bank and local procedures, continuing efforts should be made to resolve such discrepancies on a country-by-country basis. Matters requiring particular attention include spurring the development of technical capacity in the private sector, consideration of investment alternatives, and engaging the public (especially at the local level) in the process of development planning.

EA in Africa — A World Bank Commitment

Effective consultation with locally-affected people can play a key role in identifying and assessing environmental impacts, comparing alternatives, designing appropriate mitigation measures, and building local ownership and participation into the development process. In African countries where EAs have employed demonstrable levels of participation, one primary factor in their success was the use of EA consultants knowledgeable about participatory techniques. Implementing agencies in borrowing countries should be strengthened to ensure adequate institutional resources to plan and carry out consultations with stakeholders and that sufficient funds be allocated to finance the consultation process.

Public
Participation

EA is proving valuable at sectoral and regional levels and will remain a predominant tool for environmental planning. However, an important step toward the full integration of the environmental dimension into mainstreaming economic decision-making must be to expand the application of EA to provide guidance to policy-based lending.

Strategic Environmental Assessment

Strengthening the Environmental Assessment Process

Robert Goodland & Gus Tillman

Summary

This paper urges a shift from reactive, project-focused EA to a broader proactive upstream EA of programs, policies, government budget processes, treaties, privatization, structural adjustment and transnational corporations. The basic differences between project-oriented EA and the broader scope of Strategic EA are discussed. The early, but minimal, advances toward the proposed "upstream" process of Strategic EA in Europe and North America are outlined.

The paper also contains a brief discussion of earlier forms of Strategic EA, including Regional, Sectoral, and Cumulative EAs.

Acknowledgments

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Contents

1. INTRODUCTION _____	3
Why Strengthen Current EA? _____	3
1.1 History _____	4
2. TRADITIONAL REACTIVE EA _____	6
2.1 Project-Level EA _____	6
2.2 "Analysis of Alternatives" in Standard EA Procedure _____	7
2.3 The Scope of EA _____	7
2.4 Social Assessment _____	7
2.5 Early Warning _____	8
2.6 Participation and Transparency _____	9
2.7 Regional EA _____	10
2.8 Cumulative EA _____	10
3. STRATEGIC EA _____	12
3.1 Sectoral EA _____	12
3.2 Programmatic EA _____	14
3.3 Strategic EA of Treaties _____	15
3.4 Strategic EA of Privatization: _____	15
3.5 SEA for TransNational Corporations _____	16
3.6 Strategic EA of Structural Adjustment _____	16
3.7 Strategic EA at the National-Level _____	18
Environmental assessment of national budgets _____	18
The Role of National Environmental Action Plans (NEAP) _____	20
3.8 Strategic EA for Environmental Sustainability _____	21
3.9 Internalization of environmental externalities for sustainability _____	22
3.10 Life-Style Changes for Sustainability _____	23
3.11 SEA of Global Issues _____	25
UN Biodiversity Convention _____	27
The Montreal Protocol: _____	27
4.0 CONCLUSION _____	28
GUIDE TO THE LITERATURE _____	29

1. Introduction

This paper contends that, to promote environmentally sustainable development, today's project-level environmental assessment (EA) approach needs to be extended 'upstream' in economic development work, into several non-traditional areas. Overall, EA needs five emphases:

- First, strengthen project-level EA, and ensure it becomes a project design influencing tool, parallel to and equivalent with engineering feasibility, and never a *post hoc* justification or cosmetic for a previously designed project.
- Second, EAs need to be used when a specific region (e.g., water basin or province) is slated for a number of development projects. This becomes a "Regional EA."
- Third, Cumulative EA should be routinely and systematically applied when a currently proposed project will be added to existing projects in the general area, and specifically takes foreseeable projects into account. Synergy between the proposed, existing, and foreseeable projects are addressed in CEA.

These first three refer mainly to project-level EA; they are traditional but reactive. The next two refer to Strategic EA and apply EA beyond the project level.

- Fourth, EAs of entire sectors, such as the power sector or the transportation sector, need to be completed preferably before selecting the next project in that sector. This is the role of Sectoral EA, a subset of Strategic EAs.
- Fifth, EAs need to be used in policy and program formulation, such as in designing structural adjustment, or in policy-based lending. EAs also should be used in national priority-setting exercises, such as the national budgeting process and in national approaches to environmental sustainability. EA of policies, programs, national budgets, legislation, and international treaties – what we call "Strategic EA" (SEA) – is the focus of this paper.

Why Strengthen Current EA?

Current project-level EA is becoming successful in improving the design of individual projects. Improving individual projects will still be necessary, and project level EA should be strengthened. But we now see that project-level EA, while increasingly necessary, is insufficient to improve economic development in developing countries up to any notion of acceptability. The world has changed greatly since EA began a quarter of a century ago. Now many countries want to become "sustainable," a goal scarcely heard of a decade ago. In addition, environmental quality has deteriorated in so many parts of the world that the project-by-project approach of conventional EA is no longer sufficient to ensure prudent environmental standards. As development agencies move from financing primarily infrastructure into combining that with purveying advice in national economic dialogues, the environmental implications of policies become more important than that of individual projects.

This paper briefly outlines the current status of conventional EA, then presents the case for moving into higher leverage "Strategic EA," or EA above the project level. This transition parallels the earlier transition in development circles from sole emphasis on projects to a new emphasis on macroeconomic improvements (e.g., Structural Ad-

EA in Africa — A World Bank Commitment

justment, & Green SNA). Since development specialists welcomed the macro-conditionality attached to structural and sector adjustment operations, similar macro-conditionality for environmental concerns should also be welcomed.

History

One historic starting point for the conventional EA of individual projects was the 1970 US National Environmental Policy Act (Goodland 1992). Before that, forms of what later became known as environmental assessment had started under town planning, land use, and other policies. But the 1969 US NEPA was the best known official start of formal EA. USAID claimed that NEPA did not apply to overseas projects, but were compelled to employ EA there in an out-of-court settlement in 1975.

The most recent challenge to NEPA was by the US National Science Foundation that claimed in 1994 that NEPA did not apply to US operations in Antarctica, and therefore they were not obligated to undertake an EA of trash incineration in their research station. NSF was sued by EDF, and the District Court of Appeals ruled that NEPA applies in this case. Now the US National Science Foundation has begun a strategic EA (technically, a "programmatic environmental impact statement" in US terms), which will include the next decade of activities and will address the US Antarctic Conservation Act and the UN Antarctic Treaty.

The World Bank began EAs of big infrastructure projects on a selective basis in the early 1970s. This became more formalized by the 1984 Comprehensive Environmental Policy, which required environmental analysis of projects likely to have major environmental or social impacts. Because there were no environmentalists in any country department to carry out this policy at that time, the policy was not complied with systematically. In 1989 the Bank adopted a formal requirement for EA, environmentalists were hired to encourage compliance with this policy, much EA training was provided for non-environmentalists, a voluminous EA Sourcebook was compiled (World Bank 1992), and the policy was greatly strengthened in 1991, up to the international EA standards then prevailing. Now there are systematic annual reviews of the implementation of EAs in the Bank, and these are working well to improve the EA quality of analysis and the effectiveness of mitigatory measures (World Bank 1995d).

Although still rare, the extension of EA into policy, plans, and programs has begun in developed countries. For example, programmatic assessment is provided for under the US NEPA, and has been used for a couple of decades in California on land use plans. SEA also is used in the Province of Ontario (Sadler 1994). The United Nations Economic Commission for Europe (UNECE) has established a task force to study mechanisms and implications for SEA. Canada, New Zealand, Australia and the Netherlands have prepared guidelines for Strategic EA. In the United Kingdom, environmental concerns must now be considered along with economic and social analysis for policy development in land use plans (Sadler 1994). The Netherlands has the most stringent approach for integrating EA into national industrial and waste treatment policies. That country has required Strategic EA since 1987; now their legislation is being strengthened (Netherlands, 1989, a, b, 1990, 1991, de Jongh, 1991). The European Commission (DG XI) proposed Strategic EA in its directive of 1991 and is drafting a further directive on SEA. Similarly, the Austrian Ministry of Environment is drafting SEA for national legislation. (Aschemann, 1995).

Environmental Assessment Types

Traditional Reactive EA

1. Project-level EA
2. Regional EA
3. Cumulative EA

Strategic Proactive EA

4. EA of Sectors
5. EA of Programs & Policies
6. EA of Structural Adjustment
7. EA of Privatization
8. EA of International Treaties
9. EA of National Budgets

The record for developing countries has been less impressive than industrial countries because financial and human resource constraints hamper adoption of Strategic EA. Bilateral and multilateral aid agencies have started to encourage EA further upstream in planning for developing countries. In the World Bank, Sectoral EAs are becoming more common, especially in the power, industry, and transport sectors. Coal India has just completed a Sectoral EA for all its 33 coal mine operations, under a World Bank assisted project. The Bank's (1992) EA Sourcebook has new sections on Sectoral EA, EA of International Treaties, and drafts for Regional EAs are under preparation.

2. Traditional Reactive EA

EA generally refers to the environmental assessment of a single project, such as one highway or one shoe factory. EA is defined as the process of evaluating the direct and indirect environmental and social implications of a proposed development project. It is meant to be a flexible process and can employ a large number of evaluation methods and techniques.

**Project-Level
EA**

Project-level EA has many strengths

EA is increasingly viewed as a process, not as a mandated document. EA is becoming more commonly parallel to and part of standard (pre-)feasibility engineering and economic project preparation and design. EA is less political than many other project analyses. EA focuses on previously selected projects; better EAs consider cumulative and regional impacts and any wider implications. As a rule, few EAs address impacts above the project level. Perhaps the greatest strength of project-specific EAs is derived from the vast experience gained in the decades since the practice became relatively routine. Although wasteful of resources and not recommended procedure, project-level EAs have led to some projects being dropped before appraisal, or even more costly, after appraisal. For example, Thailand's Nam Choan and Turkey's Karatepeke hydroprojects, and Colombia's La Fortuna Land Settlement were dropped after appraisal, largely or partly because of unfavorable EA findings. By dropping the worse projects and by accelerating the better projects, EA improves the project portfolio. But basically, project-level EA improves the design of projects. Better components are retained and questionable components are dropped or improved in design.

Project-level EA has some weaknesses

A single project-level EA has little leverage beyond the influence of the single project. Project-level EA is usually a piecemeal and retail activity with regard to sectoral or regional planning. In this case, EAs have to be repeated for each successive project. EA rarely influences which projects are selected to be prepared. EAs begin when a project has been selected. As a result, project-level EAs are perforce mainly reactive, in a field where proaction has become increasingly necessary. EA does not begin until a fairly well defined project is proposed, then EA is forced into reacting to the then relatively rigid proposal. Project EA does little to promote strategic vision. Project-level EAs are not effective in addressing areas of inaction, even in the no-project alternative case. EAs should always address the outcome of the 'no-project' alternative. The impacts of a no project alternative can exceed the impacts of the project. No power project may force peasants to cut more forests; no agricultural improvement project may force cultivation of marginal lands. Critics are often unaware of the costs of no project such as power outages, lousy roads, ineffective schools and clinics, and inefficient or unsafe water supply. On the other hand, if the EA reveals serious and unmitigable impacts, the project is often changed with major environmental benefits. EA should help decision-makers ascertain the when, where, how, and cost of proposed projects.

EA is often weak on indirect, secondary and synergistic impacts, unless the EA team is unusually qualified and well funded. Some still think of EA as a mandated document, rather than part of feasibility or as a valuable tool for standard project selection and design. Occasionally, the worst happens and EA becomes a *post-hoc* project justification cosmetic.

Often a major cost that should be debited to the project is omitted from the Terms of Reference (TOR) of the EA, either inadvertently or by design, such as excluding the costs of radioactive waste management from atomic energy projects. Some people still feel that EA is occasionally little more than a project *post hoc* justification or mitigatory exercise. In addition, project conditionality applying to environmental concerns is difficult to enforce. EA professionals must prevent EA from degenerating into a means of reducing the impacts of an already designed project. Given these inherent weaknesses, it is time to improve project-level EA, but also to move to a higher level of EA utilization.

“Analysis of Alternatives” in Standard EA Procedure

Many project-specific EAs are criticized for their failure to assess alternatives to the proposed project. In most sectors, there are a large number of potential alternatives, but the EA is constrained by budgets and each alternative to be assessed adds to EA costs. Sectoral EA can be helpful in eliminating some of the alternatives remaining on the grounds of cost, social, or environmental effects. Thus, at the end of a Sectoral EA, only the plausible alternatives remain, which ultimately reduces the cost of subsequent project-specific EAs.

Least cost analysis: Least cost analysis is routinely undertaken for economic costs in order to agree on the most economic sequence of projects. Rarely does least cost planning include social and environmental costs. Sectoral EA is essentially planning for the least environmental and social costs, as well as economic costs. Sectoral EA needs to be added to least cost planning in all relevant sectors. Sectoral EA needs to start before the next project can be proposed.

The Scope of EA

Agreement on the area of influence of project-level EAs is crucial for EA effectiveness. Still too often the proponent may arbitrarily exclude part of the legitimate scope of an EA by ruling that something is outside the projects area of influence. Such rulings are or should be entirely under the purview of the EA team, not the project proponent.

The EA area of influence now should routinely include the water catchment basins and airsheds of all project components, access roads, new resettlement sites, power lines, induced, secondary, or unplanned effects. It should include the ecosystem even when only part of the ecosystem is project affected. This is imperative for large and contentious projects; somewhat less so for smaller projects where potential impacts are clearly localized and reversible. Were this accepted definition fully implemented, the next full-scale and major project proposed would automatically trigger a Regional EA.

Social Assessment

In the World Bank and elsewhere, EA has routinely incorporated social impacts. In the World Bank's definition of environment, it is clear that social issues are to be included in EAs. Although this has become commonplace, some past social assessments may not have always been done as thoroughly as strictly biophysical or environmental assessments. Some EA regulations and a substantial number of EA reports still exclude social assessment. The EA profession should work to correct this failure. The main reason for this was that EA was done mainly by environmental scientists. The best EA teams, es-

EA in Africa — A World Bank Commitment

pecially more recently, include sociologists, anthropologists, and economists familiar with costing of externalities.

Now that social assessment has come of age, is it time to split social from EA? There are strong arguments for and against integrating EA with Social Assessment, but that is deferred to subsequent analysis. Occasionally, there is a need for social assessments without EA such as in areas which cause few environmental impacts — for example, telecommunications — but which have serious social implications. Carrying capacity, health impacts, and epidemiology are commonly handled by environmentalists, while sociologists do not usually deal with such impacts. Some EA professionals feel that social assessors should address such impacts.

One of the main impacts of involuntary resettlement is the environmental impact on the new settlement or host site, so EA and SA have strong linkages. Population pressures are not systematically addressed by either discipline, but need to be. There are pros and cons of splitting social from EA, but strength in unity argues for remaining together especially in view of the long and consistent arguments used in the 1970s to achieve multi-disciplinary teams for EA.

Early Warning

There should be a “whistle-blowers”¹ clause in EA contracts that encourages EA teams to say if the proposed project cannot be mitigated up to acceptability. This is difficult for an EA team just having begun a lucrative long term EA contract, so an easy way out is required: that is the whistle blower’s clause. At a minimum, EAs should be reviewed by agencies independent of the proponent agency. The national environmental agency should always review major EAs and preferably should be involved from the start of EA preparation. Often, big EAs employ a panel of experts which provides protection for whistle-blowers.

Development agencies in particular should foster earliest warnings from EA teams in such cases and see that they are not penalized for saving many months of work, and millions of dollars for their whistle-blowing. The clause would specify that draft EAs should be submitted in such cases to proponents plus an independent reviewer. The EA team thus voluntarily foregoing all but three months of, say, their two

Lesotho Highlands Water Project

In this project, the social and environmental assessments were conducted under independent contracts. While the identification of social issues was well done, the recommendations were not necessarily in tune with the natural resource constraints. A further complication was that social mitigation measures were not linked to engineering or construction benchmarks so that, while the engineering and construction went on or ahead of schedule, the social programs experienced great delays which increased the cost of the programs and threatened to disrupt the construction schedules. Had the social programs had the input of natural resource planners, more non-agricultural options for income generation would have been factored into the rural development program

¹ Whistle blowers are government or private sector employees who expose abuses in their own agency or businesses. Frequently, instead of being applauded for their courage and foresight, whistle blowers are penalized by their employer. The Public Employees for Environmental Responsibility (PEER) of Washington DC protects the rights of whistle blowers and offers annual awards for civic courage. The award was established “...to reward individuals...who, with integrity and at some personal risk, take a public position to advance truth and justice, individuals who challenged prevailing conditions for the common good”.

Strategic Environmental Assessment

year EA contract should collect a bonus and should be given preference by the proponent and the financing agency for future EA contracts. Possibly a Panel of Experts should be empowered to ask that question at about three months into the EA.

Conversely, if an EA team lets its contract run full term only to say at the end of their contract that the proposal is unmitigable so late in the day, the EA team should be penalized for its lack of earlier warnings. We feel that a good EA team normally will be able to make that professional judgment after about three months work. Whistle-blowers should warn the proponent of *pari passu* EAs that are concurrent with construction of the project. EAs undertaken with little or no chance of improving project design are doomed to near impotence from the start.

We were once contracted to do a one-month EA reconnaissance of a proposed second water supply reservoir for a medium-sized city in Latin America. We ascertained that the city water was not metered; had high losses, and major scope for conservation. We risked our contract by submitting a report after only three days comparing the impacts and costs of metering the city *vs.* the costs of building the second proposed reservoir. The city invested in metering, loss reduction, and water conservation which postponed the second reservoir for nearly a decade. One could say that the original TORs were deficient to the extent that they failed to provide for the possibility of metering and leak reduction. But TORs rarely include such options. For example DSM is rarely included in the TORs for a proposed electricity generation project.

Development agencies in particular should foster earliest warnings from EA teams in such cases and see that they are not penalized for saving many months of work, and millions of dollars for their whistle-blowing. The clause would specify that draft EAs should be submitted in such cases to proponents plus an independent reviewer. The EA team thus voluntarily foregoing all but three months of, say, their two year EA contract should collect a bonus and should be given preference by the proponent and the financing agency for future EA contracts. Possibly a Panel of Experts should be empowered to ask that question at about three months into the EA.

Participation and Transparency

"Sunshine is the best disinfectant!" Proactive information disclosure is a major prerequisite for transparency and participation. Consultation of the affected people has been mandated in many national and international EA procedures for years and is starting to work well. Major efficiency gains are achievable at low cost by including all the stakeholders in the decision-making process. Delays and mistakes are avoided or reduced by participation. Participation promotes sustainability by making the project acceptable to affected people. Participation promotes equity by empowering the poor in decision-making. While participation is mandated widely in project-level EA, it cannot influence project selection.

There is a social evolution from the early days following WW II or even before in certain projects. The evolution is: (1) being informed, (2) being consulted, (3) participating, (4) becoming partners. This evolution began by the proponent merely informing people that they will be affected in the near future by the project. People were left to their own devices to move before the reservoir started to fill. Later on, affected people were consulted on what options were being offered by the proponent. For example, the proponent may have asked if an oustee would prefer to be relocated to the nearby town or to a rural resettlement site. The big difference between consultation and participation is that in the latter the people have a genuine and influential role in project design. For

EA in Africa — A World Bank Commitment

example, project affected people may require that the reservoir size be reduced by lowering dam height to reduce flooding a certain village. Participation becomes partnership when the potentially affected people are empowered to the extent they may say that they do not want the project at all. Participation becomes powerful in Strategic EA because it influences which projects are taken up.

Regional EA

Regional EA (REA) is the process of determining the regional, cumulative environmental, and social implications of multi-sectoral developments within a defined geographic area over a certain period. Recently, if a number of infrastructure components are planned for a discrete region, then a Regional EA is undertaken, even if only one of the components in that region is slated to start in the near future. Often, REAs are undertaken when a 'new' or greenfield site is slated for a different type of development, such as the first industry, or the first highway, in an 'unspoiled' rural area. REAs are also commonly undertaken by provincial planning authorities when the province over which they exert control begins to 'fill up' with development, so that it has started to matter where the next emphasis for development will be slated.

Regional EAs evaluate all the existing and proposed projects in a discrete region such as a watershed, or a specific valley, or within a political administration. They are usually called for when an undisturbed or relatively pristine area is likely to be subjected to relatively intense development pressure for the first time, or when an area is fairly acceptable as is, but is slated for major development projects in the near future. For instance, REAs are successfully used to plan resettlement and development of areas recently freed up by eradication of Onchocerciasis in West Africa. REAs should address the cumulative impacts of the existing land use, then compare that with the expected impacts of the planned projects. Therefore, a great deal of overlap exists between Cumulative EAs and REAs. Individual project proponents usually undertake individual project EAs which should address regional and cumulative issues, whereas agencies with broader mandates, such as a valley authority, a regional development agency, or a provincial planning board without a specific project in mind often commission REAs ideally to become part of an established regional development plan. REAs are partly planning tools for an area. Their value is that they open up the discussion of better alternative development strategies for the area.

Cumulative EA

Cumulative EA (CEA) is the process of assessing the cumulative impacts of the currently proposed project added to existing developments in an area, and to the impacts of foreseeable projects in the same area, whether made more likely by the current project or not. Today's better EAs systematically address cumulative impacts and REAs, which by definition, include cumulative effects (Munn 1994).

As noted previously, CEA and REA overlap semantically. The distinction is not sharp and is one of focus: REA focuses on a specific geographic region, while including past, present, and future developments with an emphasis on resource allocation between competing uses. CEA focuses on the synergistic relationships between impacts from current, past and future developments, but also usually in a defined area. CEAs are used to assess the cumulative impacts of today's project added to existing projects in the same area, and taking account of foreseeable projects. Some countries (e.g., Canada) restrict CEA to future projects which are already approved (or nearly so), and

whose impacts are likely to interact with existing or proposed projects. If impact interaction is expected, then there may be no CEA.

This approach is not new. In fact, better project-level EAs have long addressed cumulative impacts and regional impacts routinely, but have often been limited to induced impacts. Induced development, those developments made more likely by today's project are routinely included in project-level EAs. For example, if a proposed dam needs an access road, the EA routinely addresses the impacts of the dam access road, as well as induced impacts such as planned or unplanned settlement along the road, facilitating human migration and settlement, deforestation or fuelwood collection and cultivation along the road, and so on. Often, "induced" or secondary impacts exceed primary impacts. For example, Nepal's 201 MW Arun hydroproject has a tiny reservoir (43 ha.), but a major 117 km access road. EA of cumulative impacts should be, but are not yet, standard operating procedure.

When a region is slated to have several major developments over a short time, an agency other than the proponent of the individual projects (e.g., county planning authority) may require a special cumulative EA that will assess the synergy – the interrelations – between the proposed project at a level rarely envisaged by each project-level EA but which should be. Cumulative EAs are prudent because the cumulative impact of all proposed projects may exceed the simple sum of the impacts of individual projects. Several piecemeal EAs might identify the problems, but probably would not prevent or correct them. The agency requiring the Cumulative EA could use the results in permitting some of the proposed projects with modifications, but not others.

The most obvious cumulative impact is in using up environmental assimilative capacity. There is enough assimilative capacity in the river for a single Kraft mill of a specified design and size, let's say, but not in addition to the effluent of the proposed sewage treatment plant, if water downstream is to remain effective for today's level of fisheries, or for removal of cremation ghat remains. The term cumulative EA is appropriate in this latter case. Such impacts could also be addressed in a regional EA (see above) and would or should be addressed in the better project-level EAs.

The proponent of the cumulative EA, different from the regional planning body, may be a national agency with the mandate of environmental management, such as an Environmental Ministry or an Environmental Protection Agency. It needs to be politically insulated from the regional body during CEA preparation if the cumulative EA is to be effective. Once prepared, the CEA must be internalized by the proponent planning body. Without necessary environmental autonomy, cumulative EAs can degenerate into *post hoc* justification of proposed regional plans, or be left to gather dust in agency shelves.

Caveat: In our experience, Regional EA and Cumulative EA are mainly undertaken when a new specific project is proposed for a region or in addition to existing projects. That is why we class REA and CEA with project-level EA. But occasionally some REA and CEA are undertaken without a specific new project in mind, and this should be encouraged. In such cases REA and CEA would become Strategic EAs, that is above the project level. We do not feel strongly whether REA EA should be classed in project-level or in Strategic EA (SEA).

3. Strategic EA

Strategic EA, or EA beyond the project level, has been defined as:

The formalized, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or program and its alternatives, the preparation of a written report on the findings, and the use of the findings in publicly-accountable decision-making (Therivel, et al. 1992).

Strategic EA is EA applied to policies, plans, or programs. Traditional reactive project level EA is necessary but not sufficient to exploit opportunities which exist today but which may be gone tomorrow. Reactive EA must be transformed into proactive or strategic EA. SEA improve investments over the long term and should be fed by long-term projections. Thus, Strategic EA is a process by which environmental implications are integrated into decision-making above the project level. SEA extends EA into non-traditional areas such as entire sectors, policies, and programs. Sectoral EAs are a subset of strategic EAs which have started almost a decade ago to great effect. Strategic EA has started internationally, and has been used most successfully in water supply, civil aviation, power supply, and waste disposal (Wilson 1993).

Strategic EAs — those which look at programs, policies, treaties, and other non-traditional areas — are the newest style of EA work. Strategic EA is the application of EA above the project-level. Although already promulgated by the EC and several countries, and although provided for by US NEPA, SEAs are still not routine. During the decades of development of trade agreements between USA and Canada, the treaty was not subject to EA procedures. This trend has started well in extending environmental analysis into whole economies, rather than into a single project. The Bank's "Economy-wide Policies and the Environment" shows how this can be achieved. The Netherlands are acknowledged leaders in Strategic EA.

Sectoral EA

Sectoral EA, the most common form of Strategic EA, is the process of examining potential environmental and social implications of all or most of the potential projects proposed for the same sector. Sectoral EA can influence project selection, which project-level EA mostly cannot. Sectoral EAs provide an environmental ranking of all proposed projects in one sector before pre-feasibility, and help decide in project selection (e.g. gas *vs.* coal *vs.* hydro *vs.* nuclear energy in the power sector; or road *vs.* rail *vs.* air in the transport sector).

Sectoral EA begins with a development objective or goal and then evaluates the numerous possibilities of meeting agreed upon results. Instead of beginning with, say, a pre-conceived proposal of a 200 MW coal-fired power plant at spot "x" on the map, a Sectoral EA would begin with the premise of meeting projected power needs by optimal methods, including energy conservation and development of renewable energy. Sectoral EAs reduce the costs of subsequent project-level EAs, but do not obviate the need for them. Sectoral EAs have started to be used, especially in improving traditional least-cost economic analyses into economic, social, and environmental least-cost sequences (World Bank, 1993). Power sector expansion sequences increasingly have environmental and social rankings alongside the conventional economic ranking, and this constitutes a form of Sectoral EA. Sectoral EAs are most frequent in the power sector

(e.g., Ventura Filho 1995 for Brazil; Meier & Munasinghe 1994 for Sri Lanka), less so in transport modal choice, and rare so far in the agricultural sector. The most recent case in which SEA is used in the transport sector is in Brazil's southern region in which IAIA's Brazil chapter has been contracted to undertake the SEA in a World Bank-assisted project.

In an ideal world, Sectoral EA would routinely become part of sectoral studies. When sectoral needs and priorities are established, Sectoral EA could provide planners with the most environmentally and economically sound strategy for meeting agreed upon development objectives. This would introduce non-traditional options into development planning at an early enough stage to permit extended dialogue with borrowers on innovative approaches. It would also increase the transparency of the decision-making processes.

As Strategic EA seeks to integrate environmental considerations into decision-making above the project level, Sectoral EAs are viewed as a subset of Strategic EAs. In the power sector, for example, once the case for new generation capacity has been made, demand side management is well in hand, Long Run Marginal Cost is being achieved etc., then Sectoral EA helps decide first what sort of new capacity would be preferable—for example, DSM & conservation *vs.* coal *vs.* hydro *vs.* gas *vs.* oil *vs.* nuclear energy.

The value of Sectoral EA is to gather existing data and examine it to detect gaps in time to start collecting data required to make informed decisions about the selection of the next project in the sector. Sectoral EA makes project-specific EAs much faster, cheaper, and more robust because data are already assembled into information management systems and data gaps are already identified. The great power of Sectoral EA is that it helps rank potential projects in an environmental sequence, so that environmentally better projects are taken up before environmentally weaker projects. Environmental ranking of all potential projects exposes society to tradeoffs. The ranking itself should largely be as a result of participation by civil society. By such rankings, SEA fosters transparency in long-range plans. This helps acceptance by taxpayers and affected people. It also decreases the likelihood of purely political decisions. Pork barrel selection of a project in a politician's home area is less likely because it becomes clear that better or cheaper sites or technologies are available elsewhere.

For example, if an EA team conducts an EA on a nuclear power plant, the team should first explore the possibility that demand management may reduce demand enough to postpone the need to increase capacity. Secondly, the team should determine if other generation alternatives are economically and environmentally feasible, such as hydro or natural gas. As a general rule, the power sector has long-term, least-cost sequence plans which sometimes include environmental considerations, such as human involuntary resettlement and wildlands, but these often get lost in the hurry to complete engineering and economic analyses. These environmental and social costs then re-emerge after heavy expenditures on detailed engineering have been completed and the proposed project has become more firmly entrenched in national development plans. Sectoral EAs should identify the real options at a stage before expenditures for design have become too great.

In a recent case, preparation of Nepal's Arun 201 MW Hydro, was criticized because not enough alternatives sites had been socially, environmentally, and economically compared with the single proposed big one. Often, dams are proposed as a part of a cascade series with one large dam controlling the flow to several smaller downstream

dams. The EA must consider the entire proposed sequence when assessing the first dam of the series. This holds even if dams subsequent to the first one are not immediately envisaged.

The same holds for highway projects. If a good EA team is asked to assess the impacts of a new highway, they may well recommend a railroad, not a highway. Such a response would not please the National Highway Authority that requested the highway EA and would likely result in dismissal of the EA team. This might not be the best course for the environment or for the nation

GATT and the Environment

GATT externalized environment for its first 44 years. GATT created an Environmental Working Group in 1971 which held its first substantive meeting only in 1992. Why was trade considered to be environmental-neutral? EA should be applied in assessing the massive social and environmental impacts of trade policies (Daly & Goodland 1992), especially those harming poor people and the poorest nations less able to withstand multinational corporate pressures.

Programmatic EA

US NEPA provides for Programmatic EAs. These are EA generic procedures for many projects separated in space or time. For example, a programmatic EA of solid waste incinerators may specify site criteria and effluent release standards for all future federally financed incinerators of a class or all incinerators in one province. Programmatic EA then becomes an EA of a class of projects or a kind of sectoral EA (e.g., a sectoral EA of incinerators). Then the project specific EA of the next proposed incinerator would be to ensure that the programmatic EA criteria had been followed, rather than inventing a project specific EA *de novo*. Finland is drafting a programmatic EA for all projects slated for the special environment of the Arctic (Finland, 1995).

Development agencies have invested in sectoral "time-slices" for decades where the individual investments or subprojects may not be known at the time of project appraisal. The normal procedure has been policy and institution strengthening to ensure that the borrower has adequate environmental capacity to undertake EAs and other environmental needs of individual components or sub-projects as soon as they are identified. For example, in a sectoral highway project, the actual routes of new highway are not usually known at appraisal. The Bank includes strengthening the highway authority's capacity to fulfill its own environmental needs. As soon as a new highway segment is identified, the environmental work is then automatically carried out and used to determine the final route selection and mitigatory measures. When the segments involve rehabilitation of existing highways, this approach works better because the potential adverse effects are much less than for new construction. In practice, for new highway segments, the efficacy of this approach is not clear. However, it is clear that Sectoral EA should be required for transport sector loans, and more generally for all sector loans.

The evolution of irrigation development is an example of the old project-specific EA of a single site specific irrigation project evolving into water resource planning or water basin management. The World Bank-assisted \$600 million Pakistan Drainage Sector Program helps to optimize the investment program of the whole sector by adding environmental and social needs to more conventional planning and by capacity strengthening. Brazil's \$500 million Power Sector loan helped to rank all poten-

tial hydro projects on environmental and social bases and compare that with alternatives such as importing natural gas from Bolivia. Colombia's Power Sector loan helped to decrease over-dependence on hydro by balancing it with recently discovered natural gas generation.

Strategic EA of Treaties

Can EAs influence draft international treaties, such as GATT, NAFTA, FCCC, UN Montreal Protocol, and the UN Biodiversity Convention? The US NEPA specifically provides for this. However, since then, the courts ruled that EA should not be applied to the NAFTA treaty while still in draft. But then, when the NAFTA treaty was in near final form, the courts ruled it was too late! In 1993, the US Supreme Court ruled that the Clinton Administration was not required to comply with NEPA in the case of the trilateral North American Free Trade Agreement (NAFTA) because it was an action of the President. However, the administration voluntarily completed environmental analyses of NAFTA (USA, 1993), although not under NEPA procedures. A similar report was prepared for GATT (USTR 1994). Hecht (1995) shows how to monitor the environmental impacts of trade policy reform in Africa. These encouraging assessments show that SEA can and has been performed on international treaties.

At a minimum, SEA for trade treaties could identify where environmental and social changes are likely to occur. This would permit developing a monitoring program to make sure that environmental and social impacts could be corrected before they became too severe. For instance, some dirty industries may move to countries with less stringent environmental legislation thereby exporting pollution and increasing disease hazards. US and Mexican health officials are already finding disease hazards along the US-Mexican border as a result of *maquiladoras*.

Since the NAFTA agreement may reduce the need for *maquiladoras* (assembly plants using kits of parts manufactured elsewhere), it has the potential for significant environmental and health improvements. A Strategic EA of the NAFTA agreement would have officially identified potential changes in health impacts, and would also have established a monitoring program to locate the most serious risks and hazardous sites. Industries may migrate to low wage countries. Wages are low because social and environmental standards are lax, and health, safety and pensions may be weak.

Strategic EA of Privatization

Privatization is sweeping the world, almost as dogma. While it may be seen to have economic benefits, the environmental and social costs need to be determined in advance. Privatization has massive environmental implications which should be subjected to rigorous SEA. The typical pattern today is that governments seek to prevent the worst environmental impacts of its investments. To this end, nearly all governments have set up their own environmental ministry or agency and, except in Sub-Saharan Africa, they have made EA mandatory. This approach has started to work, although much remains to be done (World Bank 1995d).

Now governments are relinquishing major sectors of the economy to the private sector. Clearly, the capacity of government to regulate the private sector will be critical in this transition. Government capacity is barely adequate today for its own (governmental) investments. This is because one governmental agency has great difficulty in getting another government agency to increase expenditures for environmental needs. When a sector is privatized, the government can optimistically require the pri-

EA in Africa — A World Bank Commitment

vate sector to meet national environmental standards, and the private sector can raise charges to do so. Government capacity should be in a position to regulate and monitor the private sector, especially when dealing with multinational corporations with operating budgets larger than many developing country GNPs. Environmental and social capacity strengthening of governments is an essential pre-condition to privatization in environment-sensitive sectors.

The other environmental aspect of privatization is that the mix of projects taken up by the private sector is likely to differ from that which government would have taken up before privatization. The private sector has a shorter planning and implementing horizon than government. For example, the private sector is unlikely to invest in long-gestation projects, such as big hydropower, which may take a decade from gestation to generation. Most private sector energy investments are 12-month "build, own, and operate" (BOO) gas turbines or other fossil fuel plants as they are so much quicker to implement. Government joint ventures with the private sector are likely to find quickly designed and easily packaged projects, such as highways, more attractive than environmentally preferable options, such as railroads or renewable energy projects. The environmental implications of privatization are major and certainly require SEA if the main impacts are to be prevented.

The US Congress has indicated that deregulation will be a focus of the current (1994) leadership. While some deregulation may prove environmentally and socially beneficial, the risk is that it would allow abuses as well as benefits. Before any deregulation takes place, it should be subjected to SEA in order to evaluate the indirect effects of deregulation.

SEA for Transnational Corporations

There is no international agreement or treaty regulating the conduct of TNCs. For such reasons, the UN recently proposed a code of conduct for TNCs, which was not adopted. On the contrary, the UN Center for Transnational Corporations, founded in 1975, was abolished in February 1992, as soon as it had prepared what was to have been the UN's mandatory code for TNC conduct. Instead, the private sector groups are now promoting their own voluntary codes such as the "Business Charter" for TNCs.

UN-mandated codes could be cumbersome; private sector codes and self-policing could be more effective in the long run. The *Group of 77* developing nations, joined by the Nordics and China, proposed to UNCED in March 1992 that TNCs should accept environmental liability. This was defeated with the support of the United States, United Kingdom, and Japan, which presumably do not see it in their interests to adopt such codes. Whether UN related or private sector related, all TNCs and other companies should be subjected to environmental assessment to accelerate the internalization in prices of the full environmental and social costs of production ('cradle-to-grave' pricing). This specifically should include the polluter pays principle (PPP), clean-up, rehabilitation, and replacement costs (performance bonds), waste disposal, fair wages, health insurance and risk reduction (Daly & Goodland 1994). Strategic EA can help in identifying the environmental costs of production and in devising preventive or mitigatory measures.

Strategic EA of Structural Adjustment

At the March 1995 UN Social Summit, there were major differences over the social and environmental impacts of structural adjustment operations. Some claim poverty and

equity has decreased in adjusting countries; others the contrary. Some claim that growth is a prerequisite for reducing poverty and that for growth, adjustment is needed – including free trade, privatization and deregulation. UNDP's Mahbub ul Haq (1994 Barbara Ward Lecture) insisted: "To address poverty, economic growth is not an option: it is an imperative. The needs of people must take precedence over the needs of the environment." The poor are the first to be harmed by environmental damage. Environment doesn't have needs—it is the life-support system of all life, including humans. This paper suggests that such differences could be resolved by undertaking systematic Strategic EAs of structural adjustments during the design phase.

Question: How can SEA help resolve this divergence? Can SEA be used to predict possible environmental and social impacts early on in the design of the structural adjustment, and then be used to prevent, mitigate, or compensate for the impacts of Structural Adjustment?

Structural adjustment began in 1979, and rose to more than 25 percent of total World Bank lending within one decade; 187 operations in 67 countries, about \$30 billion of investment. While all the precise details of the environmental and social effects of SALs are too complicated to spell out, the major impacts are clear, easy to identify, and relatively easy to mitigate. Unless major potential impacts are designed out or otherwise mitigated, SALs could impose major social and environmental costs – usually on the poor. Most SALs have much in common although precise details differ from country to country. Strategic EA should analyze the potential impacts of the common elements in each case. This is now routine in the InterAmerican Development Bank.

The Bank's first and third reports on SALs (World Bank 1995b) opened by stating: "....Although adjustment programs have not focused on environment issues, most of them included measures that, on balance, appear more likely to help than hurt the environment." Making EAs systematic would strengthen the positive results and reduce the negative impacts.

This paper claims that the more direct environmental impacts of SALs can indeed be identified by EA, that this would help prevent depletion of natural resources, and help promote environmental sustainability. Munasinghe and Cruz (1995) emphasize: "The relationship between environmental issues and policy reforms is fairly straightforward...." This process has started. The number of environmental conditions agreed to in the loan increased in SALs to 60 percent by 1992. This paper recommends that EAs be systematically applied to all adjustment and policy lending, first by strengthening the policy requiring EA of adjustment lending, then by reviewing proposed loans to ensure the policy has been met.

Munasinghe and Cruz (1995) summarize best: "The following are immediate steps that can be taken by decision-makers" (to prevent environmental problems):

1. *"More systematic efforts are needed to monitor environmental trends and anticipate emerging problems when policy reforms are being prepared."*
2. *"Serious potential environmental impacts of proposed economy-wide reforms identified earlier should be carefully assessed...."*
3. *"Where potential adverse impacts of economy-wide reforms can be identified and analyzed successfully, targeted environmental policies or investments need to be implemented to mitigate predicted environmental damage and enhance beneficial effects."*

EA in Africa — A World Bank Commitment

4. *"A follow-up system for monitoring the impacts of economic reform programs on environmentally sensitive areas should be designed and resources made available to address environmental problems that may arise during implementation."*

These four conclusions constitute major challenges for practitioners of Strategic Environmental Assessment, and environmental assessors should tool up now to resolve these four challenges. The challenges are not conceptually difficult. The hard part is being achieved, namely acknowledging that the environmental impacts of SALs merit assessing and mitigating.

Trade liberalization—will it tend to accelerate natural resource (e.g., mineral) extraction? This can help the country if receipts from such extraction are counted (in SNA) as depletion and not as income. If mineral extraction receipts are counted as income, which is currently the common case, a country will behave as though it is richer than it really is until the mine is exhausted, at which time the country will suddenly become poor. In addition, much mining imposes its own direct impacts. One of the most damaging is placer gold mining in the Amazon. Vast tracts of lands are torn up, indigenous peoples are deracinated, volumes of spoils erode fast into waterways damaging fish and other water resources. The commonly used mercury enters the food chain in the toxic organic form where it is bioaccumulated up the food chain. These effects need to be addressed by SEA during the design of the SAL.

Strategic EA at the National-Level

"[The US Federal] budget says, by the way, that we think military threats are 15 times more important to our national security than threats from poverty, population growth, or the environment."

Donella Meadows
Feb 1995

The national budget is arguably the most important statement of environmental priorities that any government ever makes. At least at a superficial level, it is relatively easy to identify anti-environmental expenditures in a budget. The most detailed analysis of any national budget so far is that of the US federal budget by Friends of the Earth (de Gennaro and Kripke 1993). FOE's "Green Scissor's Report (FOE, 1995) shows how to cut environmentally harmful expenditures.

The first need is a systematic EA of the budget to seek to reduce financing damage. Subsidies to federal grazing, mining, water and timber are the main examples of anti-environmental budget expenditures. Tax breaks for oil drilling means the oil industry is spreading its own private risk across the public, which does not equally participate in any future profits. Subsidies and other inducements to civilian nuclear power are strongly asymmetrical at best. About 75 percent of total research and development expenditures has been consumed by the nuclear industry over the last four decades, although it generates about 3 percent of global commercial energy.

**Environmental
assessment of
national budgets**

Strategic Environmental Assessment of Structural Adjustment Questions to be Assessed

[From: Warford et al 1994, Munasinghe & Cruz 1995, Reed 1992, 1995/6]

- **Devaluation:** (aimed at fostering exports) Will imported food prices rise? And will the poor expand small-scale agriculture into marginal lands?
- **Removal of subsidies on food, fuel and agricultural inputs:** In general, environmentalists encourage removal of subsidies because it reduces waste. In specific common cases will higher prices for food and kerosene and other domestic fuels result with clear impacts on the poor?
- **Removal of fuel subsidies:** Will they lead to increased fuelwood use, with resulting deforestation, loss of biodiversity and carbon fixing capacity, soil erosion, and possible intensified trends to desertification?
- **Removal of agricultural input subsidies:** Will fertilizer and biocide prices rise? Will agricultural intensification increase or decrease? Will extensification increase in developing/developed countries?
- **Developing compared with Developed Country Impacts:** May the situation in industrial countries be the opposite? In Western Europe, for example, would removal of price and land set-aside subsidies cause intensification of production on the same plot?
- **Extensification vs. Intensification:** In poorer countries, instead of seeking productivity gains by intensifying production on the same-sized plot, are farmers more likely to extensify into marginal areas, hoping to get the same production from a larger area farmed with fewer inputs? What are the risks of small farmers expanding the agricultural frontier? Will output productivity and biodiversity suffer? Will long-term soil productivity decline?
- **Natural Resource Depletion:** Will the SAL accelerate natural resource depletion (e.g., soil fertility, fuelwood, timber, fish)?
- **Exchange Rate Adjustment:** Will natural resources depletion accelerate when the exchange rate falls because the exporting country has to export more to buy the same amount of imports?

The second need is to identify the pro-environmental expenditures in the budget and compare them with other expenditures to force taxpayers to ask if those are the priorities for which they voted. The World Bank has recently adopted part of this approach. The new (c. 1995) UN "20/20" goal is: if 20 percent of developing country budgets is allocated to social expenditures, this will be matched by 20 percent of international development assistance. Also, where defense expenditures are deemed excessive, the World Bank now raises this in its dialogue with borrowers. The social side of the assessment will address the employment implications of the budget proposals. Fortunately, more environmental attention almost always increases employment, rather than reducing it.

Annual reviews of public expenditures have been powerful economic tools, and the World Bank is contemplating moving towards a more strategic approach by integrating public expenditure work into the Country Assistance Strategy work. Integrating

environment and natural capital into public expenditure work has started. The time is now ripe to add environment to both public expenditure and country assistance strategy work. The NEAP should be reflected in both. The major influence of Public Expenditure Reviews (PER) and Annual Reviews of National Investments (ARIS) shows how influential they can be. These should be expanded to include environmental assessment, or the PER could be modified to address national budgets, introducing assessment of environmental impacts. This has begun. Sri Lanka plans a thorough environmental review of its public investment and this will include all natural capital. In addition, this year's International Monetary Fund Policy Framework Paper for Sri Lanka will focus on the environment across all sectors. The World Bank's Jan Bojö recently analyzed nine country assistance strategies for the Africa region and developed a checklist of environmental criteria designed to integrate environmental priorities.

Until recently there was an almost sole focus on only one of the various forms of capital, namely manufactured capital, such as machines, buildings, infrastructure, factories. That made sense when manufactured capital was the limiting factor. Now, increasingly, manufactured capital is no longer the limiting factor. The manufactured capital of fishing trawlers, nets, and sawmills has become limited by fish stocks or timber stocks. Natural capital has become the limiting factor in increasing areas of the human economy, and is being addressed in economic circles.

Three forms of capital should be systematically disaggregated, namely manufactured capital, natural capital (roughly environment as a source of raw materials and a sink for wastes), and human capital, such as knowledge, skills, health, values, beliefs and education. Manufactured and human capital have been increasing at the expense of natural capital. Without natural capital, the human economy is impossible. Now natural capital has become scarce, and as the potential for substitution between manufactured capital and natural capital is limited (one cannot build the same house with half the wood and double the number of saws and carpenters), environmental assessment of the remaining natural capital is urgent. How much of each form of natural capital will be left if the proposed project is implemented? Is that amount enough or will source or sink rates be exceeded? Just as manufactured capital needs maintenance, so does natural capital need maintenance, and this is the definition of sustainability. Whereas manufactured capital maintenance consists of replacing worn out parts, natural capital maintenance means reducing the pressure on the environment, so permitting the renewable forms to regenerate their own worn out parts.

NEAPs were conceived when it became clear that investing in a few projects, often even those containing environmental components, would by no means arrest serious degradation in most developing countries' natural resource base. Just as development work progressed from individual projects into macroeconomic adjustments, so environment must be elevated up to the national level. This is the transition from project-level EAs to Strategic EAs. The more NEAPs are based in solid macroeconomic analysis, the more likely their recommendations will be internalized. For this reason, NEAPs should include or be based on partial parallel SNA, especially for poor countries dependent on natural resources and whose economies are largely rural. Thus NEAPs are tools to foster Green SNA. NEAPs should be used to adjust the national budget, and to adjust external donor agency attention.

**The Role of
National Environmental
Action Plans (NEAP)**

Strategic EA for Environmental Sustainability

Environmental sustainability means maintaining natural capital (environmental source and sink services) intact. The first step in any move towards sustainability, therefore, is to account for natural capital depletion. The main locus where natural capital depletion may be identified is in the national System of National Accounts (SNA), which are calculated by nearly all countries under an agreed UN statistical framework. Prompted by Ahmad, El Serafy and Lutz (1989), the United Nations (1993) recently put forward a framework to distinguish depletion from sustainable income (El Serafy 1989, 1991, 1992, 1993, 1995).

Modified SNA, sometimes called "Green Accounts," must be started for all those countries heavily dependent on the export of natural resources (e.g., minerals, natural forest timber, fish) or primary commodities. If the population is poor, and rural with high growth rates, those countries should be prioritized because so many people depend on natural resources. The earliest impacts felt are often soil fertility depletion, water depletion or contamination, and loss of forest resources and fuelwood. These are often crucial to survival for most of the rural poor. In parallel, the World Bank and others have produced a comprehensive set of sustainability indicators (World Bank 1995f).

While "maintaining natural capital" is the shorthand definition of environmental sustainability, that translates into maintaining two environmental services unimpaired. The two environmental services are the source function of the environment to provide raw materials for the human economy, and the sink function to absorb societies wastes. These two functions are rates that can be estimated or measured. More specifically, sustainability means that the absorptive capacity of the environment to assimilate wastes (sink capacity) cannot be exceeded. Harvest rates of renewable resources (source capacity) must not exceed regeneration rates. For example, fishing exceeding fish-stock regeneration rates is a global pattern and has led to declining fish yields. Serafian quasi-sustainability for non-renewables has been outlined above. These three principles of environmental sustainability need to be subjected to EA that systematically examines each one of the three.

SEAs help approach sustainability by balancing regulations with planning. Sustainability planning must include policy reform, therefore Strategic EA is needed. Sustainability is essentially redressing the balance of today's economic analysis by adding environmental and social concerns alongside the traditional economic concerns. Sustainability means internalizing all costs, and stopping the externalizing of some even if they cannot be precisely quantified. Best estimates are preferable to the default value of zero. Therefore, sustainability relates greatly to government and to political will.

Even the CEC (1992) predicts that the shift to sustainability will take some time to become routine. One way to accelerate this transition is to undertake partial shadow EAs to parallel traditional EAs. The shadow EAs would examine the operation being assessed only through the sustainability lens. The results of such parallel sustainability EAs would help gain experience to make them the norm.

"The most fundamental requirement of sustainability is that capital should remain intact. This requirement must be applied to natural as well as to fabricated capital. Counting capital consumption as if it were income is the greatest of all accounting sins" (Kellenberg & Daly 1994). The whole reason for income accounting is to avoid impover-

ishment by unintentional over-consumption. Consumption of either natural or man-made capital reduces future capacity to generate income. In order to approach environmental sustainability, economic analysis needs to employ the concept of user costs systematically in all projects using environmental services (sources or sinks). User cost is a depletion premium, specifically the opportunity costs of depleted natural capital used in a project (Von Amsberg 1993; Kellenberg & Daly 1994). Until recently, the economic cost of a natural resource (say natural gas) consisted of the cost of production (extraction), and the costs of transmission of the resource. Sustainability demands that to the costs of production and transmission be added the opportunity cost of consuming a unit of the depletable resource now rather than in the future. The concept is increasingly employed in the natural gas projects.

Depletion of natural capital, (non-renewables such as natural gas, minerals, oil) as well as renewables (forests, fish, clean air and clean water, capacity to assimilate wastes) specifically including the regenerative and absorptive capacities of the environment, must bear a user cost. There is an opportunity cost involved in depleting the capacity of the atmosphere to absorb carbon dioxide, for example, as well as the depletion of coal mines or oil wells. Disregarding user cost is equivalent to counting it as zero which leads to an overestimation of the rate of return. This introduces a systematic and pervasive bias in the allocation of investment capital against sustainable development. Omission of user cost promotes projects which deplete natural capital and demotes investments allocated to restorative or sustained-yield projects. If no royalties are imposed on mining, or if timber on national lands is sold below cost, depletion of natural resources will intensify, and sustainability will recede.

Internalization of environmental externalities for sustainability

The most direct way to approach sustainability both project-level EA and in SEA is to internalize all environmental externalities. Not to do so is the root cause of most environmental damage today as well as much damage to human health. The World Bank formally adopted sustainability as a policy in 1984 (OMS 2.34). Environmental assessment reduces potential impact on sources and sinks, so is the main tool fostering sustainability in project level investments. We suggest that this approach now be applied to promote sustainability in the policy arena. The Treaty on European Union mandates sustainability (article 130u), and the internalization of environmental externalities (article 130r2), as emphasized in its Sustainability Treaty of Parties (Article 130r3; CEC 1992). In the large areas where economic costs cannot yet be calculated, surrogates or estimates (e.g., shadow price of restoration) are to be applied because the default value is certainly greater than zero. The CEC Treaty even goes so far as to mandate use of "....an appropriate discount rate which safeguards the rights of future generations with due allowance for uncertainties and risk."

The economic analysis of projects in development agencies needs to reflect more systematically any direct linkages between the environmental analysis and the economic analysis. The mitigation program devised from the EA is not always fully integrated into the overall total project costs. As the costs of implementing the mitigation plan rarely exceed 10 percent of total project costs, the economic rate of return does not change, and a separate environmental C/B analysis is not undertaken. The economic analysis of projects should systematically reflect the costs of the environmental impacts identified in the EA, or the full costs of mitigating all impacts.

Internalizing Negative Environmental Externalities

Mitigation plans deal mainly with 'traditional' environmental costs and often err in underestimating such costs.

- Resettlement costs almost always exceed initial estimates substantially (World Bank 1994), and in most cases the oustees are not as well off after the project.
- Pneumoconiosis, silicosis, 'black-lung' disease, SO_x, and NO_x have only fairly recently been included in coal-thermal projects.
- CO₂ costs are still normally externalized in coal-thermal projects.
- The benefits of downstream replenishment of soil fertility by annual flooding is normally excluded in reservoir projects.

Environmental assessors need to continuously improve environmental assessment. This means environmental externalities need to be identified as early as possible and incorporated into economic analysis. In the economic analysis, economic values should be attached to each of the alternatives, and environmental costs and benefits should be quantified to the extent possible. If this is not possible, they should be estimated. For example, GEF uses an ultra-conservative US\$20 per ton of CO₂ released as an environmental cost. Researchers claim that figure should be much higher. Fankhauser (1995) and Kirk Hamilton (1994) calculate the cost of one ton of carbon dioxide to be nearer US\$200. Coal-fired projects commonly use zero CO₂ cost by default. Economists agree that zero is wrong, but do not advocate any higher figure because of disagreement on the precise figure. Environmentalists, on the other hand, prefer to be vaguely right than precisely wrong.

Upgrading or rehabilitating existing unsustainable projects is becoming increasingly common in developing countries. But the upgrade fails to make the original and continuing project sustainable. The EU highlights the importance of using appropriate discount rates for environmental and social needs. Expanded C/B can achieve much in the approach towards sustainability (Dixon et al. 1994). Adjusted SNA will clarify the huge savings to be reaped if best economics are used. Adoption of full-cost or 'cradle-to-grave' pricing is overdue.

Life-Style Changes for Sustainability

EAs rarely recommend lifestyle changes although these may be necessary to achieve any semblance of sustainability in the long run. EAs for projects in countries with high population growth rates, for example, never point out the imprudence of investments to increase the supply of electricity, housing, schools, transport or food unless population

stability is actively promoted in parallel. For example, many more people could be well fed on vegetarian diets — the UN “Grain-Based” Diet — and be much healthier, and at much lower environmental and social costs than on meat-based diets, yet this is never raised in EAs. Promotion of organic farming and phasing out of fertilizer and biocide subsidies would be enormously effective in reducing pollution and the environmental costs of extensification especially in FSU and formerly planned economies. The necessary tripling of food production over the next 50 years has massive environmental implications which must be carefully assessed in advance.

Defecating into five gallons of drinking water each time, as promoted worldwide, is arguably the most serious impediment to urban sustainability today. China maintained its agricultural soil quality by treating excrement as a valuable resource, rather than an expensive waste. Water conflicts are increasing worldwide. Madras, for example, diverts water from much needed irrigation uses to municipal use. Groundwater is being depleted and irreversibly contaminated by sludge and sewage. Construction of urban water supply reservoirs is increasingly damaging socially and expensive financially. Rapid urbanization precludes the use of leachfields much longer. Traditional sewage collection and treatment is unaffordable by most developing countries. Because the world will be mainly urban in a few years, environmental assessment of this main impact of urbanization is overdue.

Widespread use of composting toilets instead of flush toilets is the main way to promote sustainability in developing country cities. Septic tanks and leach fields work well only at long-gone low population densities. Promotion of flush toilets, WDR 1992’s “Rolls Royce” approach, water supply reservoirs, sewage collection and treatment debases a valuable resource (manure) into an expensive toxin, namely sludge. Sludge is unsuitable for agriculture because of biomagnification of the effects of poisonous heavy metals. Much landfill sludge disposal eventually contaminates groundwater. Sludge incineration pollutes the air. Ocean dumping of sludge damages marine ecosystems. Sewage treatment has led to many rivers being polluted in developing and developed nations alike. Sink garbage grinders are as polluting as flush toilets on input volumes.

Some developed countries, but no developing country, can afford even secondary sewage treatment. For example, the US Clean Water Act forces cities to install secondary sewage treatment. Germany and the Netherlands are the only two countries opting for tertiary sewage treatment, and even they have scarcely begun. If rich countries can scarcely afford tertiary treatment—and if they do they may still suffer from pollution—why are developing countries going this route? Tertiary treated effluent will be high in bacteria and lower than swimming standard. How much better to avoid putting feces into drinking water and then have to expensively separate them. Mulching toilets (Rockefeller, 1995) are clear applications of pollution prevention; conventional sewage treatment is the outdated and forbiddingly expensive ‘curative’ approach.

If currently externalized costs of water supply for flushing toilets are added to pollution and eutrophication costs of downstream water bodies, most towns and cities will choose mulching toilets. Septic tanks now pollute water wells and groundwater where population density is high. In many cases septic systems can be converted relatively cheaply to mulching toilets. Conversion from sewage collection should get exemption from sewage collection taxes, and will be cheaper on metered water. Many toilets in Sweden successfully use this system, as do the Hungarian towns of Bekes and Papatenszer, some suburbs of Leon in Nicaragua, large areas of Vietnam, and some remote areas in USA.

It could be argued with some justification that 'getting the price right' creates compelling incentives for lifestyle changes, but the fact is that we do not get the price anywhere near right in major spheres of the economy. The social costs of car driving, and road-building for example, continue to be externalized. Agricultural subsidies (e.g., EEC's 'CAP' policies) are pervasive. There is some progress in raising the tariffs of commercial energy, and this is effective in promoting conservation and efficiency. We conclude here that there is major asymmetry in current EA work. EAs are applied to the supply side only, and rarely to the demand side. This imbalance must be corrected if society is to approach sustainability.

SEA of Global Issues

Historically, EAs have been applied to individual projects and almost entirely to national environmental impacts. Only occasionally have binational impacts been addressed. The most common example are downstream riparians affected by upstream water projects. But now that many environmental impacts have grown to global proportions, clearly a global approach is necessary to tackle them. This is mandated, but not yet achieved under World Bank's policy (OD 10.04). This would be in addition to measures for tackling individual contributors to such impacts at the national level.

Global environmental issues are an area where there has been more progress by UN Treaties than in other areas. The Montreal Protocol to stabilize damage to the ozone shield, the Biodiversity Convention to slow or halt species extinction, and the UN Framework Convention on Climatic Change (FCCC) to stabilize climates are examples where good science is being applied to accelerate political improvements. These three instruments are also powerful means to move towards global sustainability. The basis of these treaties is stability, and stability is much of sustainability, whether in tropical timber, human population, GHG emissions or CFCs.

Stability in species numbers is not a specific goal of the UN Biodiversity Convention. The Convention mentions the vague goals of "conservation of biodiversity and the sustainable use of its components."² But if zero anthropically caused species extinction is not a goal of the Biodiversity Convention, who is to say which species and how many species can be extinguished? Although there seems to be much built-in redundancy in species numbers in certain taxa ("there is an inordinate number of beetles"), not enough is known to be able to say with acceptable risk that we can get along without species x or y. Furthermore, it is difficult if not impossible to achieve the extinction of only one species, particularly in complex interrelated tropical ecosystems. How much of the biosphere should be appropriated by the human species, and how much should be conserved for all other species? Although stability (of humans, species, atmospheric composition) is an essential precondition for any notion of sustainability, it is insufficient.

² Article 8(h) : "In situ Conservation" On the contrary, one of the few places where species are specifically mentioned provides for the eradication of alien species. One could argue that if biodiversity and natural habitats are conserved, then species extinction will cease. But that is nowhere stated as the goal. Therefore, the convention seems to aim at slowing the extinction rate. That would be better than today's fast extinction rates, but there is no guidance on how slow the UN Convention's extinction rate should be.

Phasing out of CFCs as soon as economic alternatives have been readied may be too slow to prevent massive environmental damage. Scientists hope the ozone shield can repair itself within 100 years of halting CFC release, but it remains a massive gamble.

The case of the UN Climate Change Convention (FCCC) is even more commendable. More than 167 nations have signed this international treaty and 119 have ratified it (as of March 1995). That is a tremendous achievement of international recognition of the problem. Clearly, big oil exporters would suffer if they become unable to export their major — sometimes their only — asset so are understandably less than enthusiastic about endorsing the treaty. How can the world community protect such economies? The world community has started to compensate species-rich tropical forest-owning countries — should similar mechanisms be envisaged for fossil fuel-owning nations? Strategic EA can help provide answers. The big coal-containing countries, potentially even more damaging than oil burning, may have started to realize that the world cannot afford to burn its estimated 300 years of coal reserves. The natural gas owning countries subscribe to the FCCC because any transition to gas away from wood, coal and oil is good for the environment, and, in any event, the gas will be essentially all burned within possibly 50 years. There is general agreement that gas flaring is economically and environmentally wasteful. GEF is leading the way, by adopting and advocating internalization of CO₂ emissions (now priced by GEF at US\$20/ton), publication of GHG assessment methods, and promulgating guidelines for ODS phase-out, international waters pollution, and biodiversity.

The FCCC proposes to halt current damage and then to revert to an earlier safer state — namely, revert to 1990 emission levels by 2000. The first conference of parties (April 1995) has concluded that even that target is imprudently lax although it will be difficult to meet. Recognizing the risk of the lax goal, eight industrial nations (Australia, Austria, Canada, Denmark, Germany, Luxembourg, Slovak Republic, New Zealand) have already voluntarily committed themselves to more stringent targets of a 20 percent reduction of 1990 emission levels by 2005. This is the “Toronto Target.” The April 1995 Berlin FCCC meeting agreed to develop binding emissions standards for the next meeting. Strategic EA can help show the environmental implications of different levels of emissions standards.

The FCCC does not yet accept that a phase-out of coal is essential for climatic stability. As the world still has more than 300 years of coal left, its phase-out must occur long before its exhaustion. Most remaining fossil fuels will have to be left in the ground: a premonition of “absurdly strong sustainability”? (Goodland 1995) The FCCC does not overtly publicize that a transition to renewable energy will be essential for climatic stability and sustainability. Those countries responsible for nearly all the damage to date, namely OECD, are mandated to act first in reducing their emissions. But the source of most future emissions — developing countries — are still exempt from any commitment to halt their emissions. The FCCC responsibility for LDCs is limited mainly to paper reports. For example, LDCs should report on their emissions annually, and should draw up plans for rational energy and transport expansion.

In view of this progress, unmatched in any other environmental issue, we feel the FCCC is on the right track., and do not advocate a special expansion of EA into cli-

mate change. We welcome the "joint implementation" clause whereby one industrial country may invest in another country to displace GHG emissions. This is happening to a certain extent by Scandinavians and some European countries investing in Eastern Europe and FSU to reduce their GHG (and acid rain) emissions. Joint implementation is likely to result in helping developing countries to meet their development goals at the least environmental and economic cost.

We acknowledge the risk that industrial countries may view joint implementation as an excuse for delaying putting their own house in order. That risk is dwarfed by the overall problem of reducing global emissions below the danger point. Probably all mechanisms and more will be required as climate instability intensifies, and as the dwindling number of climate change skeptics (e.g., ex-EPA atmospheric physicist Dr. Fred Singer – "High quality data from weather satellites, available since 1979, show no warming whatsoever." Washington Times p.A16, 3/21/95) – recant. Although we feel the impact of GHG emissions on climate change is now recognized, we remain deeply concerned with the relaxed schedule so far agreed to approach climate stability.

UN Biodiversity Convention

This UN convention was adopted in 1992, entered into force in 1993, and had its first conference of parties in late 1994. It has been signed by 167 states and ratified by 112 countries as of February 1995. UNEP is the permanent secretariat. Under the convention, parties are required to develop national conservation and sustainability strategies, integrate them into national decision-making, and adopt measures such as a national system of protected areas and the protection of natural habitats. Zero habitat loss is not a goal of the convention. As there is no mention of a goal of zero species extinction, or zero biodiversity loss, fundamental requirements of environmental sustainability, much less halting habitat destruction, this convention is weaker than the FCCC. A biodiversity fund has opened, partly with the support of GEF, which can fund some "incremental costs" of meeting obligations. Parties are deeply concerned with biosafety, technology transfer, sovereignty, links with poverty, but do not yet seem to have prioritized extinction.

The UN Ramsar Convention of Wetlands is already using highly commendable SEA Guidelines to promote environmental sustainability of wetlands (BirdLife International 1995):

The Montreal Protocol

The main impacts of ozone depleting substances (ODS) seem to be:

- Increasing skin cancer, (up 25 percent by 2050 in midlatitudes), severely increases health costs of Canada, New Zealand and Australia.
- Damage to immune systems compromises vaccinations and weakens ability to fight infections.
- The possible annual loss of up to 7 million tons of fish. UVb light damages phytoplankton, the basis of the oceanic food chain. Krill also are threatened.
- Probable blindness in kangaroos, sheep fish, and Patagonian rabbits.
- UVb light damages germinating or sprouting plants, including crops.
- Ozone shield destruction increases ground-level ozone, which could intensify acid rain.
- UVb light is not screened out by many sunscreens.

The speed of phase out of ODS leaves much to be desired. When the two main CFC producers have managed to develop economic (to them) alternatives is not a prudent criterion on which to base phase out of globally damaging substances. The EU has adopted the year 2015 to phase out of HCFCs; this is dangerously lax. One nation, Luxembourg, has banned HCFC use already. Permissible chlorine levels seem to be riskily generous. SEA would weigh the environmental, especially health, costs and benefits to help decide on the optimal ODS phase-out rate. It is clear that environmental assessment needs to be much more a part of UN Treaty formulation.

4. Conclusion

Project-Level EA needs to be continued and strengthened—in particular it must influence project design. Analysis of alternatives and fully costed implementation of the EA's mitigation plan during project construction and operation must be made more effective.

Regional EA and Cumulative EA processes should continue to be strengthened and more frequently used.

Sectoral EA phase-in should be accelerated in order to reduce the cost and increase the effectiveness of the benefits of project-level EA. Sectoral EA is a powerful tool to help in project selection, and improves economic C/B analysis.

Strategic EA, in general, should be more systematically applied to:

- Structural Adjustment, privatization, TransNational Corporations, macro-economic work and 'Green' SNA
- National Budgets, NEAPs, and national-level policies and programs
- Environmental sustainability, and the internalization of externalities
- Global issues and international treaties, such as climate change, biodiversity, and ozone-shield protection
- All EA legislation, regulations and procedures should address social EA, whether integrated with biophysical EA or separated.

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Harmonization of Environmental Assessment Procedures between the World Bank and Borrower Nations

Issues and Challenges for Sub-Saharan Africa

Valentina Okaru and Andrei Barannik

The importance of EA harmonization for African countries is discussed in reference to an EA initiative proposed through World Bank cooperation with the newly independent States of the Former Soviet Union (FSU), as demonstrated in an EA Harmonization Seminar conducted between the World Bank and the Russian Federation in February 1995.

Summary

This paper describes some of the potential benefits of EA harmonization – including sound environmental standards, integrating countries into the global market system, promoting sustainable development and economic growth, cooperation and collaboration in the Bank's lending program, and enhancing the quality and sustainability of projects. Since the Bank requires EA for its projects, harmonizing the Bank's procedures and requirements with those of its borrowers would facilitate both project processing and donor funding.

The study provides an overview of country case studies with respect to the institutional and legal framework for EA in selected African nations. The paper recommends building on existing achievements, notably on the progress made in South Africa, Mauritius, Zimbabwe, Zambia, Nigeria, Ghana, and Seychelles. EA harmonization in the Former Soviet Union states could serve as a blueprint for future activities in Sub-Saharan Africa.

EA in Africa – A World Bank Commitment

I. Introduction	37
II. Factors Influencing and Driving Process and Importance of Harmonization in African Nations:	38
A. Rationale for EA harmonization	38
B. Positive Impact of EAs on Project Design and Implementation and on Institutional Development:	38
C. Summary of Main Points:	39
III. Brief Overview of Country Case Studies	40
A. Method used	40
B. Country Case Studies	41
1. Botswana:	42
2. Burkina Faso :	42
3. Ethiopia:	43
4. Ghana:	44
5. Kenya:	45
6. Mauritius:	47
7. Namibia:	47
8. Nigeria	48
9. South Africa:	48
10. Tanzania:	50
11. Zimbabwe:	51
C. Summary of Main Points	52
IV. World Bank and African borrowers EA Requirements and Procedures	54
A. Bank Requirements	54
B. Degree of Consistency	54
C. Constraints to Harmonization:	54
D. Transparency and comprehensiveness of the EA process	54
E. EA capacity in SSA countries	55
F. Summary of Main Points:	56
V. Conclusion and Recommendations:	57
A. Summary of findings	57
B. Building on existing achievements	57
D. Lessons learned from the experience with the FSU States	58
References	60
Annex 1: Harmonization and the New Member Countries From the FSU	61
1. Political.	
2. Economic.	
3. Environmental.	
4. Operational.	
5. The EA Harmonization Seminar	

1. Introduction

EA harmonization – conformity, coherence or consistency – of laws, procedures, and requirements does not mean that the same standards should be applied in all African borrower nations. Given the varied socioeconomic, cultural, historical, financial, technical, and institutional traditions, uniform environmental assessment and review standards cannot be done on a regional or global scale. Environmental standards would vary according to the local conditions. The harmonization process should therefore amend any inadequacies in the EA system, and establish an enforceable and acceptable compliance with environmental standards, but on a case by case basis.

The study discusses economic, social, political, and operational factors which have a positive influence on the harmonization process. It draws on a process initiated for the Bank and the new member nations of the Former Soviet Union, Russia in particular – where an EA harmonization seminar took place in 1995 – and applies lessons for selected African nations.

The institutional, legal, and policy frameworks for EA in selected African nations are briefly examined. (Table I provides a matrix of the findings.) The consistency of EA procedures of selected African borrower nations with those of the Bank is discussed, including an examination of obstacles to the EA harmonization process.

The conclusion underlines some of the significant points and provides recommendations for further practical field activities as demand from African countries develops.

II. Factors Influencing Harmonization

Economic, trade, social, environmental, and operational considerations

Harmonization would not only enhance technical and institutional capacity but would also advance Africa's integration into the competitive global economy. As African nations strive to become more industrialized and more integrated into the international trade system, environmental management and implementation capacity and expertise become critical. Since industrialized nations are increasing their commitment to protect the environment through sustainable means, higher environmental standards would be obligatory in international trade agreements and negotiations. Building trade links with industrialized countries means African nations would have to their strengthen environmental management capacity, particularly the ability to formulate and implement sound and enforceable environmental assessments (EA).

Rationale
for EA harmonization

There is an increasing demand for environmentally-friendly manufactured products. But at the same time, some corporations and polluters, trying to avoid stringent laws in industrialized nations, operate in developing countries — particularly in African nations which have little environmental awareness and, therefore, lower environmental standards and less enforcement of environmental regulations. Regarding the uncontrolled transboundary movement of hazardous wastes, some global agreements (1989 Basel Convention on the Transboundary Movement of Hazardous Wastes) and regional agreements (the 1991 Bamako Convention) called for restricting and even banning the trade. The agreements have incorporated the need for environmentally sustainable means of waste disposal. Despite these agreements, the uncontrolled movement of hazardous wastes and toxic products is probably still continuing, particularly in developing nations.

Eliminating the temptation to use Africa as a dumping ground for unsustainable waste management practices and other environmentally unfriendly activities, requires urgent measures, including harmonizing EA procedures and environmental standards. Such measures may be geared towards bridging the widening gap between African countries and industrialized nations in environmental management and legal systems. The gaps are in such areas as the degree of public and private environmental freedom of expression as well as in institutional, financial, and technical capacity for environmental management. Most African countries have neither the capacity to formulate and enforce environmental regulations, linked to market based incentives, nor the means to set and implement sound environmental standards, monitor compliance, and manufacture or acquire appropriate technologies.

EAs can be and have been used positively to influence the design, quality, and sustainability of Bank financed projects as well as the development process (institutional performance and development) in countries —e.g., by changing technologies or changing public works location. With the Livestock Services project in Uganda, the EA included a specific analysis of the carrying capacity of the rangeland. The EA proposals for improving any impact on the environment during the construction phase covered a number of

Positive Impact of EAs
on Project Design and Implementation
and on Institutional Development

items, including storage of top soil, protection of trees, and stripping of vegetation. All the items were controlled through an existing research and development standard specifications for road and bridge works.

In addition to infrastructure and major industrial projects, EA may be successfully applied to projects which may have positive environmental benefits (World Bank, Gabon Forestry project, 1993; Australian International Development Assistance Bureau, 1992).

Though the Gabon Forestry project was, *inter alia*, meant to be beneficial to the environment (rehabilitation and reforestation of natural forest areas), preparation of a separate EA was considered necessary to enhance the project. The Gabon Forestry project, which became effective in 1993 was one of the first of its kind that had a full separate EA submitted to the board in 1992 (implementation in 1994). To ensure effectiveness and sustainability of the project and EA, preparation took about three years from identification to board presentation. Of the three years, the EA process took one year.

The EA process resulted partly in enrichment, utilization, and mobilization of local capacity. The EA was prepared and conducted primarily by local experts (scientists, sociologist, foresters), but with the guidance of a few international experts, mainly from those providing assistance on issues concerning the incorporation of Bank EA methodology into the process.

Initially, there was enormous resistance within the country to the introduction of an EA process, particularly an effective system of transparency. But being subsequently convinced of the potential benefits of such a process, the country not only adopted the EA but participated actively. There was formal and informal discussion with the public within the framework of the EA and project preparation processes. Public opinions were sought through various ways, including the radio. The EA enabled full disclosure of some of the adverse impacts of unsustainable forest practices, including increased wildlife poaching. The EA also facilitated coordination between relevant institutions, including governmental and non-governmental agencies and universities. Permanent working groups of experts were formed for preparing and monitoring the EA process.

Likewise, the Tanzania Reforestation project was initiated to enhance the self sufficiency of the villagers in firewood and building materials, protection of soils, provision of fodder for cattle and fruit for consumption. The potential environmental benefits of the project included reduction in soil erosion, improved water quality, and more natural regeneration in depleted forests. The increased project cover was intended, *inter alia*, to improve the quality of watersheds with reduced excessive rain-water runoff. By 1992, the project seemed to be achieving reforestation goals as proposed by the EA study.

Further documentation and information are needed about the positive effects (direct or indirect) of EAs – on both project performance and institutional development/ performance. Such information would should be gathered during the proposed fact-finding field survey. Awareness of such positive benefits and good practices of EA would enhance the attractiveness of EA in most countries and increase the possible replication of some aspects of the practices.

The EA harmonization process has enormous significance and benefits in the countries, particularly with respect to operational, economic, social, environmental and trade considerations. In addition, successful implementation of the process would facilitate cooperation in the Bank's lending program as well as the quality and sustainability of projects and other development initiatives.

Summary of Main Points

III. Country Case Studies

There is little information on the role and importance of traditional practices for managing resources and the environment. Instead, most of the legal systems of African nations are based on laws from the colonial administration (civil code or common law). Existing laws reflecting the colonial heritage must be reconciled with the traditional norms and the socioeconomic and cultural conditions prevalent in African nations.

Method used

An Environmental Assessment and Resettlement Good Practices study looked at national capacities in Sub-Saharan Africa to conduct EA and environmental review. It used a study of Country Capacity to Conduct Environmental Assessments in Sub-Saharan Africa (Environment Unit, World Bank, 1991) as its foundation. Some of the issues considered for each country include the legal and institutional framework (the availability of the agency responsible for environmental management; the availability, adequacy and enforceability of EA statutes, policies, regulations, practices and/or procedures); availability of mechanisms for seeking redress and compensation against alleged violators for damage resulting from development activities; the degree of transparency; accountability of the government; and the degree of public participation.

Most of the countries examined had a low rating with respect to government commitment to accountability during the EA and development process. And while public participation was rooted in principle in some nations, it was not yet an entrenched practice in all countries. More information concerning environmental management and EA capacity of countries would be obtained during the intensive field survey. However, some information on institutional framework has been provided below.

Though this study does not deal primarily with private sector capacity, some studies have demonstrated that, in contrast to the government sector, private entities have higher levels of institutional capacity for environmental assessment in Africa (*Environmental Assessment in Tanzania: A Needs Assessment for Training*: Institute of Resource Assessment, Dar es Salaam). In particular, some technical experts and scientists in universities and research institutions have often trained in environmental fields. In addition, some international and local NGOs are also actively involved in environmental concerns and possess some capacity to contribute significantly to the design and implementation of EAs and projects, particularly on issues dealing with advocacy and social aspects. However, the study confirmed the under-utilization and inadequate mobilization of existing human resources within the region (op. cit.).

Criteria for Determining Adequacy in Scope and Contents:

availability of citizen/public participation component
provision of a system of effective transparency, disclosure and accountability
delineation and apportionment of responsibility for the relevant institutions

Criteria for Determining Enforceability:

availability of regulations establishing environmental compliance standards and procedures for enforcement
existence of a process of promulgation (making laws public)
institutional capacity and commitment to implement statutes, policies, mitigation plans,
institutional and managerial expertise, transparency and accountability

Country Case Studies

What follows has been produced on the basis of the best available information of the authors. Changes occurring after the contribution was prepared or misinterpretation of the available evidence should not be misconstrued.

Institutional and Legal Framework

A National Conservation Strategy (Coordinating) Agency was established. Most of the EIAs have been conducted on the basis of either a Bank or other donor agency guidelines and schedules. Besides, external agencies, including those from South Africa have assisted in preparing and implementing most EAs.

Botswana

Botswana does not have any self standing legislation on EA. But the country has a National Conservation Strategy. In 1989 a joint UNEP and IUCN mission conducted a consultancy work on the legal aspects of the National Conservation Strategy, which was approved by the government in 1991. The report made some definite proposals regarding legislative and institutional reforms to facilitate effective environmental management in the country. The strategy required EA for new development projects (public and private). One major goal was to minimize environmental costs and to enhance the quality of the environment. The National Environmental Action Plan (NEAP) called for the establishment of environmental institutions and an EA process.

As of June 1995, efforts were being made towards enacting and promulgating legislation to make EIA a requirement for policies, programs, and projects of a given magnitude. The government sought the assistance of UNEP to review all the existing laws. The review found that its laws were inadequately enforced, uncoordinated, and bedeviled with gaps and inconsistencies (Botswana's Presentation to the High Level Ministerial Meeting on Environmental Impact Assessment, Durban, 24-25 June 1995).

Regarding modes of seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by parties seeking redress against those accused of harming the environment through a development initiative.

Public Participation

This is not yet deeply rooted in the practice of the country. However, evidence demonstrates that the government has, sometimes, conducted EIA with the involvement of NGOs and local communities. For instance, in responding to the opposition of local communities and the international community to the proposed Southern Okavango Integrated Water Development Project, the government requested IUCN to conduct a review of the water development program. Based on the proposal of the experts and the resistance of local citizens, the government withdrew from the project.

Institutional and Legal Framework

The code examined stipulates that:

“those activities likely to have a substantial effect on the environment are required to have the prior authorization of the Ministry in charge of Environment (ME). The authorization is to be granted based on an environmental impact study” (Etudes d’ Impact Sur l’Environnement).

Burkina Faso

Title II of the Code provides for the establishment of a Bureau of Environment Impact Studies within the ME. The mission of the bureau would, inter alia, be to set up a specialized environmental team capable of assessing environmental impacts of programs (see also articles 12, 13 of the code). Pursuant to article 82-92, the ME is empowered to investigate infractions of the code and to take enforcement measures against alleged violators. In addition, the ME is required to formulate regulations establishing standards and measures to enforce the code. However, the agency does not have sufficient financial and environmental management expertise to establish regulations for enforcing the code. Given the lack of technical expertise in the country, the teams carrying out EIA are mostly foreign experts. But local experts comprise 95 percent of the sociological experts concerned with EA.

With respect to other disciplines, the Bureau of Foreign Studies subcontracts individual researchers and experts in about 100 percent of the cases during the EA process (see Statement of the Ministry for Environment and Tourism, Burkina Faso, African Ministerial Meeting on Environmental Impact Assessment, Durban, June 1995). The 1991 Réforme Agricole et Foncière (RAF) makes an EIA an advisory matter and provides, inter alia, that any activity likely to have an impact on the environment must be subject to a prior opinion of the ME, based on an EIA. Additionally, the proposed Environment code of Burkina Faso accords high priority to EIAs. Both public and private actions are subject to the requirements of an EIA. Article 15 provides that private agencies can select their own consultant to prepare an EIA and to submit it to the Bureau of Impact Studies, while EIA's for government projects are to be prepared by the Bureau.

The regulations are to stipulate environmentally vulnerable zones and resources likely to be adversely affected and major environmental problems such as soil (Chapter III, Article 10-11). However, no such regulations have been established. Further, with respect to remedies and sanctions, the code does not specifically impose fines or other penalties.

As for modes of seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by ag-

grieved parties seeking redress against persons accused persons of environmental damage resulting from a development initiative.

Public Participation

The legal framework encourages public participation. Article 13 requires public hearing on any EIA, with private experts and all interested groups and individuals as well as government entities offering comments. A delay of at least 30 days after such a hearing would be required prior to making any decision on the EIA. The final decision is to be in writing, with some rationale and suggestions for minimizing environmental harm, and should be communicated to interested parties. Public participation has sometimes, taken place either at the initial level, for major projects, or as a continuous process. In most cases, however, impact assessment documents are still confined to proponents, technical experts, elected representatives, and contractors (Statement of the Ministry of Environment and Tourism, Burkina Faso, Durban EA Conference, March, 1995).

Varied demands are made by various donors. Hence, the procedures applied in Burkina have been made flexible in order to meet the needs of both multilateral and bilateral donors. Besides, the government has demonstrated some commitment to EA. For instance, EIA is included as part of its development policy. Burkina includes a budget for environmental assessment as part of its funding request for most donor financed projects.

Institutional and Legal Framework

The Ministry of Natural Resources Development and Environmental Protection was established in 1981. Given the inadequate environmental management and technical expertise, local counterparts have not participated in the establishment, preparation, and implementation of EA (Country Report, Ethiopia, African High Level Ministerial Conference, Durban EA Conference, June 1995). However, some agencies, including the Development Studies Authority, are recognizing the importance of EA. Generally, the mode of institutional framework and EA implementation has been inadequate, mainly because of constant disruptions, instability of agencies, and shortage of financial and technical expertise.

To enhance the institutional framework, Phase II of the national conservation strategy (1990-1994) proposed a management structure and operational arrangements for natural resources and environment. The Inter Ministerial Environmental Policy and Coordinating Committee (IMEPCC). would provide overall coordination and be supported by the National Programme Coordination Secretariat (NPCS). The NPCS was to be located with the aforementioned Ministry of Natural Resources Development and Environmental Protection.

New developments emerged in 1992 when the government established the National Environmental Protection Authority (NEPA). NEPA has two main departments – the EA Review and Control Department and the Policy and Legislation Department. These departments are staffed by multi-disciplinary teams of local experts including engineers, environmentalists, biologist, and foresters.

There has been no explicit provision for ensuring that decision-makers incorporate the environmental dimension in the planning of development projects; nor has there been established procedures and guidelines for EA. However, the country still relies primarily on guidelines established by donor agencies for projects. And the water

sector has developed a practice requiring environmental and health impact assessment of water resources development projects (Country Report, Ethiopia, African High Level Ministerial Conference, Durban EA Conference, June 1995). But unavailability of an adequate comprehensive policy for the integration of EIA into the development planning is a major problem for environmental management and EIA. The process for formulating EIA is being initiated.

The country does not yet have any effective institutional and legal machinery for addressing complaints by aggrieved parties seeking redress against persons accused of environmental harm resulting from a development initiative.

Institutional and Legal Framework

The early stages of environmental assessments in Ghana can be traced to the establishment of the Environmental Protection Council (EPC) in 1974. The mandate of the EPC was advisory, investigatory, and educational. The EPC was also empowered to observe proper safeguards in the planning and implementation of development projects, including those likely to have an adverse impact on the environment. In the 1970s the EPC tried to institute EIA, particularly with respect to manufacturing industries. EPC set up an EIA committee as one of the expert committees to examine ways of making EIA operational. The EIA committee started by developing procedures to guide EIA operations (Guidelines for EIA).

Further, the 1994 Environmental Protection Agency Act created the Environmental Protection Agency which replaced the EPC. One of the functions of the agency is to ensure compliance with any environmental impact assessment procedures in the planning and execution of development projects. Part II of the 1994 statute empowers the agency with enforcement and control powers with respect to EA.

The country does not have a self-standing EIA statute. However, environmental legislation and other sector based statutes incorporate provisions requiring EA. For instance, the 1994 Environmental Protection Agency Act establishes an environmental agency with powers to review EIA and defines some procedures for conducting EA. Further, Ghana's National Environmental Action Plan (1991) addresses EA as one of the key environmental issues. The country has developed a general procedure to guide the EIA process. EIA guidelines for the mining sector have also been formulated, and guidelines for the forestry, manufacturing, and road sectors are in the initial stages. EA requirements are also stipulated in some sectoral licensing laws — for example, the Ghana Investment code and Petroleum Exploration and Production Law.

Pursuant to the 1985 Ghana Investment Code, the Ghana Investment Centre (GIC) has the responsibility of encouraging, promoting, and coordinating investments (with the exception of mining, petroleum and small scale industries). In appraising enterprises, the GIC is required to "have regard to any effect the enterprise is likely to have on the environment and the measures proposed for the prevention and control of any harmful effects to the environment."

The country does not yet have any effective institutional and legal machinery for addressing complaints by aggrieved parties seeking redress against persons accused of harming the environment through a development initiative.

Public Participation

This is crucial in the procedures. Participation is expected at three levels: scoping, preparation, and review phases.

Kenya

Institutional and Legal Mechanisms

Structure, Institutional Role and Capacity: The Ministry of Environment and Natural Resources (MENR) is made up of three departments – the National Environment Secretariat (NES), the Forestry Department and the Mining Unit. The Minister of Environment represents the MENR at the cabinet of ministers. Several divisions make up the NES, including the Environmental Impact Assessment Unit (EIA), the Natural Resource Management Unit, the Education Division, the Chemical Management Unit, Pollution Control Division and District Environmental Assessment. In decentralizing its activities, NES coordinates with the twenty-two district level environmental protection offices.

The institutions dealing with some aspects of EIA in Kenya include the Kenyan National Environmental Action Plan (NEAP) Secretariat, the National Environment Secretariat (NES), and the Investment Promotion Centre. In addition, various sectors conduct EIAs. For instance, the Tana and Athi Rivers development authority conducted its first EIA in 1976. EIA is well integrated into some industrial decision-making processes.

Likewise, in accordance with a presidential directive, the NES has been coordinating environmental management activities between key environment related agencies at the central level. But the legal mandate of NES and other environment related government institutions has not yet been clearly defined. There is still overlap and a lack of coordination between key institutions that perform environment and natural resource functions. Some degree of independence in decision-making is critical for NES which still depends heavily on funds from the sister sectors, particularly mining and forest departments. NES also receives additional funding from the treasury department.

Government institutions have neither the experience nor technical capacity to conduct environmental assessment. In contrast to such institutions, some private consultancies consisting of local experts, including Nippon Koi and Japanese International Corporation (JICA) have more technical and managerial capacity to conduct EIA studies. The EIA unit of NES reviews EA reports, including those conducted by some private agencies, but does not have the capacity to monitor environmental compliance with an EA report and with EIA standards. There is no formal EA and environmental monitoring system in all the key agencies that perform environmental protection and natural resource functions. But some concerned private individuals and NGOs have played an ad hoc watchdog role in detecting some environmental disasters and hazardous waste dump sites.

NES has neither the legal mandate nor technical expertise to perform regulatory and enforcement functions. The EIA unit has only six environmental officers, including one zoologist, two botanists, one resource management specialist, one forester, and one public health specialist. Areas of adequate technical expertise in NES include environmental science, environmental economics, environmental assessment, environmental law, and environmental accounting.

The office of attorney general, which is mainly responsible for law and enforcement, has only one lawyer working on environmental law issues. None of the in-

EA in Africa — A World Bank Commitment

stitutions of higher learning in the country offer environmental law and natural resources law courses. There was some recognition of the need to train some police officers, judges, and the some members of the media and more lawyers in relevant environmental management and assessment issues.

Legal Framework:

Kenya does not have an EIA legislation. Much of the EIA already conducted has been part of donor requirements. However, the environmental management and coordination bill which is being drafted by the attorney general's office with some technical assistance from UNEP makes EA a mandatory requirement. The bill provides for EIA monitoring, auditing, and environmental standards. Following the enactment of the draft environmental management bill, the government intends to organize a review of sectoral laws to harmonize and remedy the inconsistencies. Subsequently, standards would be established. The Attorney General's office has prepared a draft revision of the mining act which requires EIA as a prerequisite to any mining related developments.

The AG's office is currently involved in a regional project on environmental law for the three east African countries (Uganda, Kenya, and Tanzania). The regional initiative which is aimed at harmonizing the EIA and environmental standards is being funded by the Netherlands with technical assistance from UNEP, Law and Institutions Unit.

In regard to ways of seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by parties seeking redress from those accused of environmental harm resulting from a development initiative.

Land tenure controversies— including disputes concerning land rights and compensation — affect the implementation of an EA mitigation plans. Should EA be used to identify potential land tenure problems? Should guidelines be established with respect to land tenure and mitigation or compensation plans? The 1991 Tana Delta Irrigation project has resulted in an on-going dispute between the affected communities and the Tana and Athi Rivers Development Authority (TARDA). Could the dispute have been avoided if the EA conducted for the project addressed land tenure and compensation aspects? One of the major issues at stake in the Tana Delta dispute is the determination of rights to the disputed land which was acquired as a result of relocating the farmland of the affected Tana River community. The elders of the Tana River community have claimed, on behalf of their community, ancestral ownership to the disputed land. The community has also challenged the appropriateness of compensation paid by TARDA. But the Kenyan government guidelines on land tenure does not resolve the critical problem of land tenure insecurity, including the conflict between statutory and customary laws governing land use, rights and ownership.

Public Participation:

In 1979 the NES formulated the environmental management policy which includes requirements for EIA in public and private projects—the 1979-1983 development plan. The government also formulated EA procedures (brief Country [Kenya] Report on Environmental Impact Assessment, African High Level Ministerial Meeting on Environmental Impact Assessment, Durban, 24-25 June 1995).

The current EIA guidelines and procedures include the requirement for public involvement. Such participation should be at all stages of project planning, particularly the review and project approval stages. A few NGOs, including local, participated.

Mauritius

Institutional and Legal Framework

The Department of Environment is required to make decisions, with the appropriate information, about whether a proposed project should proceed for consideration. Pursuant to section 17 of the 1991 Environment Protection Act (EPA), an EIA is referred to an EIA committee after review by the Director. The EIA committee is chaired by the permanent secretary of the Ministry of Environment and Quality of Life, consisting of members as stipulated by the act (Report of the Mauritius Government, Durban EA conference, March 1995).

Part of the 1991 EPA requires an applicant to apply for an EIA license for each undertaking. Part 4 of the 1991 act concerns the requirement of an environmental impact assessment. The activities which are deemed to have severe environmental impacts are subject to an EA. The activities are listed in schedule 1 of the Environmental Protection Act, 1991. The act stipulates that other projects having environmental implications still require environmental clearance and should be submitted to the Department of Environment for assessment and decision. Part 4 also provides for procedures to monitor, enforce, and apply for EIA license. After taking into account the decision of the designated committee, the minister makes a decision on the EIA. The Minister of Environment and Quality of Life may revoke the license or amend the conditions of an EIA license or give directives on initiatives and execution measures. The act is yet to be rigorously enforced.

With regard to availability of mechanisms for seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints issuing from a development initiative.

Public Participation

In principle, the submission of an environmental impact assessment is open to the public. In expressing optimism about the progress with respect to EA, a representative of the government stated that "the EIA mechanism in force in Mauritius has now reached its cruising speed and is performing most satisfactorily" (Report of the Mauritius Government, Durban EA conference, March 1995).

Institutional and Legal Framework

Namibia

The Ministry of Environment and Tourism (MET), the primary agency for environmental management, compiled and edited Namibia's environmental assessment policy in January 1995. Classification of proposals submitted by the government or private sector is conducted by an environmental commissioner and the board. The board decides on whether the policy, program, or project requires an EA or not (Appendix A, section 4 of EA policy).

The nation has a 1994 EA policy which calls for assessment of not only projects but also programs and policies. Appendix A stipulates EA procedures. To provide a guide to the board and commissioner in making a decision, appendix B of the policy enumerates 54 activities, including policies, programs, and projects that would require an environmental assessment. These include structure plans, nuclear population, nuclear installations, mining, mineral extraction and mineral beneficiation, power generation, cable ways, reclamation of land, human settlement, and water intensive industries. However, unlike the Bank OD, there is no classification with respect to activities. The policy does not stipulate the criteria for determining the projects that require environmental assessment.

With regard to availability of machinery for seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by aggrieved parties seeking redress against persons accused of environmental harm resulting from a development initiative.

Public participation

The need for public participation is stipulated in the policy.

Institutional and Legal Framework

The Federal Environmental Protection Agency (FEPA) was established in accordance with the Federal Environmental Protection Decree of 1988. The FEPA was given a mandate to establish environmental standards and regulations and to evaluate development proposals. The 1992 Environmental Assessment Decree accords powers to the FEPA. Measures have been taken towards establishing some standards, including those concerning water quality. However, inability to efficiently operate and maintain appropriate technology, coupled with the unavailability and unaffordability of such technology and spare parts, undermines effective application/enforcement of any environmental standards.

The country has a free-standing EIA statute, the Environment Impact Assessment Decree 1992 (Decree No. 86, 1992). The 1992 decree makes EIA obligatory for new major public and private sector projects. Part II of the decree deals with the Environmental Assessment process, and part III addresses the powers of the agency.

Public participation

The decree stipulates that "the public and private sector of the economy shall not undertake or embark or authorize projects or activities without prior consideration, at early stages, of their environmental effects" (see article 2). FEPA established a public education component within the agency.

Concerning ways of seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by aggrieved parties seeking redress against anyone accused of environmental harm resulting from a development initiative.

Institutional and Legal Mechanism

The Ministry of Environmental Affairs and Tourism (MET) is primarily responsible for environmental management. Pursuant to the 1989 Conservation Act, the Minister of Environmental Affairs and Tourism is mandated to determine general environmental policy which binds other government departments and authorities. The act also empowers the Director-General of Environmental Affairs to take measures to ensure compliance with the policy.

The country does not have a comprehensive environmental assessment statute. The government concluded that the existing policy of voluntary EIA did not function effectively as was initially anticipated in the 1970s. Consequently, in March 1994, to provide for thorough and uniform control of environmental impact of development

Nigeria

South Africa

projects, the Minister of Environmental Affairs authorized the publication of a preliminary list of sixteen categories of activities for which an EA would be compulsory (in terms of the 1989 Environment Conservation Act) in the 4 March 1994 South African Government Gazette. The 1989 environment conservation act replaced the 1982 statute. The publication of the General Environmental Policy (Government Gazette, 21 January 1994) was a major development in environmental conservation in South Africa. The policy serves as a guiding norm for environmental management tasks of all government institutions. Government institutions are bound by law to perform their functions in accordance with the policy. The measures are regarded as the first step in formalizing EIA in South Africa. The draft regulations were also produced for comments on March 1994. The minister is, inter alia, required to make regulations regarding EA reports for identified activities.

The original intent was that the draft regulations would be implemented by the central government. However, the new Constitutional Dispensation modified the intent by providing for nine provincial departments responsible for the environment to control most of the aspects and to promulgate their own legislation. Consequently, the central Department of Environmental Affairs and Tourism can only make policy, lay down norms and minimum standards, coordinate, and monitor. Executive responsibilities for EIAs now rest with each provincial environmental department. Hence, the effective implementation of the control measures will require an extension and strengthening of qualified personnel at the provincial level.

One major challenge in the application of the policy is to reconcile the varied demands, and conflicting interests of different segments of the South African community (statement of the Ministry of Environmental Affairs and Tourism, Report on Environmental Impact Assessments, Durban EA Conference, 1995).

Regarding modes of seeking compensation and redress, the country does not yet have any effective institutional and legal machinery for addressing complaints by aggrieved parties seeking redress against persons accused of damaging the environment through a development initiative.

But, in contrast with other Sub-Saharan African nations, South Africa has a relatively developed EA system, including sound environmental management and technology. Though EA is not mandated as a self-standing statute, the country has an established administrative practice with semi-legal procedures. The country has provided assistance in the preparation of EAs to some of its neighbors and other countries in the region.

Public Participation

In 1989, the Council for the Environment (an advisory body of the MET) produced a planning procedure, the integrated environmental management procedure (IEM) This procedure was based on certain principles, including decision-making, consideration of all alternatives, public participation, transparency and accountability in decision making. The IEM procedure was later revised in 1992 with the introduction of guidelines on how to apply its principles.

Institutional and Legal Framework

EA expertise is concentrated in certain regions, particularly those with the most government ministries and national institutions (Dar es Salaam and to a lesser extent Arusha). However, it is in these regions that most expertise is actually required, given the higher occurrence of development activities. And skills specific to EA and/or natural resources have been scarce. Nationally, of the 353 individuals with natural resource expertise, only 13 percent had any EIA specific expertise (*Environmental Assessment in Tanzania, A Needs Assessment for Training*, Institute of Resource Assessment, Dar es Salaam, Tanzania and the International Institute for Environment and Development, London, August 1995). Therefore, existing capable human resources must be fully mobilized, both nationally and regionally. The same study shows that some educational and research organizations which have a potential to provide training in EA are not used — 80 percent of organizations with considerable expertise in different sectoral industries have never contributed to an EA process.

Because EA is spread across various institutions, management is difficult. Hence, some EA studies have relied primarily on international consultants. Institutional responsibilities are not clearly defined.

Although the country has no comprehensive EA statute, some environmental legislation, polices and standards are relevant to EIA. Some sector based statutes, including the industrial licensing laws, have provided EA requirements. Some sectors — including those concerned with mining, water pollution and water supply, agriculture and air pollution — have legislation dealing with some environmental management and assessment considerations.

A draft environmental protection bill will soon be discussed by members of parliament. Tanzania has a National Environment Action Plan (1994) and a National Conservation Strategy for Sustainable Development (1994). Both documents proposed the adoption of an EIA and establishment of a comprehensive legal framework for addressing environmental concerns. However, it remains unclear how the two processes would be integrated in actual practice. Further a national environmental policy was launched in 1993. There has not been any clear delineation of institutional responsibilities for EA. Legislation to support the execution of the national environmental policy is now being drafted.

The country does not yet have any effective institutional and legal machinery for addressing complaints by parties seeking redress against persons accused of environmental harm resulting from a development initiative.

Public Participation

Most local people have not been involved in the EA process. As in most African nations, Tanzanian "academics and technocrats have often positioned themselves as representatives of the local population in the belief that the issues involved are too technical for less educated people to cope with" (*Environmental Assessment in Tanzania, A Needs Assessment for Training*, Institute of Resource Assessment, Dar Es Salaam, Tanzania and the International Institute for Environment and Development, London, August 1995).

Zimbabwe

Institutional and Legal Framework

Structure, Institutional Role and Capacity: In 1992 an environmental planning and coordination unit was set up within the Ministry of Environment and Tourism (Department of National Parks and Wildlife Management). The DNR is made of three units, the research and technical branch (RTB), the field and project planning, and the administration and finance section.

The relationship between the DNR and MET has not been clearly defined. But the MET sometimes plays a policy-making and coordinating role while the DNR performs an advisory role. DNR does not have the capacity to conduct EA studies but reviews studies carried out by other institutions. MET has only one ecologist. The professional level staff of RTB consist of nine ecologists, two senior ecologist, one chief ecologist, and one systems analyst. One of the nine ecologist is an environmental economist.

In 1992, with the assistance of the Canadian funded Zimbabwe Natural Resource Management Program, the MET launched an initiative to establish an EIA program consisting of two components: policy/legislation and capacity building. Since 1976 Zimbabwe has conducted numerous studies on EA. Through the Zimbabwe Natural Resources Management Programme (ZNRMP), Canadians from the Ontario Ministry of Natural Resources are working with Zimbabweans in two government units, the Environmental Planning and Coordination unit (EPCU) and the RTB. The four main components of the ZNRMP in the MET include training; analysis and databases; environmental assessment; policy, planning and legislation. The EPCU is developing environmental policies and statutes in accordance with the National Conservation Strategy in close collaboration with DNR. The RTB is formulating information management tools, environmental assessment and planning processes, and communications services.

The Ministry of Environment and Tourism (MET) is charged with administering the newly promulgated (1994) environmental impact assessment policy. An environmental monitoring unit has been established within the MET. Legislative responsibilities are fragmented across a number of government institutions which leads to inconsistency in environmental management and protection approaches.

Policy and Legal Framework. Prior to 1994 most of the EAs were conducted as a requirement of international donor agencies and transnational corporations. In 1994, an EIA policy outlined principles of EIA and provided a detailed description of the administrative process that proponents and the MET must follow. As of June 1995 the MET was formulating administrative procedures and practices for implementing the EA policy.

There are about 21 pieces of conflicting and overlapping statutes directly or indirectly related to environmental management. The country does not yet have a comprehensive environmental impact assessment legislation. However, some sector based statutes, including the 1981 Natural Resources Act, the Mines and Minerals Act, and the Forestry Act, require EIA and stipulate measures for enhancing environmental conservation and preventing degradation. And with the technical and financial support of some donors, particularly CIDA, a proposed environmental management bill, which is currently being drafted, makes EA mandatory. It is unclear whether the 1994 EIA policy would be incorporated into a separate EIA law or would be part of the proposed environmental management act.

The government knows that it must review and bridge the gaps in its existing environmental statutes, including the formulation of an enforceable and comprehensive environmental assessment legislation. The EIA policy is intended to be investor-friendly and to ensure a balance between development and environment objectives. The policy outlines an environmental planning process and enumerates a list of prescribed activities for which a short prospectus must be submitted to the ministry.

The country does not yet have any effective institutional and legal machinery for addressing complaints against persons accused of environmental harm resulting from a development initiative.

Public Participation

Public participation has not been active. To assist government agencies and the public in understanding their responsibilities in executing the policy, the government is preparing environmental impact assessment guidelines.

C. Summary of Main Points

EA has taken root in some African countries, including Kenya, South Africa, Mauritius, Zimbabwe, Ghana, Nigeria. However, none of the countries have established an effective institutional and legal mechanism for seeking redress and compensation for environmental harm resulting from development initiatives. The lack of effective mechanisms undermines implementation of EA mitigation plans, particularly those dealing with compensation for parties who have suffered harm from development projects (for instance, dam projects that displace large numbers of people). There is a need for a transparent and effective system of interpreting and clarifying any possible gaps or ambiguities. Such ambiguities include the measure of compensation (appropriate, just, adequate) levied against a violator and the degree of harm (significant, minor) incurred.

The institutional responsibility has not been clearly delineated in most of the countries examined. The countries include Tanzania, Nigeria, Ethiopia, and Burkina Faso. Most had formally, in writing, recognized public participation. However, in practice, active public participation and understanding during the EA process has been thwarted by a weak system of government transparency, accountability, and disclosure. The community's right to know about adverse health and environmental impacts of commercial products and development activities was not rooted in any of the systems. Few African nations have established sound/transparent environmental management and assessment agencies with adequate financial and technical capacity to conduct EA.

The study revealed that the presence of EA statutes – although a key ingredient in successful EAs – does not guarantee adequacy and enforceability or good EA practice. For example, some nations without statutes, including South Africa have demonstrated more efficient EA practice with respect to ensuring environmental management through enhanced technical, financial, and technical capacity to acquire, operate, and maintain appropriate technology. Although EA is not mandated by a self-standing statute, the country has a relatively well established administrative practice with semi-legal procedures, while some countries with statutes have not yet formulated appropriate regulations establishing environmental compliance standards.

Further, as demonstrated in some countries, including Tanzania, capacity for environmental management and technical EA expertise has not been fully utilized, both

Harmonization of EA Procedures

within national and regional boundaries. Such capacity is not equitably distributed and available both within national and regional boundaries. In addition, environmental management and technical capacity is relative in Africa, given the varied social, economic, financial, political, technical, cultural, and institutional conditions. In some countries, some public sector institutions which have a legal mandate for EA, particularly lead agencies, lack the technical and managerial capacity to carry out their mandate. Inadequate capacity undermines the success of the EA, including preparation, evaluation, review, and scoping. Those with inadequate capacity include Mozambique, Burkina Faso, and Mali. Countries with higher levels of capability include South Africa, Mauritius, Zimbabwe, Zambia, Nigeria, Ghana, and Seychelles.

IV. Requirements and Procedures for World Bank and African Borrowers

The Bank and the borrower must ensure compliance with their EA requirements and procedures in a consistent and coherent manner. The consistency and coherence of EA laws, policies, and procedures is crucial to the success and sustainability of development projects. Some conformity would enhance the quality and success of projects as well as plans, programs, and regional initiatives.

Bank
Requirements

Since some EAs for Bank-financed projects are prepared through assistance by either the Bank or foreign donors, such EAs are conducted according to Bank policies (Operational Directives). Bank procedures, as well as those of some African nations, require public participation in EA for both public and private development initiatives. Similar to some countries, including Zimbabwe (see country EA policies), the Bank OD on EA (4.01) sets out a list of projects that would require environmental impact assessments. However, unlike the procedures and requirements of most African nations, the Bank's OD are categorized according to stipulated criteria. Since some countries with environmental impact statutes have neither the wherewithal to operate appropriate technology nor regulations establishing environmental compliance standards, the statutes have been unenforceable. As demonstrated above, the procedures for determining whether an activity will significantly affect the environment and is subject to EIA have not yet been defined by most African nations.

Consistency

Yet, some countries without a comprehensive EA statute or without being an major borrower, such as South Africa, still have a higher level of consistency with donor EA procedures than countries with comprehensive EA statutes. South Africa has the technical expertise and technology required to apply higher environmental compliance standards, to conduct EAs, and to implement and incorporate the results of EAs into its development process. It has also assisted some of its neighbors and other countries in the region with the preparation of EAs.

Despite the benefits of harmonization, some major challenges confront the process. These include:

Constraints to
Harmonization

- ineffective monitoring, review, and evaluation during implementation and beyond the life span of projects
- weak judiciary systems
- deficient donor coordination and cooperation
- under-utilization and inadequate mobilization of human resources
- uneven distribution of environmental management and technical institutional capacity in various regions
- insufficient government commitment to guaranteeing transparency and accountability
- a low level of local participation and internalization of the EA process into the development process.

A system of transparency and accountability is missing from many EA processes. Some governments have not encouraged public participation, including the freedom to criticize projects which have adverse environmental and social impacts. Many countries have lacked the political will to ensure active public participation during the

Transparency and
comprehensiveness
of the EA process

EA process as required by Bank procedures — and even when there is public participation and consultation, society is often left unaware of the impact of certain development activities on environmental and socioeconomic conditions.

In instances where there has been a commitment to an effective and transparent EA process, the Bank procedures may not be fully internalized into countries, given the low level of financial and technological capacity. Weak economies prevent some nations from funding their own projects and, thereby, imposing their own procedures, if the procedures are contrary to those of the Bank. The financial constraint is aggravated by not giving environmental assessment (which cuts across most sectors) a higher priority during the process of prioritizing sectors and activities for national budgetary and resource allocation.

Some crucial aspects of EA, including public health and economic aspects, are not emphasized enough. And borrower nations are often unaware of the adequacy in scope and contents or the availability of the EA procedures, statutes and regulations. For instance, an examination of the EA reports (see the projects enumerated below) for Bank-financed projects shows no detailed treatment of the status, adequacy, and availability of EA legislation, policy and procedures in African countries. Instead, a few EA documents with sections on legal and policy framework vaguely address laws and policy concerning the resources covered by a specific project being financed in a country.

Meanwhile, some African nations lack easy access to information about Bank EA procedures and requirements and those prevailing in the international system (other donors, national, regional and international agencies).

EA capacity in SSA countries

As discussed, some countries admit not having the institutional management capacity to implement EA (see questions and answers in these proceedings, see also UNEP "Environmental Impact Assessment—Where to From Here?", Environmental Economics Series, No. 6, October 1993). Because of the relatively low level of technical, financial, and institutional capacity in Africa, some of the EAs have been prepared by either the Bank or foreign consultancies sponsored by the Bank, particularly in those regions. In contrast with the more technical subject matter, some less technical aspects of EAs, including socioeconomic concerns, are sometimes prepared by or with local consultants.

But as demonstrated above (EA institutional and legal framework), capacity level is relative in the region, given the varied socioeconomic, political, technical, and financial conditions. Some countries may lack capacity but have easy access to expertise in neighboring countries. A case in point is South Africa which has capacity, in contrast to Mozambique, which needs capacity, as do Mali, Niger, and Burkina Faso. Countries with a higher capacity include South Africa, Zimbabwe, Zambia, Ghana, Mauritius, and Nigeria. Therefore, existing human resources and capacity within the region must be mobilized, and existing technical training from international, regional, and local experts must be coordinated.

Not rigorously mobilizing existing resources, however small, undermines the potential for developing local capacity to conduct EA. Ironically, achieving some of the major EA-related goals for Bank financed projects (harmonization, institutional and technical capacity building) is being thwarted by the inability to fully utilize existing capacity for preparing, implementing and monitoring EA for Bank-financed projects. On the one hand, the preparation and implementation of EAs by more technically capable institutions facilitates the whole EA process. On the other hand, "practice makes

EA in Africa – A World Bank Commitment

perfect”; hence, without an opportunity to practice through participation in EA preparation, most African nations may continue to lag behind in enriching available capacity. Moreover, increased participation in the preparation and implementation of an EA would facilitate the harmonization process, including guaranteeing not only country commitment, but also promoting sustainability both during and beyond the life span of the project. As EA training increases in the region, local and regional capacity will be enhanced.

Some key challenges to harmonization include:

- ensuring full utilization, mobilization, and retention of existing resources
- inequitably distributed environmental management and technical capacity, both nationally and regionally
- harmonizing the requirements of donor agencies
- ensuring internalization of the development process and conformity with local EA laws, policies and procedures
- enhancing the institutional will to guarantee accountability, transparency, intellectual freedom, and full public awareness.

However, since some EAs for Bank-financed projects are often prepared through assistance by either the Bank or foreign donors, such EAs should comply with Bank EA policies and requirements. The national EA process in most African countries is still in its infancy and has been adopted in varying degrees by borrowing countries as well as by some of the Bank’s task managers, particularly for Bank financed projects. The adoption, recognition, and genuine commitment to EA is a gradual process.

**Summary
of Main Points**

V. Conclusion and Recommendations:

Summary of findings

The EA harmonization process has enormous significance and benefits for the countries, particularly with respect to economic, operational, social, environmental, and trade considerations. Successful implementation of this process would also facilitate cooperation in the Bank's lending program. EA may have positive direct and indirect effects on the quality of project design and implementation as well as on institutional development and performance.

Key challenges include ensuring harmonization of donors; equitably distributing environmental management capacity within national and regional territories; enriching capacity, particularly in regions with low technical and institutional capacity; and fostering the political will to guarantee government transparency, disclosure, and public participation. Additionally, government sometimes neglects social, cultural, public health and economic aspects of EA as required by Bank procedures and guidelines.

With regard to donor collaboration in promoting coherence in EA methods and procedures, positive measures are being taken by some donor agencies to enhance such collaboration (see above).

Evidence from EA reports for Bank-financed projects demonstrates that there is little awareness about local EA procedures, statutes and regulations in most of the countries. This may be due primarily to the lack of a systematic mode of ensuring access to information in most African nations. Similarly, African countries do not have a systematic way of gaining information about Bank EA procedures and requirements and those prevailing in the international system (other donors, national, regional and international agencies). There is a need to enhance and formalize the system of EA data sharing, collection and storage as well as communication and information dissemination within most African nations.

These observations imply that through various means, including policies, laws, or statements, some African nations have acknowledged EA as an effective tool in enhancing capacity and decision-making, not only for project design but also development planning.

But some countries lack the means to formulate and rigorously implement and enforce EA and other environmental measures. The procedures and capacity for determining whether an activity is likely to significantly affect the environment and is subject to EIA has not been clearly defined by most African nations.

Building on existing achievements

The limited capacity to conduct EA is still one of the major challenges to implementing national environmental and Bank EA requirements and procedures. Most of these challenges exist in countries which:

- lack formal legislation, requirements, policies, or guidelines
- have little practical experience
- have limited knowledge about Bank policies on EA

EA in Africa — A World Bank Commitment

- have some capacity, but have differing EA procedures and process from those of the Bank
- have a weak commitment to EA
- do not possess an effective system of disclosure, transparency, and accountability
- do not encourage full intellectual freedom and public participation
- apply ideas which are incompatible with the local cultural conditions.

On the other hand, some African borrower countries are increasingly enhancing their EA institutional, managerial, and technical capacity and clearly delineating institutional responsibilities through:

- rectifying EA policy failures and legal machinery
- enhancing the technical, managerial, and financial capacity to acquire, operate and maintain appropriate technology and spare parts for EA and sound environmental management
- mobilizing local capacity in preparing, conducting, reviewing, implementing, monitoring, and evaluating EAs
- increasing the competence and expertise of most local experts
- hiring more environmental specialists for donor-financed projects.

The Bank in consultation with some of its new borrowers, agreed to the following initial steps to make the EA process (for category "A" projects) more effective:

- The Bank would provide the national environmental agency (with a clear legal mandate for EA) with an "Environmental Data Sheet" for each project in the Bank medium-term lending program for that country.
- A national environmental agency — together with an environmental unit from a respective national sector executing agency — would screen each "Environmental Data Sheet," provide comments, and agree with the Bank on an EA category.
- A national environmental agency — in coordination with an environmental unit from a respective national sector executing agency, and, with the Bank's assistance — would elaborate and agree on the Terms of Reference (TORs) and preparation schedule for an Environmental Assessment for a particular project according to national environmental legislation and the Bank's OD 4.01, when it is screened category "A."
- The relevant sector executing agency, through its environmental unit, would secure timely preparation (following the Bank project cycle and national institutional arrangements) of an EA in accordance with the agreed TORs, ensure its submission to a national environmental agency for review and approval as well as the subsequent submission of an Executive Summary and Main Report of the EA, both in English, French or Spanish (with all background materials) to the World Bank for comments prior to the departure of an appraisal mission;
- A national environmental agency would guarantee that an EA report has been made publicly available in the country prior to project appraisal.
- An environmental unit from the relevant national sector executing agency, together with a national environmental agency would ensure the implementation of EA recommendations — i.e., a Environmental Management Plan, and upon the completion

Lessons learned
from the experience
with FSU States

Harmonization of EA Procedures

of a project, would produce an evaluation of the project implementation from an environmental point of view.

This approach was initiated for the Russian Federation in the Former Soviet Union (FSU) states (see Annex 1), and the lessons learned can be summarized as follows:

a workshop is an absolute prerequisite for putting the views of all the concerned parties to start bridging the gaps between the requirements and procedures of each party
this workshop has to be prepared by frequent contacts between organizers and participants
strong national commitment is required as well as time and resources.

The World Bank is prepared to start working with interested SSA governments on an ad hoc basis to develop more harmonization efforts, based on the same approach used for the FSU states.

References

Please see additional sources referred to in the text.

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Annex 1

Harmonization and the New Member Countries From the FSU

As countries of the former Soviet Union (FSU) undertake economic, political, and social transition, it is clear that closer links with industrialized countries will be beneficial. In building these links in areas attractive for international investments, these countries wish to explore ways to address and, where appropriate, harmonize their environmental assessment requirements with those of the West, and in particular harmonize environmental assessment requirements nationally with those of the World Bank as the major source of lending.

There are four main factors driving this move towards harmonization:

1. Political.

Many FSU countries wish to become integrated into Western institutional systems (democracies). Harmonization with Western legislation is therefore the single most important force of the harmonization process and sets a clear target of what should be harmonized, and over what time scale. Signing international and regional environmental agreements and conventions is a clear commitment to environmental action by the FSU countries.

Other political factors include the emergence of global and regional alignments, with the aim of developing economic and other relationships; changes in environmental policy and a related flood of environmental concern in the FSU countries related to eventually matching western environmental standards.

2. Economic.

Potential investors are discouraged by the complexity and lack of transparency in existing environmental assessment (EA) in the FSU countries. Commonly, such legislation not only differs widely from that adopted in the Western countries, but also varies from country to country. Harmonization of EA could contribute to enhancing the transparency of environmental assessment requirements and operations.

The FSU exporters would also benefit from harmonization, since growing awareness of environmental issues by consumers in the Western countries is likely to impose environmental requirements and standards on importing products from the region.

A commitment by the FSU countries to achieving high environmental standards is therefore also likely to become a requirement to reassure potential trading partners and investors that products manufactured there will meet Western environmental standards and are thus guaranteed access to Western markets.

3. Environmental.

The general state of environment, the existence of regional environmental hot-spots, transboundary pollution and movements of hazardous wastes and technologies and global environmental issues are all relevant to harmonization of EA.

Harmonization of environmental standards and legislation takes place within the wider content of economic restructuring which is, in itself, a complex process of harmonization with Western countries. Governments must ensure that economic growth is sustainable in the long run as well as in the short term. The social costs of restructuring the economy also need to be considered.

Therefore any harmonization needs to be flexible, undertaken within a reasonable time-frame, cost-effective and focused on priority problems.

4. Operational.

Over the past several years, EA has taken on increasing importance (OD 4.01) in the preparation and appraisal of the World Bank-financed projects, with the major objective of improving decision-making and ensuring that the development options under consideration are environmentally sound and sustainable. It is expected that this EA process will also help to build environmental management capacity in the borrowing countries as well as result in better integration of environmental concerns in project preparation and implementation. Bank guidelines indicate that EA is a flexible process, an integral part of project preparation, and the responsibility of the borrower.

A recent internal Bank Review of Environmental Assessment confirmed that EA is a valuable tool for identifying project problems as well as a means to solve them. However, a number of specific shortcomings were identified that hinder the Bank's medium-term lending program:

National environmental agencies and project sector executing agencies lack knowledge about World Bank policies on Environmental Assessment.

National EA procedures, terminology, and timing vary in some cases significantly from those followed by the Bank.

National legal and institutional frameworks for EA are currently in a very fluid state.

The EA process is frequently initiated at a late stage of a project cycle thus not permitting significant time to accommodate national EA requirements.

In many countries there is limited national technical and institutional capacity to carry out environmental assessment.

National commitment to the EA process and inter-agency coordination are weak.

The level of resources available in the borrowing countries for EA is inadequate.

5. The EA Harmonization Seminar

The World Bank and the Russian Ministry of Environmental Protection and Natural Resources (MEPNR) held a seminar to harmonize their concepts and procedures for EA (Moscow 14-16 February, 1995).

The 140 participants were from the World Bank, Russian Government authorities, research institutes, and non-governmental organizations, and the Finnish Ministry of Environment.

The objectives of the seminar were to: (1) improve the understanding of the environmental, economic, and social issues involved in EA, (2) provide an overview of the World Bank's policies and procedures concerning EA, (3) review the present EA legislation, regulations, and procedures of the Russian Federation to determine areas of future cooperation and assistance, (4) discuss ways to avoid delays in project processing in various lending sectors, and (5) carry out cross-sectoral discussions of EA issues.

The resolution adopted by the seminar can be summarized as follows.

As the result of the discussions on procedures and requirements of the Bank for EA, as provided in the Bank's ODs, and those of Russia for EIA and State Ecological Expertise (SEE), as provided in legal and other normative and methodological documents of the Russian Federation, the participants of the seminar have noted procedural difficulties within preparation and implementation of the Bank-financed projects in Russia. Incompatibilities exist in:

the process of preparation of and decision-making on financing and implementation of a proposed activity in accordance with the procedures and requirements of the Bank for EA and those of Russia for EIA and SEE
the classification of projects
requirements to the scope of conducting EA for different categories of projects.

Thus, to improve environmental assessment process within decision-making on preparation and implementation of Bank-financed projects in Russia, the participants of the seminar recommend that the World Bank and the Government of Russia engage in a permanent dialogue, exchange of documents and cross-participation in the major events affecting the environment in Russia, as well as encourage a more frequent use of Russian expertise wherever relevant.

In particular, the Ministry of Environmental Protection and Natural Resources will:

- (a) ensure submission of comments and suggestions on an "Environmental Data Sheet" for each project in the Bank lending program for Russia;
- (b) participate in developing the TORs for EIA for Category "A" projects as well as for the projects included in the "List";
- (c) agree with the Bank on the schedule for SEE for Category "A" projects as well as for the projects included in the "List."

Public Participation in Environmental Assessments for Bank-supported Projects in Sub-Saharan Africa

Shimwaayi Muntemba

Summary

The World Bank has increasingly embraced participation as a way of promoting partnerships and ensuring success and sustainability. From 1989, with OD 4.00, participation was required in environmental assessments in Bank-supported projects. Participation in EAs, however, has not been as wide as it should have been, although the number has been increasing appreciably – from less than 33 per cent in 1992 to over 50 per cent in 1994.

Participation as practiced in EAs has varied according to the interpretation of participation – from coercion through informing to consulting to partnering and sharing control. The objectives of participation have also varied – from co-option to enabling influence to allowing a desirable alteration to sustainability. Many methods have made people aware of a project and its possible impacts. Bank-supported projects have aimed at informing but, of late, have been driven by the need to consult for the purpose of influencing. Except in a very few cases, this consultation has not resulted in any project alteration.

Reporting in 1994, the Bank's Learning Group on Participatory Development defined participation as a process that enables stakeholders to *influence and share control*. OD.4 00, revised as OD4.01 in 1991, restricts its definition to influence. Participation in EAs has yet to fall in step with this late definition and, thereby, to move towards genuine participation.

CONTENTS

Introduction	67
Reinforcing public participation	67
Fragility of the resource-base	68
Need to empower communities	68
Cultural basis of environmental sustainability and the role of indigenous knowledge	68
The value of an informed public	69
The many interpretations to participation.	69
Co-option	69
Informing	69
Consultation	69
Collegial or partnership	70
Devolution of power or community control	70
The World Bank, environmental assessments and participation	71
Bank EAs and participation on the ground	73
Spread by country and field of interest	75
Why so few participatory EAs?	75
Within the Bank	75
At the country level	76
Future of Hope	76
Within the Bank	76
Within Africa	77
Dialogue and information-sharing	77
Conclusions and agenda for action	77
References	79

Introduction

After decades of focusing on development by national governments and international aid, the 1980s showed that African countries had made no progress since political independence in the 1950s and 1960s. In fact, most countries were actually experiencing diminishing returns on many fronts: per capita income, unit of labor invested, investment in education, and natural wealth. The devastating droughts of the 1970s, mid-1980s and 1992 exposed the fragility of both Africa's resource-base and its policy base. Debates on rural development, on poverty alleviation, and on resource utilization came to the fore. These debates moved from the theoretical to the applied, challenging the way African governments and people manage and carry out their development efforts.

Alternative approaches to escaping poverty demand a shift in public self-perception – from passive beneficiaries, people become effective actors in the development process. The 1980s and 1990s have seen a growth in national non-governmental organizations (NGOs), which have modified their traditional relations with international NGOs from dependency and subservience toward partnerships. NGOs have been transforming their activities from pure relief to development, and have started to address governance issues. They see dialogue with governments as essential to their work, making the views and perspectives of grassroots people heard, thereby influencing developments which affect their lives and livelihoods. And, spurred on by NGOs, communities have begun to organize themselves into groups. Sometimes these groups have been created for effective implementation of externally designed and driven projects, and sometimes in order to identify and carry out people-centered initiatives.

These shifts have brought about a widespread call for people's participation in development processes. Some organizations within the UN system – for example the International Labour Organization, wished to understand ways in which communities have been organizing themselves to tackle poverty (Muntemba, 1985), in the hope of learning from people's views and experiments. By the late 1980s some African governments themselves were shifting their strategies, as seen in the Arusha Declaration of 1990 – a statement of commitment to participation and people-centered development by African governments. Many processes – pressure from national and international NGOs, demands from the donor community, shifts towards democracy, which allowed heretofore silent voices to be heard, and self-questioning – have all pointed in the same direction.

The analysis that follows shows the extent to which these new perspectives are being implemented on the ground. The varied ways in which participation has been translated and practiced have brought out its strengths and its weaknesses.

Reinforcing public participation

The failed projects littering the development scene have convinced development assistance proponents of the value of people participating in activities affecting their lives. How participation has been interpreted on the ground has varied according to the orientation of each donor or purveyor of the approach. We have already referred to shifts on the part of some African governments as they have responded to donor requirements, NGO and community pressure as well as to the reality of failure. But in Africa, other factors have reinforced the need for public participation – in development efforts and, particularly, in environmental assessments (EAs).

Fragility of the resource-base

The Food and Agriculture Organization of the United Nations (FAO), the World Commission on Environment and Development (WCED), and others have extensively recorded the fragility of Africa's resource-base (FAO 1984, WCED, 1987). Yet, we know that a majority of Africa's populations continue to depend on this resource-base for their livelihoods because most occupations are land and water-based. Their participation would be based on self-interest— a strategy as good for nature as for the people in search of sustainable livelihoods and development. Most of the region's countries depend on that same resource base for their national wealth; therefore, it is in the national self-interest to enable and facilitate participation as a means to environmental sustainability and sustainable development

Need to empower communities

NGOs, in particular national ones, have been attempting to empower communities in their efforts to safeguard the resource-base in more efficient ways and to use the resources sustainably. Where it has worked, participation has enabled communities to develop a sense of ownership and of taking part fully in a process. Therefore, participation can be seen as a way of pushing forward sustainability of the resource-base. Participation would also enable people to play lead roles in identifying, designing, directing, and implementing any development activity which has an impact on their immediate environment, and therefore on their way of life.

Cultural basis of environmental sustainability and the role of indigenous knowledge

Environmental sustainability has been promoted or frustrated by people's conception and perceptions of the environment. These perceptions in turn have affected their relations with nature. While the Judeo-Christian ideology has promoted the concept of man's lordship over nature, many African cultures have extolled nature as the mother of sustenance. This view led to a symbiotic relationship between people and nature, where nature was nurtured and its resources used sustainably. The many taboos that shrouded person-nature relations were a reflection of this relationship. Ironically, just at the time when indigenous knowledge systems are gaining recognition, the very knowledge-base of how people related to and exploited nature has become distorted or, in some cases, nearly disappeared. However, there remain areas in Africa where this indigenous knowledge still exists.

In the march towards environmental sustainability, nowhere is this knowledge more called upon than in environmental and natural resources management. Making people partners in environmental management and conservation would assure access to this knowledge. Consolidating this knowledge into the process of environmental assessments can play major roles in, for example, bridge, canal and, in some cases, dam construction. The Lozi of Western Province in Zambia had developed a complex canal system over years of living with and depending on the flood plains. Recently, the World Conservation Union (IUCN) Regional Office for Southern Africa organized a workshop on indigenous knowledge. The workshop concluded that many of the irrigation-development errors of the 1970s in that province could have been avoided if there had been an interaction with the local knowledge base (World Conservation Union, 1995).

Participation adds another dimension to development analysis and practice. Environmental Assessment (EA) is a development tool. By making participation an important strategy, a gender perspective would be brought into the EA process. A gender perspective, in turn, would focus on women — the main users of the natural

resources and, to some extent, the major managers. They are also the custodians of indigenous knowledge systems built up over generations of environmental and natural-resources care (EarthCare Africa Monitoring Institute, 1995). Women's participation in designing and shaping development is essential for achieving development objectives at the community level.

The value of an informed public

The general public—including business, industry, academics, and others—may have additional non-indigenous knowledge and information which may help the sustainability of an activity. People have a right to be informed, in particular those who may be affected by the proposed activity. All inclusive mechanisms of reaching the people—including the poor, women, and the young — must be devised. Progressing beyond "consultation" that merely informs people will do much toward finding solutions.

The many interpretations of participation.

While complete participation (intellectual, physical and financial) is the best, it is also the most complex because it involves all of the actors at all phases of a project (conceptualization, execution, and management). For all these reasons, this concept has been the most difficult to achieve. (McMillan, et al., 1994)

Participation has taken on many interpretations over the years, depending on people's ideological stances, economic and social groups, and other influencing philosophies.

Co-option

This interpretation of participation attempts to manipulate public opinion in order to gain support and to have the affected people appear to have accepted and endorsed the project. The manipulation of public opinion is particularly common in EAs. Many methods may be used in order to gain the consent of the various stakeholders, especially the people affected by a project — these methods include coercion, persuasion or promise of compensation.

Informing

This approach simply means advising the affected people about the planned activity and the proposed solutions in the event of any dislocations or hardships. It is based on the following assumptions:

- People would get some benefits from a proposed activity (employment, breaking isolation, trickle-down development).
- Although people might not understand the activity, it would still be wise to prepare them for change.
- They are already so deprived as to be indifferent to alternative choices.

This approach does not seek people's reactions, and should such reactions occur, no corrective actions would be forthcoming. It is an interpretation method that has received the most adherence.

Consultation

Consultation seeks the public's views and opinions, especially opinions from those who are to be affected by the activity. These views may then be used to contribute minor changes or additions to the project. But project control remains with the proponents

EA in Africa — A World Bank Commitment

and their consultants, who will decide what interpretations and weight to place on the views. How views are used is left to the originators of the project and their supporters. In analyzing people's participation in Latin America, Partridge (1994) concluded: "*Consultation is the least intensive and in many ways the least participatory ... and should be viewed as an initial step.*" Indeed, consultation may influence and therefore lead to some alteration of the 'how' but does not make fundamental changes to the project, nor is this the intended outcome. This method has been widely adopted over the last few years.

Collegial or partnership

This approach assumes the public to be a friendly partner, equally interested in development and having a clear vision of the present and future. The process of EA adopts methods that are more likely to result in true partnership. People, especially those affected by the project, become part of the process, and their knowledge and views receive maximum consideration. This approach may result in strengthening the project by correcting some of its weak points, or even in redirecting the project. The guiding principle is mutual benefit, to both the proponents and the public.

Devolution of power or community control

Devolution of power is easier to realize in project design and implementation than in project environmental assessments. At the heart of this problem lies the proponents' fear of losing control. In reality, it is possible to devolve decision-making to the local situation during the cycle, if local populations through their representatives are brought into this cycle from the beginning. And local decision-making would play a lead role if environmental assessments are to be a tool for sustainability and, increasingly, as assessments move from project to strategic approach.

Shifts have been taking place in these approaches. Co-option used to be the most favored approach, but over time, informing became preferred. Recently, consultation has gained more ground. While the partnership approach has some adherents, in fact few are prepared to adopt it on the ground. The most thorough application of participation — devolution, or local control — is perhaps the most difficult to conceptualize as an EA tool despite its acknowledged importance to the project cycle. Participation raises fundamental questions and issues of power relations and sustainability. This author believes that strategic (program) EA will facilitate the appreciation of this interpretation of participation because it will place assessments in a broader context of sustainable development.

The World Bank, Environmental Assessments, and Participation

Over the last decade the Bank has viewed participation as:

- an active process by which beneficiary/ client groups influence the direction and execution of a development project with a view to enhancing their well-being (World Bank, 1987)
- a process by which people, especially disadvantaged people, influence decisions which affect them (Bhatnagar and Williams, 1992)
- a process through which stakeholders influence and share control over development initiatives, decisions and resources which affect them (World Bank, 1994).

These statements show that the Bank's interest in participation goes back to the 1980s. In the words of one of its former presidents: "*The World Bank's interest in participation is not new. Our operational experience suggests that projects can be more efficient and sustainable when they involve those they are intended to help.... But, I believe that increased participation will increase the effectiveness of development.*" (Preston, 1994)

The statements also reflect an evolution in the institution's interpretation of participation. The dominant characteristic and objective of participation has traditionally been its influence. By 1994, however, the Learning Group on Participatory Development – which had been given the task of "examining the issue of participation and identifying challenges to the Bank in stepping up its efforts to support participation in its efforts" – found that the World Bank had shifted its stance from influence alone to influence and sharing control. This is the stance favored by the World Bank Sourcebook (1996).

The World Bank's interest in participation was a result of external pushes, as referred to earlier in this discussion. But it also emerged from internal processes affecting institutional and individual perspectives and perceptions. Lack of attention to social variables in the project cycle, from design through implementation, contributed to failure in Bank-supported projects, according to the Bank's own evaluations in the mid-1980s. Other evaluations identified ways in which the supposed beneficiaries could participate to the advantage of the project (Uphoff, 1985). Bank interest in participation, and evaluations addressing the same issue, have resulted in beneficiary assessments. These have been carried out in many countries since 1987 in Bank-supported projects. The growing presence of social scientists on Bank staff has moved this process along, enriched by a positive dialogue with some NGOs.

The Bank's Learning Group on Participation, which reported in 1992 and 1994, and its Systematic Client Consultation approach have both emerged from this recent tradition of concern with public and people's participation. In encouraging staff to read *The World Bank and Participation*, World Bank President Lewis Preston said:

"Systematic client consultation and stakeholder involvement, particularly of the poor, should become a part of our approach to developing successful policies and projects. Paying more attention to stakeholders, and supporting borrower efforts to engage with a range of stakeholders, opens a new area of learning for many of us. I see such learning as part of broader efforts to make the Bank a better institution."

In 1995, the Social Policies Division of the Bank's Department of Environment completed its work on participation, reporting its findings in the *Sourcebook on Partici-*

EA in Africa — A World Bank Commitment

tion. The Sourcebook is contributing significantly to the institution's understanding and application of participation and to its adoption by task managers. The Africa Technical Department's Participation Team has developed a Participation Action Plan which has been instrumental in an on-going exercise of establishing NGO/participation liaison officers in resident missions.

The Bank has extended this interest in participation to EAs. In 1989 the institution issued an operational directive on EA (OD 4.00), which called for involvement of the affected people and local NGOs in EAs. The directive was revised in 1991, OD 4.01. The revised OD also insisted on information disclosure:

In order for meaningful consultations to take place . . . it is necessary that the borrower provide relevant information prior to consultations . . . in a timely manner and in a form that is meaningful for, and accessible to, the groups being consulted. . . . In addition the borrower should make the EA report available at some public place accessible to affected groups and local NGOs for their review and comment. (para. 21)

The OD thought it necessary that the public should be consulted at critical stages within the EA cycle:

Such consultations should occur at least at the following two stages of the EA process: (a) shortly after the EA category has been assigned and (b) once a draft EA has been prepared. (para. 20)

The OD wished to make it clear to Bank clients as to why consultations were essential:

Consultations do not reduce the decision authority of the borrower, but are a valuable way to improve decision-making, to obtain feedback . . . and to increase community co-operation in implementing the recommendations of the EA.

In analyzing the Bank and Participation in EAs for the IAIA Annual Conference in 1992, Cook and Donnelly-Roark concluded:

Based upon the Bank's definition of local participation in EAs, it appears that the "consultation/mobilization" strategy has been selected for implementation. In the EA process the consultation/mobilization strategy can fulfill two different participation objectives: (1) it can inform people about the project and project planners about people's views and concerns; and (2) it can create opportunities for people to influence program design and implementation, without giving the power to take decisions.

In 1995, EAs in Bank-supported projects remain dominated by these two objectives, even as there has been an impressive shift in the understanding of participation. It would appear then that the Bank is out of step with the evolution of the interpretation of participation within the institution. In both *The World Bank and Participation* and *The World Bank Participation Sourcebook*, participation has been taken to mean a way by which people influence and share control. Yet, the guiding operational directive (1991) and the practice of EAs restrict participation to consultation with a view to influencing alone. However, as shall be seen below, there have been cases where the direction of a project changed because of the participation of the affected people and other stakeholders. This indicates a participation that went beyond influence to making fundamental shifts to project orientation and direction. It is also possible that, as the strategic approach to EA gains ground, it could be necessary to broaden the interpretation and practice of participation to include influence and sharing control.

Participation is a process, and shifts keep occurring among the responsible staff. Task managers are in an on-going interaction with clients and, through them, the public— a process that facilitates mutual learning and a positive contribution to participation. Moreover, there is an openness to learn from others who have carried out participatory EAs, which can only enrich Bank approaches to participation.

Bank EAs and Participation on the ground

In preparation for their presentation to the IAIA Annual Conference in 1992, Cook and Donnelly-Roark reviewed 35 EAs conducted in the Africa Region. Out of these, they found that only ten had included a measure of public participation, of which four (11 percent) met all the OD requirements. The dominant form of participation adopted in the ten EAs aimed at informing the stakeholders. Two of the ten EAs went beyond mere informing. Consultations were held and these allowed the local people to influence the direction of the project. Thus, eight of the ten projects that came closer to qualifying as participatory adopted procedures and methodologies that merely informed the public.

In preparation for the Durban IAIA Annual Conference, this author was able to review 26 EAs conducted between 1992 and 1994. Of these, 14 had some measure of public participation. This marks quite an improvement, from less than 33 percent to more than 50 percent. Nevertheless, in 12 of these 14 projects, the EA team merely informed the affected populations of what the project was going to do.

Box 1 Good effort

Ghana: Highway Sector Investment Credit

Methodology:

- guided by World Bank Environmental Assessment Sourcebook
- held consultations with local authorities and affected populations, including beneficiaries and disadvantaged groups
- held discussions with NGOs and community groups and their representatives
- reviewed data on the physical, cultural and socioeconomic environment

Box 2: Good Effort

Ghana Takoradi Thermal Plant

Methodology

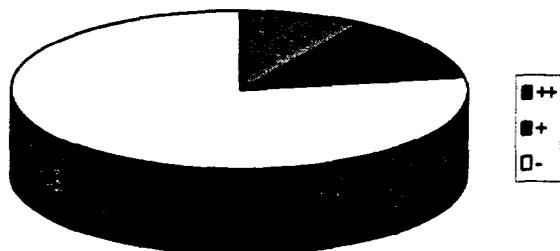
- conducted discussions with land-owners
- final draft of the report made available for public review
- held discussions with community representatives to develop community impact agreement to define compensation and mitigative measures

However, in two projects (in Benin and Ethiopia) the process of participation actually influenced the project. It was fascinating to note in these two cases that the EA consultants started with the dominant methodology of consulting with a view to informing the affected people and at the same time feeding the results to the proponents. The reality on the ground required a change in their methods, enabling the affected people, especially women, to participate. Their inputs ended up changing the course of the project to some extent. The consultants listened to women, among others, thereby appreciating the social and economic dangers that could follow if the project went ahead without alteration. The effects on children were also considered. In both cases, influen-

EA in Africa — A World Bank Commitment

tial views were expressed not only by communities through their representatives (elders, NGOs), but directly by the affected groups.

These two projects mark an important shift in the Bank's approach in Africa, although it is not clear to whom credit should go — Bank task managers, the consultants or a combination of both through positive interaction.

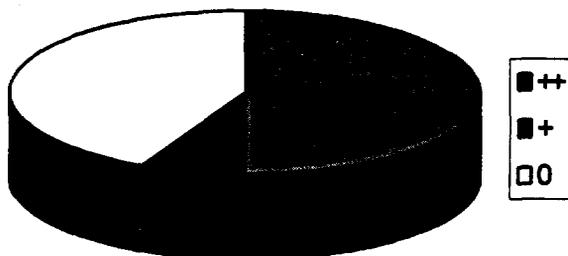


By 1992: 35 Environmental Assessments

10 EAs included some participation:

4 of these met the requirements of the OD,
6 just fell below the OD requirements.

25 EA (71%) did not include participation.



1992-94: 26 EAs surveyed

14 EAs with some participation,

of which 2 influenced the course of the project: Benin and Ethiopia.

Box 3 Good effort Nigeria: Third Livestock Development Project Methodology

- visual observations of pastoralists in their home and work situations
- interviews with individual pastoralists and communities
- interviews with project managers and other professionals
- interviews with traditional rulers
- use of secondary sources

Spread by country and field of interest

The projects which this and the earlier study examined for their EA components were spread over 32 countries in Sub-Saharan Africa. The Africa Technical Department had on record 55 EAs undertaken by the first quarter of 1995, including three carried out between 1987 and 1989. From these there appears to be a higher concentration in West Africa (Ghana 5; Nigeria 7; Senegal 3), with Eastern Africa (Kenya 3) following suit. Other countries have on average carried out two – and one has not been uncommon. It is not clear why more EAs have been conducted in Western Africa and many fewer in Eastern and Southern Africa. Have task managers, especially in the current AF4AE, more interest in EAs than other task managers? Have governments in the other country departments exhibited more resistance to EAs? Yet, in all cases the consultation interpretation of participation remains dominant where stakeholders, including the affected people, were informed of the intention and their acquiescence sought. But we have also noted participation which enabled influencing the decisions about and direction of the project in Western (Benin) and Eastern Africa (Ethiopia).

In terms of the actual projects which have incorporated EAs, energy, agriculture, construction and water supply appear more frequently. In these, the dominant issue seems to be resettlement. Ecosystem-related impacts seem to have been followed less vigorously. As in the case of country spread, does this reflect the

Box 4			
<i>Weight of EAs by country</i>			<i>Favored Areas</i>
<i>Country</i>	<i>No. of EAs</i>	<i>Area</i>	<i>Share of EAs</i>
Ghana	5	Energy	20%
Nigeria	7	Agriculture	13%
Senegal	3	Construction	13%
Kenya	3	Settlement	7%
All remaining	37		
<i>Weight of EAs by sub-region</i>			
Western Africa	31		
Southern Africa	11		
Eastern Africa	10		
Central Africa	3		

interests and preferences of task managers? If real participation were practiced, could we see more ecosystem-related concerns emerge with a greater force?

Why so few participatory EAs?

Six years after OD 4.00, not all Bank-supported EAs have enabled participation of the affected people, NGOs or other stakeholders, although the situation has been improving by the year. The reasons for not adopting participation might lie in the following:

Within the Bank

The structure of the institution may pose some difficulties to the easy implementation of participation. The Bank is a public multilateral organization composed of governments – it is a lending institution. Unlike other multilaterals (and bilaterals) it cannot move into any country and start implementing projects or carrying out any activities, or indeed working with whichever groups it chooses – its clients are governments. Clearly, this means that how the Bank implements its directives in the field depends on the receptivity of the principles and practice of EA by a given government. African gov-

EA in Africa — A World Bank Commitment

ernments are being converted to the value of EIA (Environment Impact Assessment), but a number do not have legal and institutional frameworks for effective implementation of environmental assessments. EAs are carried out on an ad hoc basis in response to individual donor requirements. The style with which a task manager works with a given government could play some role in the extent to which EAs can be carried out. Task managers are central to how country operations are received by clients, and the TM's powers of persuasion and level of commitment will determine whether any Bank directive would be operative or not. Indeed, the introduction of paragraph 19 in the revised OD of 1991 which read "*consultations do not reduce the decision authority of the borrower*" could have been a reaction to members' uneasiness about the 1989 OD which might have been interpreted as setting conditionalities.

Traditionally, the Bank was staffed and managed by economists and engineers, to whom the social science methodology of interacting with and learning from communities was foreign. Therefore, the appreciation of the concept and practice of participation has been an evolving process, pushed by social scientists recruited in the last few decades. Participation is a learning process, and the extent to and pace with which it is appreciated and applied will occur within this reality. The pace of introducing participation in EAs and its quality have been a reflection of the commitment of individual task managers, as well as shifts in the institutional stance.

Participation consumes time and money, especially time. Projects and assessments within the project cycle are cast in time frames, placing constraints on the extent and quality of participation. Strategic EAs might work towards solving this problem.

At the country level

Most of the governments and institutions that provide consultants for the EAs are made up of officials whose training prepared them for top-down approaches. This has hampered the appreciation, acceptance, pace, and quality of participation. It has delayed genuine translation of the concept and practice of participation. Yet, most of Africa's formal-sector officials have experienced poverty at one time or other, or they continue to have social connections with poorer people. They should appreciate the value of participatory approaches much more than people from the Northern donor communities and organizations like the Bank. This is why this author believes that the top-down educational systems bear the greater responsibility for any non-participation stance these officials might hold.

Like the Bank, borrowers face the constraints imposed by time and money. In terms of time, the budgets do not include provision for EAs, let alone participation, which can be a slow process likely to impede the planned completion of projects. Governments operate within project time frames. Therefore, they work under pressure, and feel they cannot afford the "luxury" of EAs. They see money as an even greater constraint, although all evidence now points to the relative cost-effectiveness of EAs and participation within them.

Future of hope

The above observations notwithstanding, there is hope for participation in both quantity and quality.

Within the Bank

Participation has been gaining ground, particularly since 1992 when the Learning Group published its first reflections on the Bank and Participation. The *Sourcebook on*

Participation pulls together some of the experiences in participation by task managers. These experiences are living examples of what a committed task manager can do with participation even against a background of interpretation limits within the institution. There are task groups on participation in the operational regions of the Bank, while seminars which are a regular feature, help spread the concept and practice among staff and management. Interaction with NGOs is going beyond the traditional Washington-based ones to include those from within Africa itself. The NGO Unit, headed by a former NGO person, has both intensified this interaction and furthered Bank appreciation of participation. Many resident missions in Africa have appointed NGO/participation liaison officers.

This emerging relationship with NGOs is reflected in organizational shifts. As stated, the Bank works through governments; but it wishes to be informed by NGOs as much as by governments in its evolving policies. In addressing poverty, many ways are being sought, within the constraints of its mandate, to develop various intermediaries, including NGOs. Task managers have managed to persuade some governments to execute projects the Bank is supporting through NGOs. Interaction with NGOs, in addition to the developments within the Bank, have contributed to a greater awareness and commitment on the part of task managers.

Within Africa

What is happening in Africa might be reflected in the Africa High-level Ministerial meeting held in Durban on June 24-25, facilitated by UNEP, and just prior to the IAIA conference. The meeting devoted a session to public participation in EAs. Ministers emphasized the need for awareness-raising among government personnel and politicians on the value of participation. Surely, this reflects shifting perspectives which have been emerging within Africa, particularly among politicians. The pace and extent of the penetration of participation into the professional community is yet to be determined. However, the professionals at the high-level meeting, accompanying or acting on behalf of their ministers, seemed to be experiencing similar shifts.

The democratization processes are also furthering appreciation of participation in Africa. These processes are opening up avenues for listening at a time when people are demanding to be heard. The need to preserve the environment has also created the imperative for listening. And onto this scene have come NGOs, who view their role as including advocacy for good governance. Their advocacy work on behalf of the poor is contributing to governmental shifts in their relations with the poor and normally voiceless people.

Dialogue and information-sharing

The learning process within the Bank and in its relations with its clients have resulted in dialogues across the board: between various sections and sectors within the Bank; between Bank and clients (governments); between Bank and NGOs, including indigenous, Africa-based ones; and between governments and their peoples, including industry, the poor, academia, and other professionals. In order to make this dialogue effective, information needs to be shared — and this is beginning to happen. As we move from project to strategic EAs, strengthened participation will enhance EA's role as a development tool (see Goodland and Tillman).

Conclusions and agenda for action

A survey of some projects where EAs have been conducted has shown that EAs have been increasing over the years; but it would appear that applying participation in EAs

Box 5 : Agenda for action

-AFTES project and environment assessment review team will initiate dialogue with ENVSP aimed at reviewing the practice of participation in EAs in the light of the evolving definition of the concept.

-AFTES will take a more vigorous and systematic approach in looking at EAs for their participation component.

-AFTES will liaise with ENVSP and EDI with a view to developing training on people-centered methodology for participation in EAs which task manager could share with clients.

-AFTES will stimulate cross fertilization with other operational regions within the Bank with a view to improving the quality and quantity of participation in EAs.

NGO/participation liaison officers at Resident Missions will play lead roles in monitoring EAs.

-AFTES will intensify the networking with NGOs so that together a mechanism may be developed to allow NGO monitoring of EAs.

is still lagging. Thus, while EAs are on the increase, participatory approaches may not be assured. Second, participation continues to be dominated by the objectives of informing the affected people and having them influence where possible.

Policy on EA participation has not kept pace with the interpretation of participation as it has evolved in the Bank over the last three years. In 1992 the Learning Group on Participatory Development defined participation as a process that enabled *influence*; in 1994 they saw participation as enabling *influence*

and sharing control. The directive on participation in EAs was revised in 1991. Thus, participation remains dominated by the consultation interpretation and objective of influence. Any plan of action in this area must start with this reality.

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Environmental Assessment's Influence on World Bank Projects in Sub-Saharan Africa

Jean Roger Mercier & Olav Kjørven

Summary

The objective of this paper is to shed some light on the effectiveness of environmental assessment (EA) as a decision support tool. It draws on the findings of both quantitative and qualitative analysis of the Bank's EA experience in Sub-Saharan Africa (SSA) since the launching of the EA procedure (*Operational Directive 4.01: Environmental Assessment*) in 1989.¹

The most salient findings of the quantitative analysis are:

- Compared to other regions, a small share of Bank-financed projects in SSA – only 3 percent – has been subject to the Bank's most extensive EA requirements. Bank-wide, some 10 percent of projects are classified in Category A, meaning that they require "full" EAs.
- Most of the Category A projects in SSA are energy related: thermal power plants, hydro-electric schemes, and oil/gas field development.
- More than one third of Bank financed projects in SSA are subject to a less extensive EA process (Category B), meaning that their potential impacts are limited and more readily manageable. The level of analysis and effort ranges from minimal to almost at the level of a full Category A EA treatment.

The qualitative analysis focuses more directly on effectiveness, or the influence of EA on project design and decisions. Careful examination of a number of projects shows that EAs usually exert influence on projects, but in different ways and to varying degrees. Generally speaking, EA influence falls into one or more of the following categories:

- choice of technology
- site selection
- technical design alterations
- dropping/adding of project components (or even the financing of a whole project)
- alteration of the absolute or relative importance of components
- introduction of environmental mitigation plan
- introduction of institutional measures (e.g., establishment of an environmental management unit in an agency or utility, setting up a monitoring system, training);
- additional studies and research.

The ultimate effectiveness – or benefit – of EA can only be determined from looking at results "on the ground," whether during the implementation of a project or – even more effectively – after its completion. Projects subject to full EA are now maturing to an extent that allows for such analysis. So far, the Bank has conducted one in-depth review of projects involving involuntary resettlement. It found that projects which had been subject to full EA performed better in terms of the management of resettlement than those which had not. The next challenge is to examine the benefits of EA in broad terms of management of the environment and natural resources.

¹ The main source of information is *Environmental Assessment in Sub-Saharan Africa: A World Bank View* (1995), published as a building block to the "Africa 2025 Initiative": *Toward Environmentally Sustainable Development in Africa*. The paper also draws on a recently completed review of the Bank's EA experience: *The Impact of Environmental Assessment* (1996).

Contents

I. Overview	83
A quantitative analysis	84
A qualitative analysis	89
II. The issue of EA influence and some examples	90
EA influence	90
The opinion of selected authors	90
Influence of EA and ER on other environmentally risky projects	92
EAR Review: a few conclusions	94
III. Proposal for an improved knowledge of the issues and for remedial action	96
Bibliography	99
Annex 1. List of Category A World Bank-financed projects in Sub-Saharan Africa	103
Annex 2: Proposed methodology for in-depth research	104
List of figures	
1. Regional patterns in classification: category A	85
2. Degrees of Category B Environmental Analysis (FY 93 & 94)	87
List of tables	
1. Degrees of Category B Environmental Analysis, FY 1993 and FY 1994	86
2. EA Preparation cost as a proportion of project cost	87
3. Distribution of World Bank-financed Category A projects in SSA (1990-1999)	89
4. Frequency of resettlement problems vs. Environmental Assessment Category	92

More than anywhere else in the world, Sub-Saharan Africa relies on its environmental resource base, both from an economic and social point of view. Its environment is at risk, however, due to interdependent issues (heavy reliance on natural capital, poverty and population growth, urbanization and migrations, and difficult economic transitions).

—Toward Environmentally Sustainable Development in Sub-Saharan Africa: a World Bank Agenda (World Bank 1995)

This paper draws a substantial amount of its information from a separate publication, "Environmental Assessments in Sub-Saharan Africa: A World Bank View," published as one of the Building Blocks series of the "Toward Environmentally Sustainable Development in Africa" initiative, also called *Africa 2025*. Wherever relevant, cross-references to the former document will be made, although the following contribution has been designed to stand on its own.

I. Overview

Environmental assessments (EAs) have been conducted in SSA for more than a decade, mostly for projects financed by external donors and under the requirements of these donors.² Gradually, however, African countries have adopted legislation and procedures and are increasingly implementing their own approaches.³

What most procedures have in common is a system for environmental screening and classification up front to indicate the level of analysis appropriate for a given project proposal. In the case of the World Bank, "Category A" indicates an expectation of significant environmental impacts and a need to undertake a "full" EA process, including the preparation of a comprehensive EA (or EIA) report. "Category B" indicates that a proposal may have impacts of a lesser magnitude that can be more readily mitigated. Some level of environmental analysis is necessary, depending on the types of impacts. For some projects, a mitigation plan alone may suffice, while for others it might be necessary to undertake an environmental audit (e.g., in the case of a rehabilitation of existing power facilities) or to develop design or site criteria. "Category C" indicates that no adverse impacts are expected and that no EA work is needed.

The division of responsibilities for EA under the Bank EA procedure can be summarized as follows (see also Figure 1): The borrower (usually a government) is responsible for undertaking the EA process, including the hiring of a consulting firm or consultant to actually carry out the EA study, the incorporation of EA findings and rec-

² These include multilateral agencies such as the World Bank, the International Finance Corporation (IFC), and the African Development Bank (AfDB), most bilateral donors, and some NGOs.

³ Many donors and countries use the term "environmental impact assessment" (EIA), whereas the World Bank and some others have adopted the term "environmental assessment" (EA). The term "EA" conveys an emphasis on EA as a process concerned with influencing project design and implementation, besides assessing and mitigating impacts. EA is a process that encompasses the use of instruments such as impact assessment, environmental audits, risk assessment, etc..

ommendations into the final project design, and the approval of the EA as a basis for giving the green light for a project. The World Bank's project task manager (often called "project officer" in other organizations) and Regional Environment Division (AFTES, in the case of SSA) classifies the project into one of the three categories. The Regional environment division also assists the task manager in reviewing EA Terms of Reference (TORs) and is responsible for the internal environmental review of the EA report and the project. The task manager is responsible for general information management and general assistance to the borrower.

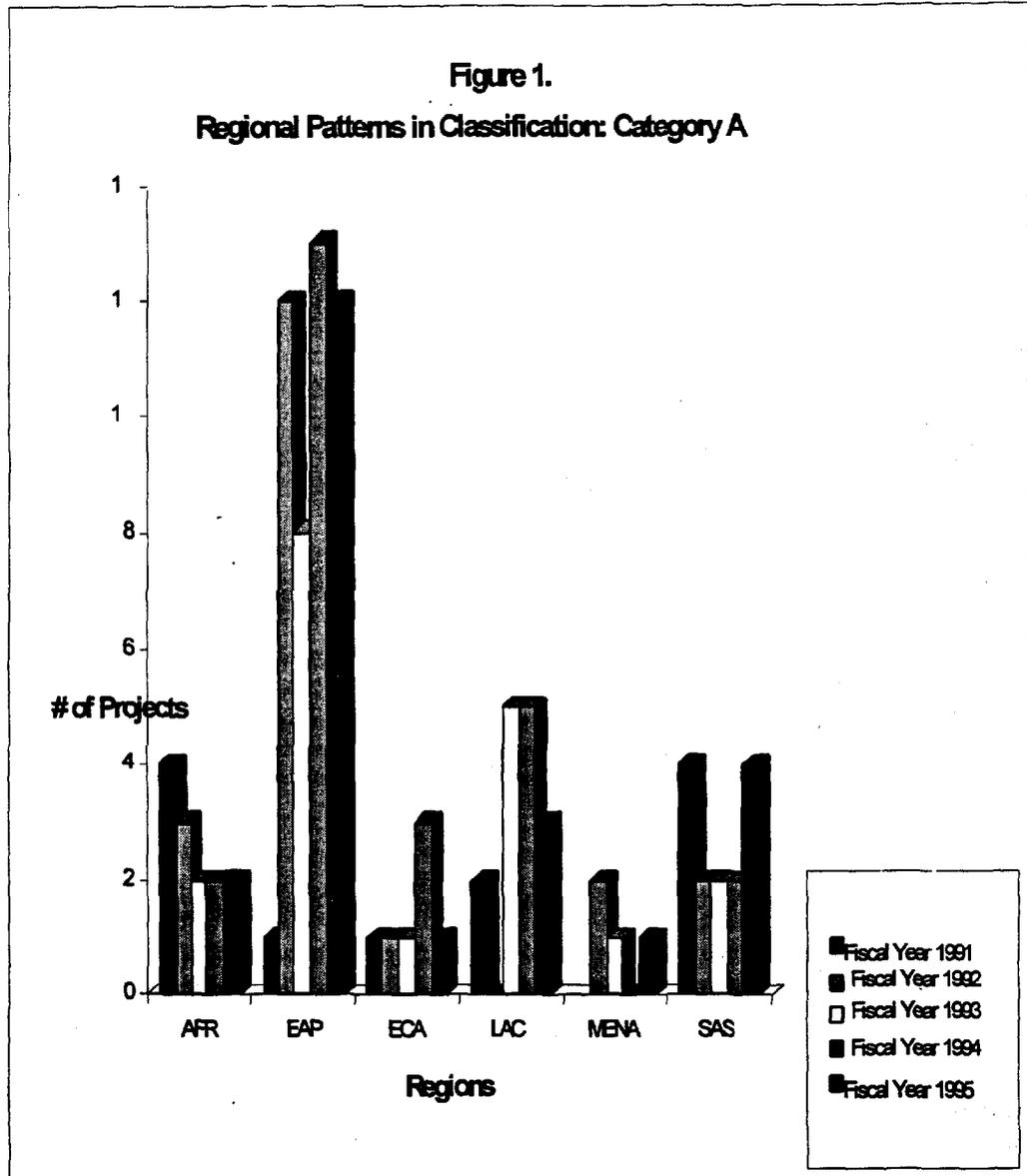
The recent Bank-wide "Second EA Review" found that these arrangements were working reasonably well, although the Bank's assistance was often critical in ensuring satisfactory quality of the EA report and incorporation of major recommendations into the project. In general, most EAs in Africa were carried out by international consultants, with some local support. The Review identified a need to build professional EA capacities in SSA (see a detailed description in the contribution by Harou and Dalfelt).

A quantitative analysis

To integrate environmental concerns into economic development better, the environmental assessment (EA) procedure was introduced into the World Bank group in 1989 and strengthened in 1991. Environmental assessment is a process of evaluating a project's environmental impact and identifying ways to improve the project environmentally by preventing, minimizing, mitigating or compensating for adverse environmental impacts. At the same time, this procedure established the environmental review of projects and programs cofinanced by the Bank. This review covers the entire project cycle, from preparation to completion. Six years after introduction of EAs, a majority of African countries have adopted, or are adopting, the procedure, and the environmental assessment procedure has been internalized in the World Bank group.

The Bank has cofinanced 500 or so projects in Sub-Saharan Africa (SSA) during the last six years. They have all gone through environmental review, 3 percent through full-fledged environmental assessment (Category A according to the OD 4.01) and 34 percent through environmental analysis (Category B), a lesser version of environmental assessment. The remaining projects were subject to initial environmental screening and are part of the general environmental monitoring of the Bank's portfolio. This compares with other World Bank regions as follows:

Significant improvements have been made in analyzing Category B projects. Table 1 and Figure 2 outline the EA approaches taken for all Category B projects in FY93 and 94. They suggest that environmental analysis for Category B projects is becoming more extensive, as the relative share of projects with moderate to extensive levels of environmental analysis is increasing.



Note: AFR=Sub-Saharan Africa; EAP=East Asia and the Pacific; ECA=Central/Eastern Europe and Central Asia; LAC=Latin America and Caribbean; MENA=Middle East and North Africa; and SAS=South Asia

EA in Africa — A World Bank Commitment

Table 1 Degrees of Category B Environmental Analysis, FY 1993 and FY 1994

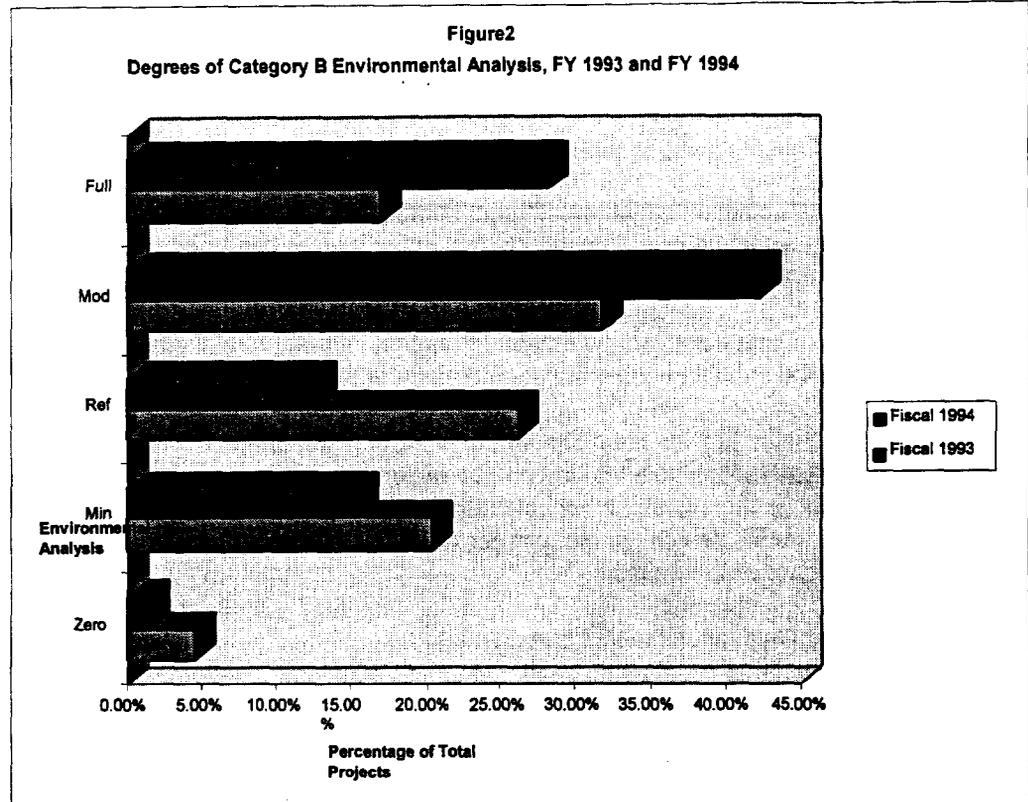
Region	Zero	Min	Ref	Mod	Full	Total
FY 1993						
AFR Count	3	3	4	10	8	28
EAP Count	0	3	5	3	4	15
ECA Count	0	2	3	2	0	7
LAC Count	1	2	7	4	0	14
MNA Count	0	6	1	3	1	11
SAS Count	0	2	3	6	2	13
Total	4	18	23	28	15	88
FY 1994						
AFR Count	1	5	5	9	4	24
EAP Count	0	2	1	5	9	17
ECA Count	0	0	1	2	0	3
LAC Count	0	3	2	9	4	18
MNA Count	0	0	0	0	1	1
SAS Count	0	1	0	5	2	8
Total	1	11	9	30	20	71

KEY

Zero:	Nothing on environment
Min:	Minimum mention of environment
Refs:	Refers to studies associated with other projects or to existing or planned guidelines, standards, procedures, regulations, manuals, etc.
Mod:	Moderate level of environmental analysis e.g., mitigation plan or management plan, often in the form of an annex to the SAR
Full:	Analysis close to the level of a Category A EA report

Considering the two years as a whole, 12 "B" projects with full or close to full EAs were located in the Africa Region and 13 in the East Asia and Pacific Region, many of which were in China.⁴ African examples include the Urban Transport Project in Ghana (FY93) — which included EAs for two components — the Freetown Infrastructure Rehabilitation Project in Sierra Leone (FY93), the Second Power Project in Guinea (FY93), and the Lagos Drainage and Sanitation Project in Nigeria (FY93).

⁴ In China, all Bank Category B projects are treated under national environmental legislation as if they were "A" projects. In other words, they are subject to China's full EA requirements. While these EAs fall somewhat short of Bank requirements for Category A projects, they are normally more than adequate for B projects. In Brazil also, full EA according to Brazilian law is frequently required for projects considered to be in Category B by the Bank.



Mobilizing the borrowers and the World Bank staff in EAR has required cooperation among several groups inside and outside the institution and, although the resources required to conduct EAs are few compared with the requirements of engineering studies, finding the human, technical, and financial resources required for EA preparation (see table 2) and for the implementation of their operational recommendations has been problematic. The Regional Environmental Divisions have played a critical role in assisting governments and Bank operational staff to integrate environment into their project design and implementation.

Table 2: EA Preparation cost as a proportion of project cost

Sample Projects	EA Preparation Cost (1,000 \$US)	Total Project Cost (\$US millions)	Percentage EA cost/per.
Ghana Thermal	250	400	0.06
Tanzania Forests Resources	131	26	0.5
Kenya Energy Sector	510	1,000	0.05
Gambia Port	92	20	0.5
Guinée Bissau Petroleum	20	20	0.1
Malawi Power V	180	231	0.08

Source: World Bank

Environmental Assessments performed in Sub-Saharan Africa now amount to a significant number. In fact, EA as a decision making tool has been acknowledged as very useful and the high level meeting of African Ministers in Durban (June 1995) proposed to intensify its use (see box 1).

Box 1: Areas for Immediate Priority Action Identified at the 1995 African Ministerial Meeting on Environmental Impact Assessments

"We, the African Ministers and government representatives responsible for the environment . . . identified the following areas for immediate priority action:

(a) promoting the use of EIA as a continuous planning tool and the strengthening of institutional and legal frameworks for this purpose to ensure the enforcement of EIA by fully integrating this tool, including biophysical and socioeconomic aspects, from the early stages of policies, plans, programs and project formulation, implementation, monitoring the commissioning and evaluation;

(b) sensitizing policy and decision makers;

(c) establishing (an EIA database, a geographic information system, information exchange, a network of experts);

(d) promoting cooperation (exchange of experiences and developing guidelines);

(e) promoting cooperation between developed and developing countries;

"(f) promoting capacity building, based primarily on the use of African expertise and institutions, and urging our countries to:

1. -develop curricula and other training programs to incorporate environmental education and EIA at all levels of education and training;
2. -encourage governmental and non-governmental organizations active in environmental management to participate in all related capacity-building activities, as well as in regional training programs;
3. -enhance public awareness and popular participation, particularly NGOs, women, youth and community level organizations in the development and use of EIA; and
4. -encourage all environmental movements active in the region to promote the development and use of EIA in all their activities . . .

Source: Extracts from the communiqué cosigned by all ministerial delegations present at the Africa High-Level Ministerial Meeting on EAs in Africa, held in Durban, South Africa, June 1995.

EA's Influence on World Bank Projects

As an increasing number of donors make these procedures compulsory, EAs in Africa have become a common phenomenon:

- African Development Bank (1992-1994): 25 to 34 Category I projects per annum (i.e., 14 to 24% of the lending program) and 44 to 91 Category II projects per annum (i.e., 31% to 63% of the lending program)
- USAID: 25 Environmental Mitigation, Evaluation and Mitigation Plans (EMEMP) prepared during the 1992-1994 period
- World Bank (IBRD and IDA): According to available statistics on past and future projects, the evolution of Category A projects is as follows (projects by fiscal year of effectiveness):

Table 3: Distribution of World Bank-financed Category A projects in SSA (1990-1999)

Fiscal Year	1990-91	1992-93	1994-95	1996-97 (p)	1998-99 (p)
Number	6	5	6	14	6
Credits/Loans (M US\$)	415	402	403	886	275

This represents a total of 37 projects, out of which 17 were either completed or under implementation by the end of fiscal year 1995 (June 30th 1995). This is 3 percent of the overall World Bank program during the period. Category B projects represented 34 percent of the overall program over the same period.

A qualitative analysis

The division of responsibilities for Environmental Assessments in the World Bank procedure as it described in the Operational Directive (O.D.) 4.01. can be summarized as follows: The borrower (usually the government) is responsible for the Environmental Analysis or Assessment. The task manager in the World Bank is responsible for the environmental classification, information management and general assistance to the borrower. The Regional Environmental Division, also at the World Bank, is responsible for the internal Environmental Review of the project, and, generally, a consultant or a consulting firm, hired by the borrower, carries out the Environmental Assessment.

The quality of the Environmental Assessments performed has been the subject of several reviews. Dr. Joy Hecht, for USAID, reviewed the experiences with EMEMP in four African countries (Ghana, Malawi, Uganda and Madagascar) and concluded that several key linkages were missing in the plans reviewed. The author recommended that more efforts should be put in the following directions: more focus of USAID on sustainable income growth, search for causal relationships between project activities and environmental changes in the countries, concentration on the key monitoring indicators once the causal relationships have been established, need for developing a broader agenda for research funded through EMEMP, need for more and better resources allocated to the program, need to address strategic issues in addition to project-specific issues, better focus on primary data quality, even when secondary data are used for practical purposes.

At the World Bank, two Bank-wide EA reviews (1993, 1995) were conducted. The general conclusion of the latest detailed review was that *".. the quality of EA for Bank-financed projects has improved when compared over time..... In the areas of mitigation, monitoring and management planning in particular, the Bank is often instrumental in helping*

EA in Africa – A World Bank Commitment

borrowers to finalize sound, comprehensive plans during project appraisal. The weakest aspects of EA work continue to be public participation and analysis of alternatives, although there is recent evidence of progress in these areas as well....." (World Bank, 1995, Second EA Review).

II. The issue of EA influence and some examples

EA influence

The issue as discussed in this paper is "to what extent does the environmental assessment procedure as it is used now influence the way projects are designed and implemented in World Bank-financed projects?" In other words, are EAs just a bitter pill to swallow for the users or do they help modify the project to make it more environmentally sustainable?

An EA's effectiveness largely depends on two factors: its quality in technical terms, and the degree to which it influences a project's conceptualization, design and implementation. Although the Bank and its borrowing member countries have made significant progress over the last three years on both fronts, building on experience as it accumulates, major challenges remain. These are shared with other agencies and institutions involved in project development and EA.

The second EA Review has found that the quality of EAs has generally improved over time. Most progress has been made in the areas of impact identification and assessment, and in the development of mitigation and institutional responses. The areas where EAs still tend to be weak are analysis of alternatives and public participation. The Review recommends a number of steps which could strengthen performance in these and other areas, including EA capacity building in-country and development of better guidance to Bank staff and to borrowers.

Moving on to the main subject of this paper – effectiveness of EA vis à vis project design and decisions – the Second EA Review found that EA, as a process, may influence a project's development at four distinct stages: during environmental screening, during preparation/design of the project; during negotiation of binding implementation agreements, and during implementation. The review found ample evidence of influence at all these stages but also identified shortcomings and opportunities for improvement. Other studies more focused on Africa have found that EAs often fail to influence decision-making and the design of projects due to institutional and regulatory shortcomings.

The opinion of selected authors

Authors generally tend to have a pessimistic view of the actual influence of EA on project design and implementation. For instance, Hirji & Ortolano, looking at the experience of the Tana and Athi Rivers Development Authority (TARDA) in conducting EIA since 1976, write:

"... EIA conducted in response to instrumental controls did not substantially influence TARDA's projects.... In two cases in which TARDA initiated EIAs on its own,, it effectively use the assessments to legitimate its activities and previously held positions. What appeared to begin as manifestations of professional responsibility turned into exercises where study results had no substantive influence on decisions."

EA' s Influence on World Bank Projects

And Kakonge & Imevbore (Africa) say: "... without [legislation requiring EIA for all development activities as a prerequisite], EIA will not influence decision-making and will be used on an ad hoc basis by development assistance organizations as a condition of project funding....".

The Second World Bank-wide EA Review sounds slightly more encouraging and goes into more details on preparation and implementation:

"... [R]ecommendations contained in EA mitigation, management and monitoring plans were incorporated in the Staff Appraisal Reports (SARs) in the vast majority (85%) of the Category A projects reviewed..... Category A projects, which require a full environmental assessment, have a better track record on average in terms of their implementation than other Bank projects... They also appear to perform better on environmental aspects than on most other performance variables.... However, it should be borne in mind that other factors, such as the sectoral and regional distribution of Category A projects, may be more important determinants of above-average performance..."

This positive view appears to be shared with the Barry Saddler, main author in an EA effectiveness study. In spite of some contribution to project design change, however, Saddler concurs with Robert Goodland and Robert Tillman that it is time to move upstream and encourage the widespread use of Strategic Environmental Assessments (SEA), as well as Environmental Sustainability Assessments (ESA).

One of the most sensitive issues of project preparation and implementation in Sub-Saharan Africa, the involuntary resettlement of affected people, seems to have been better addressed in projects submitted to Environmental Assessment or Analysis than in the other ones, as described in Box 2.

Box 2: Influence of Environmental Assessment and Environmental Review on Resettlement-prone projects

The threat to the environment and the possibility that hundred of thousands of people might have to be resettled against their will was an extremely potent argument against the financing by the World Bank of the Narmada Dam in India. This was one of the major forces behind the adoption of the first Operational Directive (OD 4.00.) establishing the environmental assessment procedure.

The review of the 25 "problem" projects (with potential for the involuntary resettlement of 80,000 some people) in the Bank's portfolio in late 1994 clearly indicated that the EA procedure, when applied to Category A projects, had a positive impact on the management of involuntary resettlement. Though the sample was small (only 4 Category A projects in the data analyzed), statistics support the intuitive idea that projects with resettlement surveys, plans, budgets and timetables, deliver better results than the others.

EA in Africa — A World Bank Commitment

Table 4 : Frequency of resettlement problems vs. Environmental Assessment Category

EA Category	Problem Projects (%)
A	25%
B	44%
C, D or U	50%

^o % is expressed in terms of problem projects vs. total number of projects in the same EA category.

^{oo} % refers to the total number of affected people in the 25 projects (an estimated 78,000)

Source: (1995 RRAP)

Influence of EA and ER on other environmentally risky projects

This is an area where investigation went into slightly more depth, although with limited resources, during the preparation of this paper.

TANZANIA FOREST RESOURCES MANAGEMENT PROJECT

The Tanzania Forestry project was designed in the late 80s and prepared by the Tanzanian Government with the assistance of the World Bank during the early 90s. It is a 1992 project where the World Bank provides 18 US\$ million in credit out of a total project cost of 26 US\$ million. Interestingly enough, the title of the project changed substantially over time, from Tanzania Forest and Fuelwood project to Forest Resources Management project with significant variations in the meantime.

The EA for that project was conducted in mid 1990, three months before appraisal and only six months after the first EA OD had been published in the Bank. Five out of the seven main EA recommendations were integrated in the project White Cover document as explicitly stated. Another change worth mentioning was that, after EA, the cost of the field component of the project went from 36 percent of total project cost to 42 percent. No cost-benefit analysis of EA recommendations was performed, and no further environmental monitoring was conducted.

Recommendation	Accepted?	Reason for the choice
Local incentives for conservation	Yes	
Village Woodland Management	No	Too large scale, too little previous field experience.
Forest Reserves: involving villagers	Yes	
Training Foresters	Yes	
Helping the village substitute electricity for charcoal	No	World Bank staff estimated that it was economically non viable
Studies and research into woodland management	Yes	

MALAWI POWER V PROJECT

The Malawi Power V project was designed in the late 1980s and prepared by the Malawi Government with the assistance of the World Bank during the early 1990s. It is a 1992 project where the World Bank provides 55 US\$ million in credit (total project cost US\$ 231 million). The EA for the project contained six major recommendations, all but

EA's Influence on World Bank Projects

one being integrated into the project design. There also, no cost-benefit analysis of the recommendations was performed.

Recommendation	Accepted?	Reason
Environmental & Health Protection in contracts	Yes	ESCOM Environmental Unit (EU) was created and took responsibility.
Compensation for the loss of wild-lands	Yes	Combination of provision for guards and direct compensation
Vegetation & Cultural Property Survey	No	Cost?
ESCOM in-house EU	Yes	
Removal of woody vegetation	Yes	Forestry Department did it.
Rerouting of transmission line.	Yes	Minimize environmental nuisance, resettlement requirements & maintenance

NIGERIA FADAMA IRRIGATION PROJECT

The Nigeria Fadama Irrigation project was designed in the late 80s and prepared by the Nigerian Government with the assistance of the World Bank during the early 90s. It is also a 1992 project where the World Bank provides 68 US\$ million in credit (total project cost US\$ M 106). The EA for the project contained five major recommendations, two of which were integrated into the project design. There also, no cost-benefit analysis of the recommendations was performed.

Recommendation	Accepted?	Reason
Surface Water Intake dropped	Yes	Project Environmental Category dropped from A to B as a consequence.
Environmental Monitoring	Yes	A groundwater quality monitoring system has been set in place for a total cost of 1.7 M \$.
Water Resources Management Plan	No	National program outside the scope of the project
Fencing of the land to separate farmers from Fulanis (nomadic herders)	Yes	Achieved through public participation
Creation and management of additional protected areas	No	National/State Policy outside the scope of the project

EA in Africa — A World Bank Commitment

EAR Review: a few conclusions

Six major *change categories* were identified as possible outcomes of the EA process:

- Institutional arrangements & additional capacity building
- Dropping/adding components (or the financing of the project itself)
- Increasing the absolute/relative importance of components
- Additional studies and research
- Choice of technologies
- Site selection

The non-scientific impression from the quick review conducted is that the major changes actually recorded in the World Bank-financed projects in Sub-Saharan Africa belong to the first category (institutional arrangements and additional institution building). However, examples of changes in other categories have been observed and can be summarized as follows:

Dropping/Adding components (or the financing of the project itself)

EA work has prompted major changes in the design of some Bank-financed projects. In some cases, it participated in the decision by the Bank to withdraw from the financing of a project: for instance the construction of the Manantali Dam on the Senegal River during the 1980s. In other large dam construction projects like Garafiri in Guinea and Adjarala on the Togo/Benin border, the results of the environmental studies conducted has been adding to the fragile economic profitability of the investments.

Increasing the absolute/relative importance of components

KENYA ENERGY SECTOR - The EA caused several changes. It recommended that the new plant not have perimeter fencing that would exclude wildlife and livestock, so only well heads and extractors will be fenced, and animals can wander freely though the field. EA also determined that the condensate would not be as sweet as first geothermal station so that surface disposal was not sound. The new field will have the condensate reinjected into dry wells. The EA for this project also determined that water extraction from Lake Naivasha was greater than the amount authorized by extraction permits. While the geothermal station would be a relatively small user, the other users represent a threat to the lake. The EA also pointed out that a Japanese funded water project was extracting water from the rivers feeding the lake and diverting it to Nakuru without EA. As a result of the geothermal EA, the managing director of the power company raised the extraction issue in the Council of Ministers, and the second phase of the Japanese project was stopped until an EA could be completed.

Requirement for additional studies and research

The environmental monitoring component of the Nigeria Fadama Irrigation project, as well as the environmental monitoring sub-component of the Ethiopia Calub Energy Project (part of the community development component of the project) are typical examples of such changes.

Choice of technologies

Ghana Thermal Power Project (effective in 1995), where the water cooling system of the power plant was replaced by a less polluting air cooling one.

Site selection

Examples of such changes include the Malawi water supply project, where a wetland was the initial site of the to-be-constructed reservoir, and where an alternative site was

EA's Influence on World Bank Projects

selected after the EA on the basis of the ecological value of the wetland. Other examples include the following:

- **KENYA EWASO NGIRO PROJECT.** This EA has not been officially submitted to the Bank because the dams will not be financed under the loan now under preparation, but the EA work is essentially complete. After the project was roughly defined, a series of EA unit teams did preliminary EA work. Based on their recommendations, the project was redesigned and another round of EA work was completed. The biggest change was the substitution of a weir for a dam and reservoir on the Mara River which would have taken a large amount of prime wildlife habitat. The EA also resulted in a "hands-off" flow through the weir that could not be interrupted so that the Maasi Mara Reserve and tourist facilities would be guaranteed water throughout the year. The EA also designed in amenity flows for the Eswao Ngiro dams.
- **BOTSWANA TULI BLOCK ROADS PROJECT.** The EA and archeological survey found an important archeological site which caused a route change. The EA also introduced some significant stream protections where the road transversed waterways.
- **GAMBIA THIRD PORT PROJECT** (now known as "Gateway Project. The EA provided a better alternate route from port even though it involved a small amount of resettlement. The new route is less dangerous for the inhabitants and will also reduce the disruption from port traffic.
- **MALAWI POWER V.** The EA for the transmission route found a corridor that would reduce intrusion on wildlife habitat and the amount of involuntary resettlement.

The *critical issues* identified during the review of this EA were:

- the difficulty in tracking down actual changes in project design and the reasons thereof;
- the central role of the Environmental Mitigation Plan, when it has been spelled out clearly in the conclusion of the EA document;
- the potentially critical role of (environmental) economics and/or public participation; e.g., for the analysis of the recommendations as well as for the ranking of the EA recommendations;
- the critical role of monitoring, evaluation and supervision.

It is difficult to identify *ex post* when and where major design changes have been decided upon. A typical large-scale project like the ones financed with World Bank assistance takes years of preparation, and many social, technical, and even political factors interact with that preparation. Project preparation starts with a very broad description of the project and refinements take place as project preparation proceeds. Reasons for changes are not always documented.

In most of the early EAs, and even now, the recommendations of the EA are not structured in a comprehensive and consistent Environmental Mitigation Plan, making it difficult to identify which of the recommendations are the application of precautionary principles and which are critical to the protection of the environment. Without an EMP that describes the actions undertaken, who is responsible for their implementation, and how these will be financed, changes in project design are based on arbitrary decisions made in closed circles with no explicit criteria.

EA in Africa — A World Bank Commitment

Two possible (and complementary) ways to avoid arbitrary selection are the intensive use of economics and increased public participation. Unfortunately, these have been scarcely used (see Shimwaayi Muntemba's paper on public participation). EA preparation is a predictive exercise and it can only be comforted with hard data coming from field surveys and, in particular, from the environmental monitoring of projects of the same kind being implemented. Here again, there is a lack of both hard data and of a proper framework for turning the — usually — very detailed and analytical data collected into useable indicators.

III. Proposal for improved knowledge and remedial action

This «quick and nasty» review leaves many questions unanswered, and, at the same time, opens up avenues for more in depth research. Although not a perfect procedure, EA has shown its capacity to maintain a fruitful dialogue among the various stakeholders of environmental management in SSA, as well as to control major impacts of projects (for example, involuntary resettlement). The main lessons learned can be summarized as follows:

- Progress on EAs in SSA has been significant. Borrowers have accepted the Bank's EA procedures, and more than half of the countries have some EA legislation, although most of the time human and technical resources lag behind. Coordination among donors is still far from satisfactory, and experience in monitoring environmental impacts in the field is limited.
- The EA preparation process is generally hampered by a lack of proper financial instruments and by insufficient dialogue in the field among assessors, governments, and other stakeholders. The general weakness of national institutions and scarcity of trained African EA specialists have compounded the difficulties. EA preparation has not included enough decision-making tools, such as Geographic Information Systems (GIS) and economics. Nevertheless, EAs have permitted improved management of involuntary resettlement and contributed to improved project design through increased capacity building and monitoring.
- Presently, the environmental assessment process is fully effective for a limited section of the Bank's portfolio. EAs, however, have not been sufficiently integrated into structural adjustment instruments as well as strategic documents, such as Country Assistance Strategies (CAS). Insufficient resources are mobilized for the field supervision of Bank-financed projects.
- Future EA work in the Africa Region will lead to more transparency because of more generous public disclosure standards inside the Bank as well as stricter environmental controls inside both the borrowing countries and the Bank.

To respond to these new conditions and to make up for the shortcomings of the procedure, the overarching goal of the Africa Region's environmental review team will be to maximize its contribution to sustainable development in the field in SSA. The main objectives include:

- increased information flows among the various stakeholders
- improved quality of environmental assessments and of monitoring in the field
- increased proactivity in promoting environmentally sustainable development.

EA' s Influence on World Bank Projects

In the short run (next two years), the team in charge of environmental assessments and review will put its major efforts into the following activities:

- assistance to capacity and institution building for EA in SSA for both the public and the private sector
- improved communication, tools, and methods (notably internal awareness building, networking, strategic environmental assessments – from sectoral environmental assessments all the way to the integration of the environment in public expenditure reviews – improved monitoring systems, use of environmental economics and GIS, and environmental risk analysis)
- promotion of “win-win” solutions (clean technologies, local environmental action plans, renewable energy, and environmentally sustainable tourism).

All practitioners agree that EA must have an influence on project design and help make projects more environmentally and socially sustainable, as was the intention of the brainparents of the legal texts governing EA in Bank procedures. The question is how to best implement this principle.

First, the review conducted shows clearly that project-specific EA procedure is of little relevance to help solve major environmental problems in Africa. Take deforestation, for instance as a major sub-regional issue, or the degrading state of the environment in the Niger Delta in Nigeria as a sub-national issue. In both cases, the project-specific, individual EA approach will be insufficient to cure the evil at its roots. Project-specific EA will only be one of the tools (to be used compulsorily for new projects), but other tools are required, including Strategic EA (see Robert Goodland's and Robert Tillman's paper), environmental audits, and enforcement of legal and fiscal/market-based incentives.

Second, more research should be conducted on the actual effectiveness of project-specific EA in World Bank procedures – a method is proposed and briefly outlined here and in annex 2. This includes a combination of literature review and interviews, the selection of category A & B projects (a total of 8 to 12), an analysis project design before EA (as described in the EA) and after EA, the search for reasons for adopting or not adopting EA recommendations, and the search for the roles played by government and other stakeholders, as well as the integration of data gathered during project supervision.

Third, new project-specific EA tools and approaches are needed. A modest proposal is to encourage the production, at the end of an environmental assessment, of a proposal for a new – “after-EA” – project design, with the “before-EA” project design as a control. In other words, it would be useful for the project designer and environmental reviewer to have a summary table like the following one.

EA in Africa – A World Bank Commitment

Project components	Component cost before EA	Component cost after EA
<i>« Before EA » components retained</i>		
Component 1.1.		
Component 1.2.		
<i>« Before EA » components deleted</i>		
Component 2.1.		
Component 2.2.		
<i>« After EA » components added</i>		
Component 3.1.		
Component 3.2.		

A complementary table should describe the institutional responsibilities for implementing the various components.

Based on the above analysis, one last recommendation would be to encourage a slightly different skill mix in team compositions for medium and large EA preparation, putting more emphasis on using management consultants as indispensable members of teams including social and environmental scientists.

IV. Conclusion

This contribution is part of an on-going process to improve the effectiveness of EA as a decision-making tool with impacts on the ground. The World Bank is developing a series of programs, in partnership with groups in the public and private sector, to help increase that effectiveness in Africa, notably through the following:

- Capacity building
- EA capacity building & workshops (see Harou & Dalfelt)
- Harmonization of EA requirements and procedures (see Barannik & Okaru)
- EA Sourcebook: updating, translating and disseminating
- Improving tools & methods
- EA and resettlement good practices
- Promotion of Strategic Environmental Assessment (see Goodland & Tillman)
- Interface social assessment & participation (see Muntemba)
- Monitoring activities and environmental quality in the field
- Increased use of economics in EAs (see Dixon, Harou & Kjørven).

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Annex 1: List of Category A World Bank financed projects in Sub-Saharan Africa

AFTES - Environmental Assessment Monitoring

<i>Country</i>	<i>Project</i>	<i>Sector</i>	<i>FY</i>	<i>Status</i>	<i>IDA/WB</i>
Guinea	Forestry and Fisheries	AG	90	A	8.0
Somalia	Farahaane Irrigation Project	AG	90	A	28.5
Botswana	Tuli Block Roads	IN	91	A	14.9
Nigeria	OSO Condensates	EN	91	C	218.0
Uganda	Power III	EN	91	A	125.0
Uganda	Livestock	AG	91	A	21.0
Lesotho	Highlands Water Project I	IN	92	A	110.0
Malawi	Power 5	EN	92	A	55.0
Mauritius	Bagasse	EN	92	C	15
Gabon	Forestry/environment	AG	93	A	22.5
Tanzania	Power 6	EN	93	A	200.0
Ethiopia	Calub Energy	EN	94	A	74.0
Mali	Transport Sector	IN	94	A	65.0
Central Africa	Livestock	AG	95	A	17.0
Côte d'Ivoire	Private Energy Sector	EN	95	A	60.0
Gambia	Trade Gateway	IN	95	A	11.0
Ghana	Thermal Power	EN	95	A	176.0
Africa V Region	Regional Power (Adjarala)	EN	96	R	22.0
Côte d'Ivoire	National Parks Protection & Management	AG	96	A	10.0
Ghana	Highway Sector Improvement	IN	96	A	100.0
Guinea	Rural Resource Management	AG	96	R	14.0
Guinea Bissau	Agric. Land & Env. Management	AG	96	A	10.0
Kenya	Energy Sector	EN	96	A	100.0
Nigeria	Escravos Gas Flaring	EN	96	R	100.0
Tanzania	Songo Songo Gas Development	EN	96	A	220.0
Burkina Faso	Ouagadougou Water Supply	IN	97	A	40.0
Equatorial Guinea	Natural Resources Management	AG	97	?	10.0
Lesotho	Highlands Water Project II	IN	97	A	120.0
Mauritania	Senegal Valley Development	AG	97	St	40.0
Nigeria	Irrigation Development	AG	97	R	60.0
Senegal	Senegal Valley Development	AG	97	A	40.0
Chad	Petroleum	EN	98	St	30.0
Côte d'Ivoire	Savannah-Environment	AG	98	St	40.0
Kenya	Mombasa Water	IN	98	St	105.0
Nigeria	Community forestry III	AG	98	A	15.0
Guinea	Power III	EN	99	St	50.0
Senegal	Urban IV	IN	99	St	35.0
					2381.9

Annex 2
Proposed methodology
for in-depth research

The methodology would include:

- Literature review
- Characterization of projects and selection of “representative” projects
- Type of project physical infrastructure, development, policy and institutional building, engineering credit, social fund, other,
- Project preparation history (narrative)
- Selection of a sample of projects
- Cross-time project analysis
- Project before EA (as described in the technical documents, as described in the EA)
- EA recommendations (rationale for the recommendations, role of cost-effectiveness concerns, constraints, e.g., time of EA, categories of changes, are recommendations beyond compliance, what role the discussions with the government played)
- Project after EA (go/no go, project documents including description, costs and qualitative aspects, relevance vs. the likely environmental impacts, supervision plan)
- Reasons for accepting the recommendations
- Implementation of the recommendations (monitoring?)
- Task Manager and Government Officials interviews
- Conclusions and recommendations

Annex 2 (cont.): Government Officials & Task Managers Questionnaire

Project title:
Government Official:
Task Manager:
Date of interview:

Presentation of the interviewee

Main speciality:
Years of professional experience:
Years with this particular project:

Presentation of the project

Present stage in the project cycle:
Date of effectiveness:
Date of latest supervision:

Presentation of the EA

Was the GO/TM already in charge of this project or involved during part or all of the EA?

- **If not, who should be asked to answer the following questions?**
How was the EA conducted (any particular difficulty or time pressure)?
Was participation and public participation part of the EA process?
Did participation and public participation play an important part in changing project design?
- **If yes: in what sense and with what practical results?**
 - How were EA results discussed with the borrower?**
 - How were EA recommendations taken into consideration during project design?**
 - What were the criteria used to decide which EA recommendations would be put in practice?**
 - Was there an assessment of the additional project cost due to implementing EA recommendations? If yes, what was the cost? How did this cost compare with total project cost?**

Compliance & Supervision of the environmental impact of the project

Was any scientific supervision/monitoring conducted? If yes, what are its broad results?

Did EA predictions for environmental impacts materialized? If not, why?

What was the performance of environmental activities (mitigation, monitoring, training, hiring, etc.) in terms of delivery on schedule?

What was World Bank's role in ensuring compliance with agreed environmental measures?

What is the extent of knowledge about implementation results?

In general, are EA recommendations (those selected in the Mitigation Plan) implemented? If not, why?

General assessment of EA influence:

**How would the GO/TM rate the influence of EA on project design (hi, medium, lo).
In any case, please justify the selection.**

INTEGRATION OF EA IN PROJECT ANALYSIS

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Summary

In Africa, as elsewhere, there is a need to integrate EA information into the economic appraisal of projects. The likely negative environmental impacts of projects have to be identified early in the project cycle. The differences in the analysis of projects with environmental impacts are (a) extending the physical input-output schedule in time and space using the EA; (b) shadow pricing not only for policy failures but also for market and institutional failures; (c) comparing costs and benefits using Net Present Worth (NPW) type criteria, a real social discount rate, and a with-without analysis format; and (d) considering various objectives in a participatory decision-making process. During the project cycle the EA helps decide on whether to invest by providing crucial information on both the input-output schedule underlying the project analysis and the participatory process.

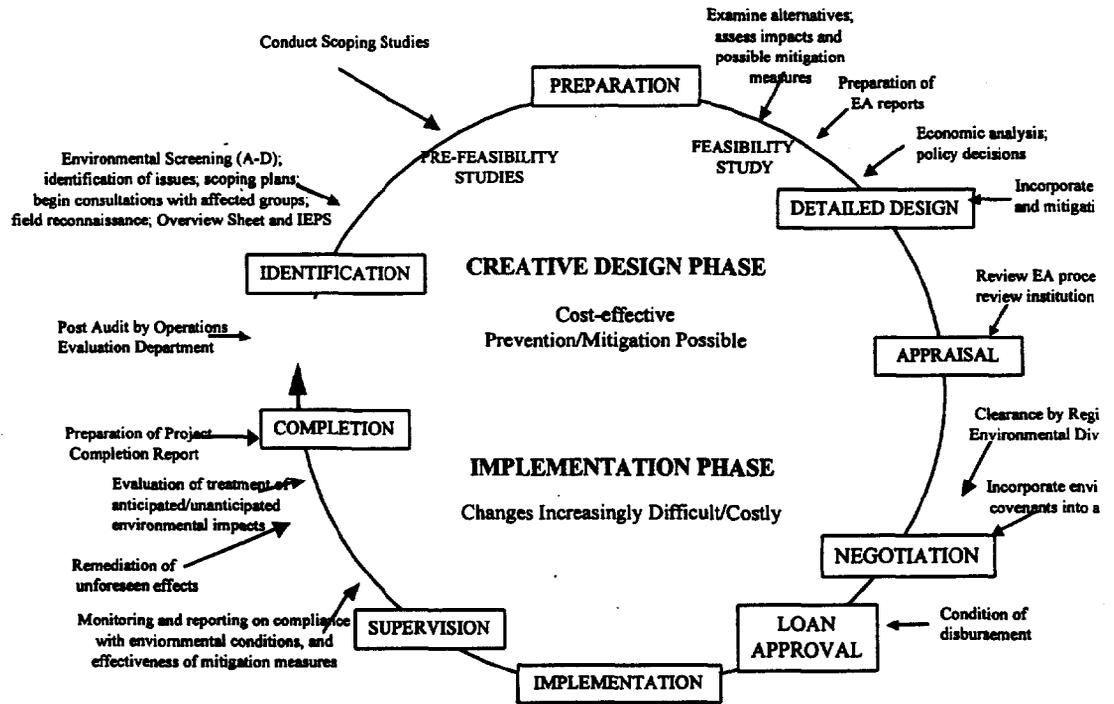
Contents

I. Introduction	109
II. Project Appraisal With and Without Environmental Impacts	110
A. Step 1 - EA and the With - Without Analysis	111
B. Step 2 - Financial and Economic Appraisal	114
C. Step 3. Shadow Pricing for Market Failures	116
D. Step 4 - Discount Rate and Comparison of Costs and Benefits	118
E. Step 5 - Decision Making with Participation	119
III. Conclusions	120
Annex 1: Details on the calculation of the Discount rate (step 4)	121
Literature Cited	122

I. Introduction

The World Bank project cycle has five main steps: identification, preparation, appraisal, implementation with monitoring and evaluation (Baum, 1982). The environmental consideration should be integrated early in the project cycle to focus directly on sustainable projects. Early environmental assessment is important, but other environmental considerations persist all along the circle (see figure 1).

Figure 1: Environmental Assessment and the Project Cycle



Recently, a new project cycle has been proposed to give more flexibility in the appraisal of projects. It consists of a four stage process: listening, piloting, demonstrating, and mainstreaming (Piccioto and Weaving, 1994). The cycle starts with small activities which try innovative ideas proposed by the beneficiaries themselves, building on successes along the new circle of learning. Once the project is shown to be sustainable, a full-scale investment is envisaged.

There are four steps in analyzing an investment (appraising a project): (i) identify, quantify and schedule inputs and outputs; (ii) assign values to them and prepare cash flows; (iii) compare costs and benefits and evaluate uncertainty and risk; and (iv) weigh the economic and financial criteria with other objectives and criteria. These steps are systematically reviewed here, highlighting the main differences between the analysis of projects with and without environmental impacts.

II. Project Appraisal With and Without Environmental Impacts

The differences between the analysis of projects with and without environmental impacts are summarized in table 1. The main differences are:

- extending the physical input-output table in time and space using an environmental assessment;
- extending the economic analysis by shadow pricing inputs and outputs to account not only for policy failures but also for market and institutional failures;
- comparing benefit/cost with NPW criteria (annuity or periodic) using a real long-term discount rate and a long or indefinite time span;
- comparing projects with different objectives through real participation.

Table 1: Appraisal of Projects with and without Environmental Impacts

Steps in Project Analysis	Without EI	With EI
1. I/O	Direct production	Production function plus an Environmental Assessment (expand the physical analysis in space & time)
2. Valuation	Market prices or shadow prices correcting mostly for policy failures	Shadow prices rectifying for Policy but also Market and Institutional failures
3. B/C	Use NPV, IRR, B/C criteria together with risk analysis	Mostly NPW kind of criteria, but also cost effectiveness, with real long term rate of discount and often an unlimited time span, together with uncertainty analysis
4. Decision Making	Mostly efficiency objective	Efficiency plus social and environmental objectives balanced through participation

The with-without analysis principle is particularly useful in assessing the environmental impacts of projects. The worth of a project has to take into consideration the opportunity cost of the resources used. The economic impact of a project is the difference in present value between the with and without project alternative. The with-without the project situation should not be confused with a before-after situation.

Changes would likely take place without the project. For instance, the decrease in soil productivity for agriculture should be considered when appraising forestry projects on an area where marginal agriculture and grazing are taking place and for which yield will decrease over time (see figure 2a). The policy framework, laws and regulations, for instance, can also change over the life span of the project. Environmental assessments, like the economic analysis, are also based on the with-without principle.

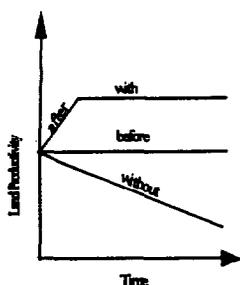


Figure 2a: With-Without Analysis-Land Productivity Example

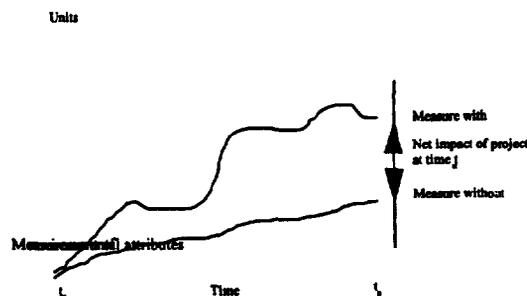


Figure 2b: Measure of impact with and without the project

The consideration of interdependence and separability of project components is important in analyzing projects with environmental impacts. Different components of projects may damage the environment. The EA may recommend some mitigation measures and some alternative project designs. The mitigation alternatives need to be compared economically and a separate appraisal made for each alternative. The separation of physical inputs and outputs by component is thus important in appraising projects with environmental impacts.

A. Step 1 - EA and the With - Without Analysis

Simply put, an EA describes the impacts on the environment with a project and compares them to the impacts on the same environment as the impacts would have occurred without the project. It is often summarized in the "with and without" project formula. The same approach is taken by the economic analysis. To do this systematically, different attempts to categorize the elements comprising the environment, also called attributes, have been made (Box 1 provides one possible categorization). Changes in the environmental attributes provide indicators of changes in the environment. The EA describes and quantifies, then aggregates the effects of project activities on these attributes.

Box 1: A Classification of Environmental Attributes (Jain et al. 1993)

<i>Air</i>		<i>Ecology</i>	
1.	Diffusion	27.	Large animals (wild and domestic)
2.	Particulates	28.	Predatory birds
3.	Sulfur oxides	29.	Small game
4.	Hydrocarbons	30.	Fish, shellfish, and waterfowl
5.	Nitrogen oxide	31.	Field crops
6.	Carbon monoxide	32.	Threatened species
7.	Photochemical oxidants	33.	Natural and vegetation
8.	Hazardous toxicants	34.	Aquatic plants
<i>Water</i>		<i>Sound</i>	
10.	Aquifer safe yield	35.	Physical effects
11.	Flow variations	36.	Psychological effects
12.	Oil	37.	Communication effects
13.	Radioactivity	38.	Performance effects
14.	Suspended solids	39.	Social behavior effects
15.	Thermal pollution		
16.	Acid and alkali	<i>Human Aspects</i>	
17.	Biochemical oxygen demand (BOD)	40.	Lifestyles
18.	Dissolved oxygen (DO)	41.	Psychological needs
19.	Dissolved solids	42.	Physiological systems
20.	Nutrients	43.	Community needs
21.	Toxic compounds	<i>Economics</i>	
22.	Aquatic life	44.	Regional economic stability
23.	Fecal coliforms	45.	Public sector review
		46.	Per capita consumption
<i>Land</i>		<i>Resources</i>	
24.	Soil stability	47.	Fuel resources
25.	Natural hazard	48.	Nonfuel resources
26.	Land-use patterns	49.	Aesthetics

The EA measures attributes with and without the project, or an activity within the project, at a given point in time. Fig. 2b illustrates the measure of an attribute with and without a project over time. The measure of attributes may also change over time without the activity (avoid a "before" analysis as was said for the economic analysis). The impacts have to be measured in terms of the "net" changes in the attribute at a given point in time. The main steps in an EA are thus, (i) describe baseline; (ii) identify the potential impacts (screening, scoping); (iii) measure the impacts; (iv) aggregate impacts on the environment; and (v) propose mitigation measures to minimize the environmental impacts which need to be monitored during the project.

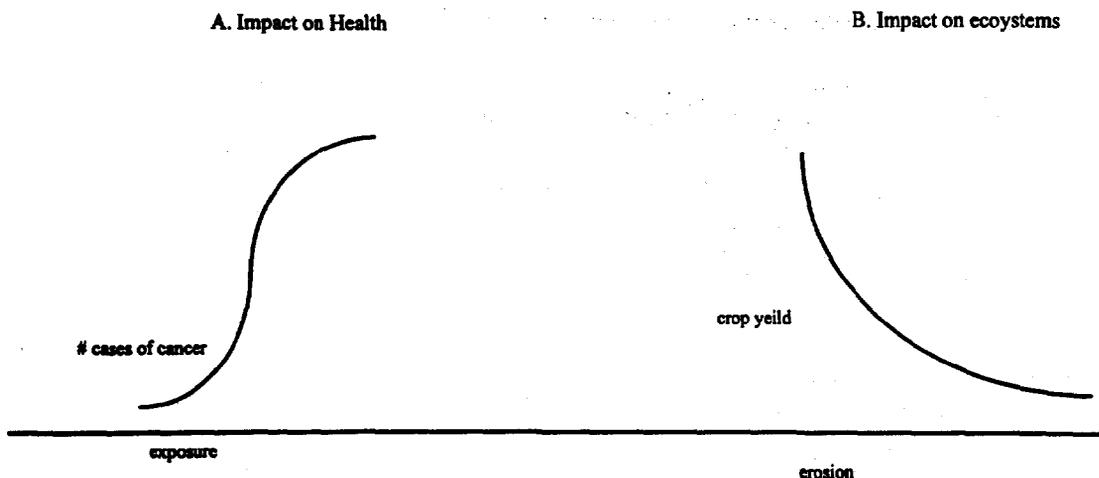
The nature and importance of the impact is determined by the conditions of the environment without the project, i.e., its *baseline*. The stressors may have impacts beyond the boundary and time-frame of the project. Knowing the potential impacts is important to describe properly both in space and time. *Baseline* analysis is more than making a statement on the initial environment of the proposed project. Because projections of future environmental conditions which may affect the project should also be made, it is necessary to adopt a dynamic approach to the study of the environment. In effect, the baseline analysis should permit a comparison of project-induced environmental changes with other expected environmental changes in the no-project situation. This dynamic approach may be more challenging, but will engender useful additional

studies and dialogues. It should take account of (a) past trends in environmental quality over time, (b) community preferences for competing demands regarding resource utilization, and (c) other current or proposed development programs and projects under study. The quality of the analysis of baseline conditions establishes the viability of the appraisal of impacts and, therefore, of the EA itself.

Identifying impacts involves two aspects: the *stressors*, or sources of impacts i.e. what causes the impacts created by a project activity, and the *receptors*, or the attributes (box 1). This identification is done through a *screening* followed by a *scoping* procedure. The screening determines if a project needs a full EA, a partial EA or none. This will depend on (a) scale and type of project, (b) the location and sensitivity of the receptors, and (c) the magnitude of the potential impacts. The receptors are human with health and social impacts, and ecosystems. The sensitivity of the receptors is an important consideration when undertaking an EA. The *scoping* identifies the project's main environmental impacts and the depth of the analysis required for each of the main impacts. The EA's terms of reference are usually established at that point. The nature and importance of the impact is determined by the conditions of the environment without the project. The stressors may have impacts beyond the project's boundary and time-frame.

Environmental assessment consists of *measuring the impacts* in order to compare the expected evolution of the environment with and without the project. So, for each type of potential important impact or environmental concern, the analysis should predict the nature and significance of the expected impacts, or explain why no significant impacts are anticipated. Some environmental effects are quantifiable, while others may have to be described qualitatively. Impacts should be quantified in terms of their physical effects on human health and welfare, and on ecosystems. The impact of a stressor on a receptor, or environmental attributes, is modeled by dose-response functions (fig 4). Such information is often not readily available and is costly to gather. Many times, the dose function is transferred from other studies and modified for the difference in geography, duration of exposure, and population specifics. The dose-response function is more often not continuous as in figure 3. This information will be entered into the physical input-output table on which the cash flows will be based.

Figure 3: Illustration of dose response functions



Aggregate impacts need to be calculated if more than one attribute is affected. Once all the impacts of a project have been identified and quantified or described as well as possible, one has to value the impacts and develop a new cash flow integrating the environmental impacts. However, such an ideal situation in which a dose-response exists and can be valued and entered into a cash flow is often the exception. Attributes may have to be aggregated or compared to each other. Some type of ranking which relies on expert judgment may have to be developed using a different method (e.g., Delphi). The comparison becomes multi-criteria. It is important to consider the EA of one project in a broader context—this is done in a strategic EA. A single project may produce a negligible effect on the environment, but a series of similar projects may produce cumulative effects far from negligible (tyranny of small decisions). Different techniques are used to report EA aggregate results, such as, check list, matrix, network, and computer systems. There is no one method which “correctly” weighs and ranks the wide range of issues which need to be addressed in an EA. The final outcomes usually are strongly influenced by political and community consultative process. Presentation of the findings should provide information to decision-makers without making decisions in advance. Visual methods of presentation are often helpful for presenting alternatives.

Mitigation measures are proposed to avoid or diminish environmental and social impacts. New activity or production process can be recommended resulting in a new input-output schedule and cash flows. The alternatives can then be compared in terms of NPW or, if benefits are difficult to estimate, in terms of cost-effectiveness or using some visual presentation. If changing the project or introducing different activities or technologies is not possible, the analyst will see if the component of a project or the project itself should not be eliminated altogether. If not, compensation can be sought—in the form of materials reconstruction, prevention, shadow project to follow a no-net-loss policy—or financial, such as compensation for loss of property or some property right. These compensations will have to be entered in the “with” cash flows of the project.

B. Step 2 - Financial and Economic Appraisal

Once in possession of the technical and EA studies, the financial appraisal analyzes an investment from an individual point of view, while economic analysis takes a societal point of view (see table 2). Financial and economic values are similar if there is no policy failures and no environmental or social impacts of using resources in producing goods and services. If policies such as minimum prices or price ceilings, quotas or subsidies for production, imports or exports, monopoly or monopsony, oligopoly or oligopsony, speculation on market prices among others, are not rectified by macro economic or sector adjustments, prices have to be approximated for what they really would be if the right policies were in place. Shadow prices may be higher or lower than market prices. Subsidies for natural resources lower prices and so increase demand. Most of the time, this would create negative environmental impacts. Shadow pricing for policy failures may eliminate many investments that could have negative effects on the environment.

Integration of EA into Project Analysis

Table 2: Financial and Economic Analysis

	Financial Analysis	Economic Analysis
Point of View	Net returns to equity capital or to private group or individual	Net returns to society
Purposes	Indication of incentive to adopt or implement	Determine if government investment is justified on economic efficiency basis
Prices	Market or administered (may assume that markets are perfect or that administered prices have compensated for imperfections)	May require "shadow prices" (e.g., monopoly in markets, external effects, unemployed or underemployed factors, overvalued currency)
Taxes	Cost of production	Part of total societal benefits
Subsidies	Source of revenue	Part of total societal cost
Loans	Increase capital resources available	A transfer payment; transfers a claim to resource flow
Interest or loan re-payment	A financial cost; decreases capital resources available	A transfer payment
Discount rate	Marginal cost of money; market borrowing rate	Opportunity cost of capital; social time preference rate
Income distribution	Can be measured re: net returns to individual factors of production such as land, labor, and capital	Is not considered in economic efficiency analysis. Can be done as separate analysis or as weighted efficiency analysis

Shadow pricing investments is not new and will not be covered in details here. The economic value represent consumers' willingness to pay (WTP). In theory, a perfectly competitive market provides the right values of goods and services in that market, given existing policies affecting WTP. In the case of input values or costs, the term opportunity cost is often used – it is the value forgone by not being able to use the input in its next best alternative and it is measured in terms of consumers' WTP for the goods and/or services forgone. So, for both inputs and outputs, WTP is the basis for valuation in economic analysis.

In practical terms, the actual market prices, sometimes local, often international, are taken as a good approximation of economic values. The need to calculate shadow prices at the project level will depend on how much economic policies are distorted and the importance of the value of an input or output in the project – i.e., its impact on profitability. Often, shadow prices may have been precalculated at the national or sectoral level for important inputs or outputs. The importance of the project in the overall economy – i.e., its impact on supply – is also a factor that will indicate the need to shadow price a particular investment proposed to foster economic development.

Economic cash flows ignore transfer payments such as taxes, subsidies, interest paid within the society from which point of view the analysis is made. The reasoning behind it is that transfers do not use resources per se but are just transfer payments from one group or individual to another within a society. In environmental economics, many costs and benefits are evaluated at the global level. In this case, even interest on a loan paid outside a country is considered transfers. The correction of price for transfer payments may have important impacts on resources used and the environment. A subsidy on land clearing speeds up deforestation, but on kerosene it can slow down fuelwood harvesting.

C. Step 3. Shadow Pricing for Market Failures

Since most environmental goods and services are characterized by externalities, further shadow pricing is sometimes necessary. If markets are perfect and externalities internalized through well working institutional arrangements, prices of environmental goods and services would be found in the economy which reflect their real value. However, prices should be corrected often for policy failures as reviewed in the preceding section. When no market prices exist or prices need to be corrected for externalities, one can use direct proxies for valuing environmental impacts which are usually cost based, or indirect proxies for example by revealing embedded environmental values from property assets, such as land prices. When no proxy is available, one is forced to survey WTP directly such as in the contingent valuation method. Valuation techniques can be organized along the lines of figure 4. Most valuation techniques are enumerated in box 2, however, any other groupings can be imagined (OECD-EDI-ODI, 1995 and Dixon et al. 1994).

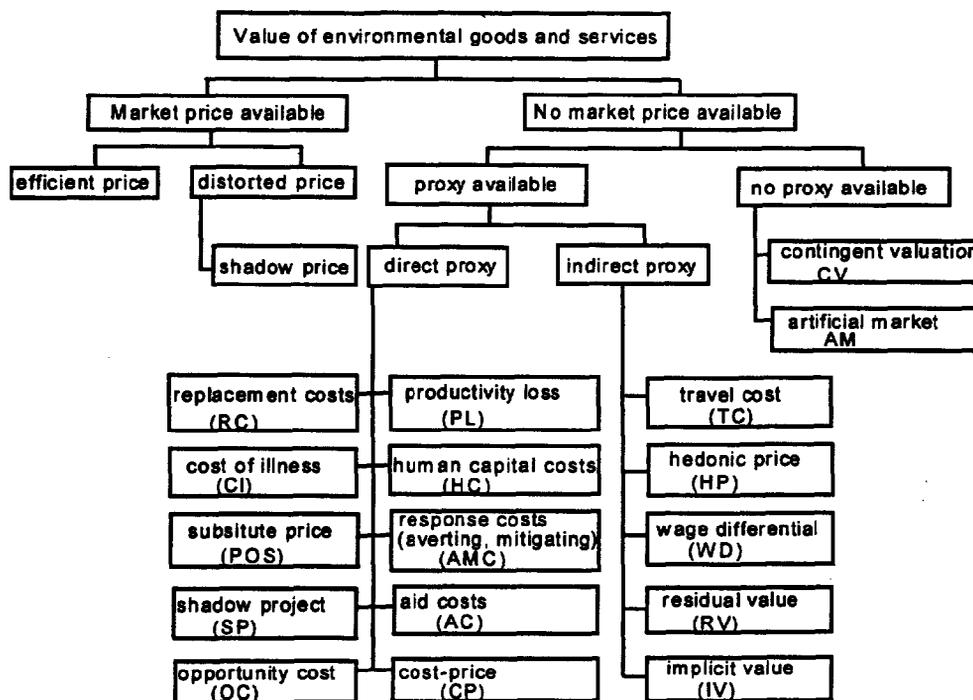


Figure 4: A Possible Taxonomy of Valuation Techniques

Box 2: Valuation Techniques

Direct proxies to estimate environmental impacts do not pretend to reflect WTP but to estimate a lower, or sometimes upper, bound of that value. Direct proxies involve costs or price information which approximate values of environmental externalities. The advantages of using costs or existing prices as proxies for WTP is that they are easily observable. Cost-based approaches should be used with caution because these costs do not necessarily equal the benefits of environmental improvements or the damages from degradation. The actual costs incurred as a result of environmental degradation can estimate the minimum benefits of avoiding environmental impacts. So, the loss of agriculture productivity (productivity loss), the cost of medical expenditure (cost of illness), the cost of an ill person or premature death (human capital cost), the cost of averting or mitigating negative environmental impacts (response cost), the cost of replacing environmental goods or services (replacement costs), the cost of an aid project such as grants, debt-for-nature swaps, subsidized loans or donations, (aid costs), the reconstruction of an environmental good (shadow project), the cost per unit of output (cost-price) or the price of a close substitute are all ways of approximating the value of environmental goods and services using directly observable costs or prices. All these costs could be called opportunity costs. Note that some authors define an "opportunity cost approach" in the valuation literature specifically for the value of lost opportunities due to environmental protection, i.e., the cost of environmental protection (Dixon et al. 1994). Different costs of the same impact can value different functions of an environmental good or service. The cost of illness, human capital and productivity loss are often complementary in that each reflects a specific aspects of a healthy life. If all three approaches are used to value the different facets of human health impact, one has to be cautious not to double count these different values.

Indirect proxies cannot be found readily for estimating WTP but have to be derived from observed markets, or behavior in markets, related to the environmental commodity. By examining the prices people pay, or the benefits they apparently derive from environmental services or goods, in these closely-related markets, peoples' environmental preferences can be uncovered. The value of these environmental impacts are embedded in the value of an asset (hedonic price) or a job (wage differential) or the time and cost incurred in visiting and enjoying a national park (travel-cost method). Residual and implicit values are inferred from final product market prices or environmental values that make a project break-even. While the indirect proxy methods involve more calculation they will not necessarily provide better estimate of willingness to pay for environmental goods and services than the direct proxies. However, they have the advantages to rely on observed behavior and existing market prices directly related to the environmental attribute being valued.

The Contingent Valuation Method (CVM) consists of asking people directly, via a questionnaire or experimental techniques, what they would be willing to pay for a benefit or what they would be willing to receive as compensation for a deterioration of their environment. The questionnaire simulates an hypothetical (contingent) market of a particular environmental good in which individuals (demand) are asked to state their WTP for a change (improvement or deterioration) in the provision (supply) of the good in question. The questionnaire has to provide the institutional context in which the good would be provided and on the payment vehicle. CVM may apply equally to changes in public goods such as air quality, landscape or the existence values of wildlife but also to goods and services sold to individuals, like water supply and sanitation. It may apply to both use and non-use (existence) values which was not the case for the "proxy" techniques. The accuracy and reliability of consumer preferences obtained using the CVM has been criticized on grounds of biases inherent in the technique: free rider, starting point, information, vehicle and hypothetical bias. The disparity between WTP and WTA can also be important.

While *transfers of values* are usually made with non-market values, it can also be useful to transfer existing prices to environmental goods or services where such a market does not exist. Likewise, costs and benefits can be transferred. In the literature, some define Benefit Transfer (BT) to mean specifically the transfer of non-market values such as air and water quality, and recreation. The location where the data are generated (study site) could be from a totally different place or country from the area to where the benefits are transferred (policy site). Sometimes only the methodology is transferred, in other cases the data and values are transferred. This method is useful when time and budget are limited, the study site and issues are similar, and the original valuation procedures were sound.

The valuation methods mentioned here generate prices that are not corrected for institutional failures or intergenerational externalities. The user costs associated with them and with non-renewable resources will often be added to the price found with these techniques (Harou et al. 1994). It includes the present value of the future capital required to produce substitute goods and services when the ones enjoyed now will be exhausted. This assumes perfect substitutability between the two natural resources or environmental goods.

D. Step 4 - Discount Rate and Comparison of Costs and Benefits

To compare the benefits and costs of an investment over time, especially long-term environmental investments, the discount rate is crucial. The greatest difference between financial and economic analysis usually occurs because of the discount rate. The appropriate discount rate to use for an economic analysis, especially where the project has environmental impacts, is a controversial topic.

Discount rate need not be different for a project with environmental impacts. The crux of the analysis consists in quantifying the appropriate input-output schedule that should be provided by an environmental assessment and to value properly these inputs and outputs over the long term. The value of environmental goods as they become scarcer should appreciate accordingly. The relative price increase of environmental goods and services over time will have to be properly reflected in the cash flow table.

The discount rate used for the economic analysis of projects with environmental impacts is the same as without these impacts, but both are different from the rate used in the financial analysis in which only the opportunity cost of capital is considered. The calculations of the discount rate are detailed in annex 1.

The rate of social time preference still needs to be determined and cannot be derived from an aggregation of individuals' market-revealed time preference since private and collective time preference are two different things. People may be ready to sacrifice for future generations if others would be prepared to do the same. Given the imperfections of our markets and policies, with respect to the environment, the derived rates of capital productivity or opportunity cost of capital cannot be used as a measure of r . One is then left with the political process to establish the social time preference. It is assumed that the policy maker's goal is to transfer to the next generation a resource base equivalent to that of the present generation's. One way to do so, is to set r as an unknown to the equation (1), i.e., to find the IRR of the investment. Repeated decisions for some kind of projects with specific environmental impacts would imply a range of social discount rates which eventually could serve as a guide for future decisions concerning similar projects.

Note that all the values in the cash flow tables, financial as well as economic, should be in real terms. It is difficult to assess inflation over a long time span characterizing environmental impacts. So only the real (not nominal) r and ρ should be considered. The rate of social time preference (SDR) should be risk free. Risk could be considered in simulated (Monte-Carlo) cash flows if the probability information exists. Finally, the before-tax opportunity cost of capital is to be used because taxes are just transfer payments excluded from the economic analysis of projects.

The difference between a real and nominal discount rate is important for long-term environmental impacts to be valued and discounted (Harou, 1983). It is recommended that the real rate be used. The appropriate relationship between nominal and real rates of discount is a multiplicative one:

$$(1+n) = (1+f)(1+r)$$

where n = nominal (inflated discount rate)
r = real discount rate
f = average annual percentage rate of inflation

If a nominal rate of discount is used without valuing environmental benefits including an inflation factor, it will bias the analysis against projects with positive environmental impacts. Forecasting inflation is often impossible so that working with real values and discount rates is highly recommended on practical ground for appraising projects with long-term environmental impacts. Only real price increases in environmental goods and services have to be estimated.

The comparison of costs and benefits is often made over a long period of time if long-term environmental impacts of a project are important. The cash flow table should start in year zero, so that initial outlays of funds, often important in the first year of environmental projects, are appropriately reckoned in the NPW equation. Since the approach is to estimate benefits and costs with and without the projects having the impacts (mutually exclusive project alternatives), a NPW type of criteria is used with an infinite, periodic, annual, or simply long enough to be considered infinite when discounted. For instance, if a limited time span is used to compare mitigation alternatives, an equal time frame has to be chosen for both the with and without situation if the comparison has to be meaningful.

E. Step 5 - Decision-making with Participation

Once the analysts have done their project appraisal duly incorporating environmental impacts, the decision-makers may be confronted with apples and oranges. Not all the impacts may have been incorporated into the cash flows of the project. The impacts left out of the cash flow table could be presented for instance in the form of a biodiversity index or a number of people displaced. The EA should involve people from the outset. Public participation plays a key role in assessing environmental impacts, comparing alternatives, designing appropriate mitigation measures, and building local ownership and participation into the development. If real consultation has occurred, most social externalities are incorporated into the project analysis at that point. However, participation is also important in the final step of the decision process when comparing final investment alternatives given budget constraints when different objectives and criteria are considered simultaneously. The more participative the project appraisal had been, the faster and easier will be the last step in the appraisal of projects with environmental impacts.

III. Conclusions

Environmental impacts have to be considered early on in the project cycle. If bio-physical impacts exist, they have to be described or quantified through an EA comparing environmental impacts with and without the project and by project components. Environmental impacts have to be identified on a wider space and time scale than projects without impacts. Cash flow tables with and without the project have to be estimated in real terms and discounted with a rate reflecting both the opportunity cost of capital and the rate of social time preference. Valuation for correcting policy failures are done through classical shadow pricing mimicking perfect policies and market. Prices still have to be corrected for externalities and institutional failures. Appropriate environmental shadow prices should correct not only for policy but also, to the extent possible, for failures, externalities, and institutional failures. Underlying the entire process of appraisal of projects with environmental impacts is the bio-physical input-output schedule that should be produced by a relevant EA.

Annex 1: Details on the calculation of the discount rate (step 4)

The approach recommended here for its practicability is to calculate a discount rate embodying both the opportunity cost of capital and the social time preference, i.e., the weights society places on consumption at different points in the future. The economic net present worth (NPW) of a project is

$$NPW = \sum_{t=0}^{\infty} \frac{B_t - C_t}{(1+r)^t} - \alpha K_0 \quad (1)$$

where B_t and C_t are the social benefits and costs in year t
 r is the rate of social time preference (also called social discount rate,
 K_0 is the capital invested in terms of year zero
 α is the opportunity cost per dollar of public investment usually in terms of private investment forgone

The term α in the above formula is sometimes called the shadow price of investment (UNIDO, 1970). It replaces the nominal price of funds of one rupee per rupee or dollar per dollar. If $\alpha=2$, the investment must show a present value of 2 RP. per rupee invested instead of a RP. 1 per rupee invested. It depends on the percentage of funds diverted from the private sector, if any, and on the opportunity cost of capital from the private sector. In its simplest form α could be derived as

$$\alpha = \frac{\rho}{r} \quad (2)$$

if we assume that reinvestments in perpetuity in the private sector are included in the private sector opportunity cost of capital ρ . To the extent that capital markets are not perfect and that externalities exist, ρ and r are different. The social rate of time preference is usually lower than the opportunity cost of private capital and so $\alpha > 1$.

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ENVIRONMENTAL MANAGEMENT

Approaches and Tools for a Rapidly Urbanizing World

Josef Leitmann

In ten years over half of the world's population will be living in cities. This paper summarizes the environmental impacts of urban development as well as the environmental challenges caused by rapid urbanization, especially in developing countries.

Summary

Two very different approaches can be pursued to integrate environmental concerns into the development and management of cities. Environmental impact assessment is commonly employed to identify and mitigate the environmental effects of urban development investments. A more pro-active and strategic process of environmental planning and management offers an alternative approach which can address the multiple and interrelated environmental consequences of rapid urbanization. Information is briefly provided on both approaches, including institutional and financing requirements.

Regardless of which technique is employed, tools for data collection and analysis are essential. The paper provides a description, examples, and references for the following techniques of urban environmental analysis:

- environmental data questionnaire
- urban indicators
- risk assessment
- economic valuation
- household and community techniques
- geographic information systems
- rapid urban environmental assessment

These tools are then compared according to their applications, limitations, and monetary as well as temporal resource requirements.

Contents

INTRODUCTION	125
The Environmental Impact of Urbanization	125
Environmental impacts of urban development investments	125
Environmental consequences of urbanization	126
APPROACHES TO URBAN ENVIRONMENTAL MANAGEMENT	126
Environmental Impact Assessment	126
Impact assessment process	126
Involuntary Resettlement	128
Urban Environmental Planning and Management	128
Institutional and Financial Requirements	130
TOOLS FOR ANALYZING THE URBAN ENVIRONMENT	130
The Tools	132
Data questionnaire	132
Urban indicators	132
Risk assessment	132
Economic valuation	134
Household and Community Techniques	134
Geographic information systems	134
Rapid urban environmental assessment	134
Conclusion	136
Resources	137

Illustrations

Fig. 1: Flow diagram of environmental impact assessment process

Fig. 2: Environmental planning and management diagram

Fig. 3: Outline of questionnaire and sample page

Fig. 4: Environmental indicators for Tianjin, China

Table 1: Comparison of tools

INTRODUCTION

Over 50 percent of the world's population will be living in cities by the year 2005. There will be 3.35 billion urban residents out of a global population of 6.69 billion. In the developing world, there will be more urban than rural residents by the year 2015 when an estimated 3.13 billion inhabitants of developing countries will live in cities. In thirty years 61 percent of the world's population (and 57 percent in developing countries) will reside in urban areas (UN, 1993).

The environmental impact of urbanization

Rapid urbanization brings two sets of environmental consequences. Specific investments for urban development can have environmental impacts that typically receive a good deal of attention from environmental professionals. More important, though, are the broad range of environmental issues stemming from the resource consumption and waste disposal patterns of growing urban populations. Both sets of consequences are briefly described below.

Environmental impacts of urban development investments

Developers of urban projects (e.g., water supply, sewerage and other sanitation, drainage, solid waste management, electrification, land development) must be alert to a number of adverse environmental impacts that generally occur when the investments are not properly planned, sited, designed, constructed, operated, or maintained.

Site selection for *land development* usually involves a number of potential environmental effects, e.g., soil and slope stability, risk of flooding in low-lying sites, damage to sensitive ecosystems, such as wetlands, and conflict with culturally-valued land uses.

Water supply can result in groundwater depletion if the aquifer is tapped, surface water abstraction can affect aquatic and bird life, dam and reservoir construction generally have a range of potential impacts, and increased consumption will also increase the output of wastewater, which can have negative health effects if unchecked.

Some of the potential negative impacts of *sanitation systems* include: interference with other utilities, impacts from sludge disposal, subsurface leaching to groundwater, degradation of water quality from overflows or improperly treated sewage, and health and safety hazards associated with sewers (trench cave-in during construction, toxic gas build-up, exposure to pathogens in sewage and sludge).

Many of the potentially adverse effects of *solid waste management* concern dump or sanitary landfill siting and management— namely, aquifer contamination, improper disposal of hazardous wastes, air pollution from burning wastes, landfill gas migration, subsurface leaching, and landscape degradation.

Drainage construction can result in displacement and involuntary resettlement of households, and, if drains are not maintained and are contaminated with solid and liquid wastes, they can flood and spread pathogens.

EA in Africa — A World Bank Commitment

Electrification at the community and household level poses health and safety risks from improper in-house wiring and collapse of overhead wiring during heavy weather; there may also be upstream impacts with significant increases in demand, or depending on how the power is generated.

Environmental consequences of urbanization

Rapidly growing cities, particularly in the developing world, are using more environmental resources (air, water and land), becoming exposed to greater risks, and generating more wastes. The critical problems facing these cities are the health impacts of urban pollution linked to inadequate water, sanitation, drainage, and solid waste services, poor urban and industrial waste management, and air pollution. Important underlying or related issues include inappropriate land uses, precarious housing, deficient public transportation, and road congestion and accidents. These are collectively dubbed the "brown agenda" and are related to what may be considered "green" and "social" issues of urban areas— depletion of water and forest resources, degradation of environmentally fragile lands, occupation of areas prone to flooding or landslides, overcrowding, degradation or loss of historical and cultural property, noise pollution, and other problems. Similarly, the brown emissions of cities from energy use for cooking, heating, industry, and transport contribute significantly to global problems, such as climate change and acid rain (Bartone et al, 1994).

APPROACHES TO URBAN ENVIRONMENTAL MANAGEMENT

Environmental impact assessment

Environmental impact assessment identifies the potential environmental consequences of a proposed project or investment program in order to incorporate approaches with positive environmental effects as well as mitigating measures for negative effects early in the planning process. This section briefly identifies the environmental consequences of urban infrastructure investments, describes a generic environmental impact assessment process, and outlines guidelines for managing the specific case of involuntary resettlement.

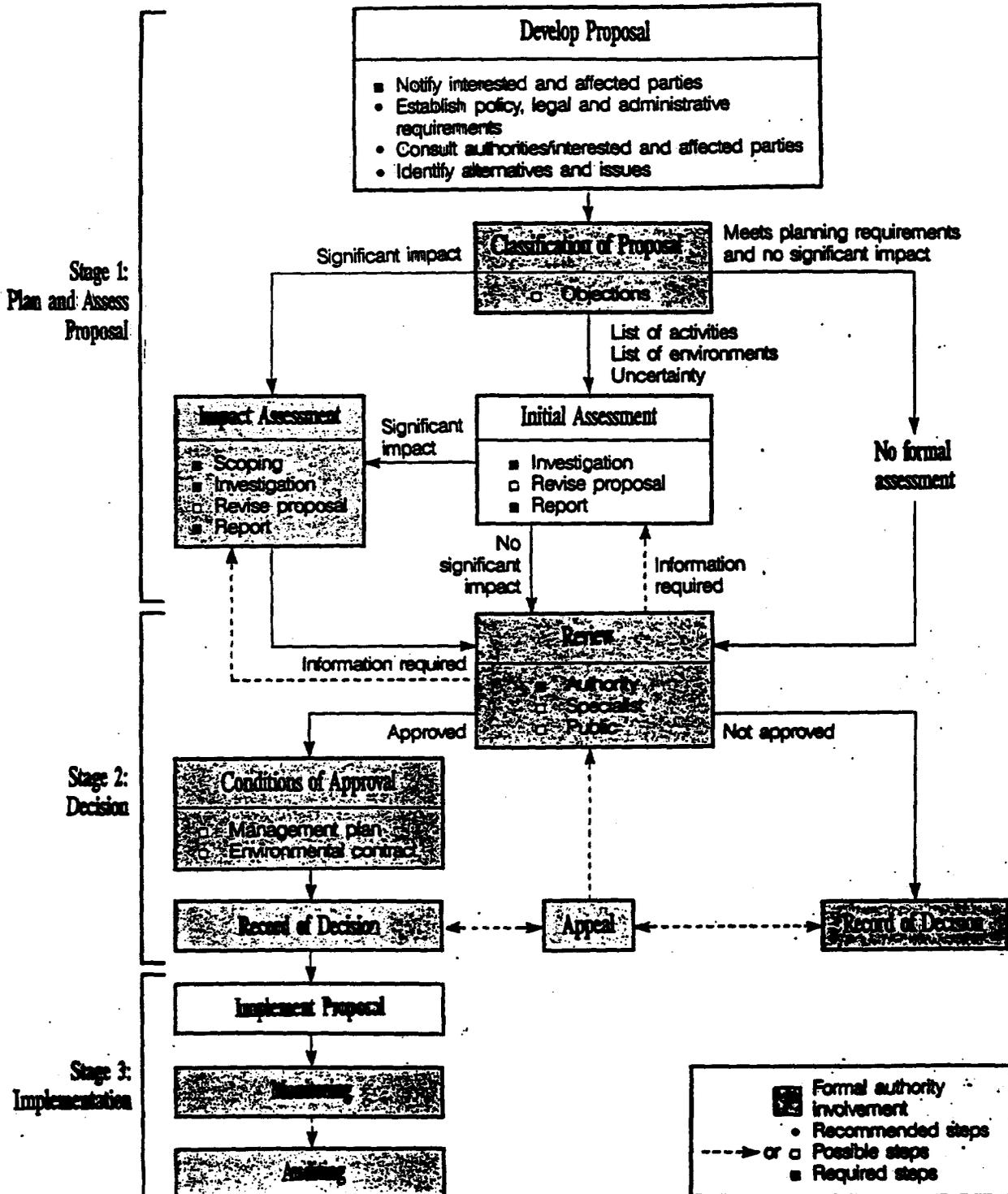
Impact assessment process

Many guides have been written on environmental impact assessment. The process should identify potential environmental impacts of an investment early in the design stage *as well as* ways of improving the intervention by preventing, minimizing, mitigating, or compensating for adverse environmental effects. According to World Bank guidelines, a project-specific environmental assessment should cover: (a) baseline environmental conditions; (b) potential environmental impacts—both positive and negative—in a project's area of influence; (c) a systematic environmental comparison of alternative investments, sites, technologies, and designs; (d) preventive, mitigating and compensatory measures, generally in the form of an environmental mitigation or management plan; (e) recommended environmental management and training; and (f) a proposal for environmental monitoring (World Bank, 1991b). Preparation of the assessment should involve representatives of potentially affected groups, and draft findings should be disseminated for public review and comment.

Alternatives to the project-specific assessment include: a *regional environmental assessment* where a number of similar and significant development activities with potentially cumulative impacts are planned for a localized area; *sectoral assessments*, where the environmental impact of investments, policies, and numerous smaller

investments in one sector can be reviewed together; and application of *environmental guidance criteria* to projects (e.g., pollution standards, construction design criteria, siting guidelines, monitoring and inspection procedures). Environmental assessment, in whatever form, should help project designers and implementers to address environmental issues in a timely fashion, and help avoid costs and delays in implementation caused by unanticipated environmental problems (World Bank, 1991b).

Fig. 1 Environmental Impact Assessment Process



Involuntary Resettlement

Urban development activities can lead to the involuntary resettlement of individuals, households, and businesses. This problem should be addressed by seeking ways to minimize involuntary resettlement. When population displacement is unavoidable, a detailed resettlement plan, timetable, and budget are required. The plan should develop a strategy and package to provide displaced people with the means to improve or at least restore their former living standards, earning capacity, and production levels.

The process for developing the plan should involve both resettlers and hosts in resettlement activities. It usually requires developing valuation and compensation principles for land and other assets affected by the project. Several guidelines have been developed to deal with urban resettlement (World Bank, 1990; Davidson et al., 1993).

Urban environmental planning and management

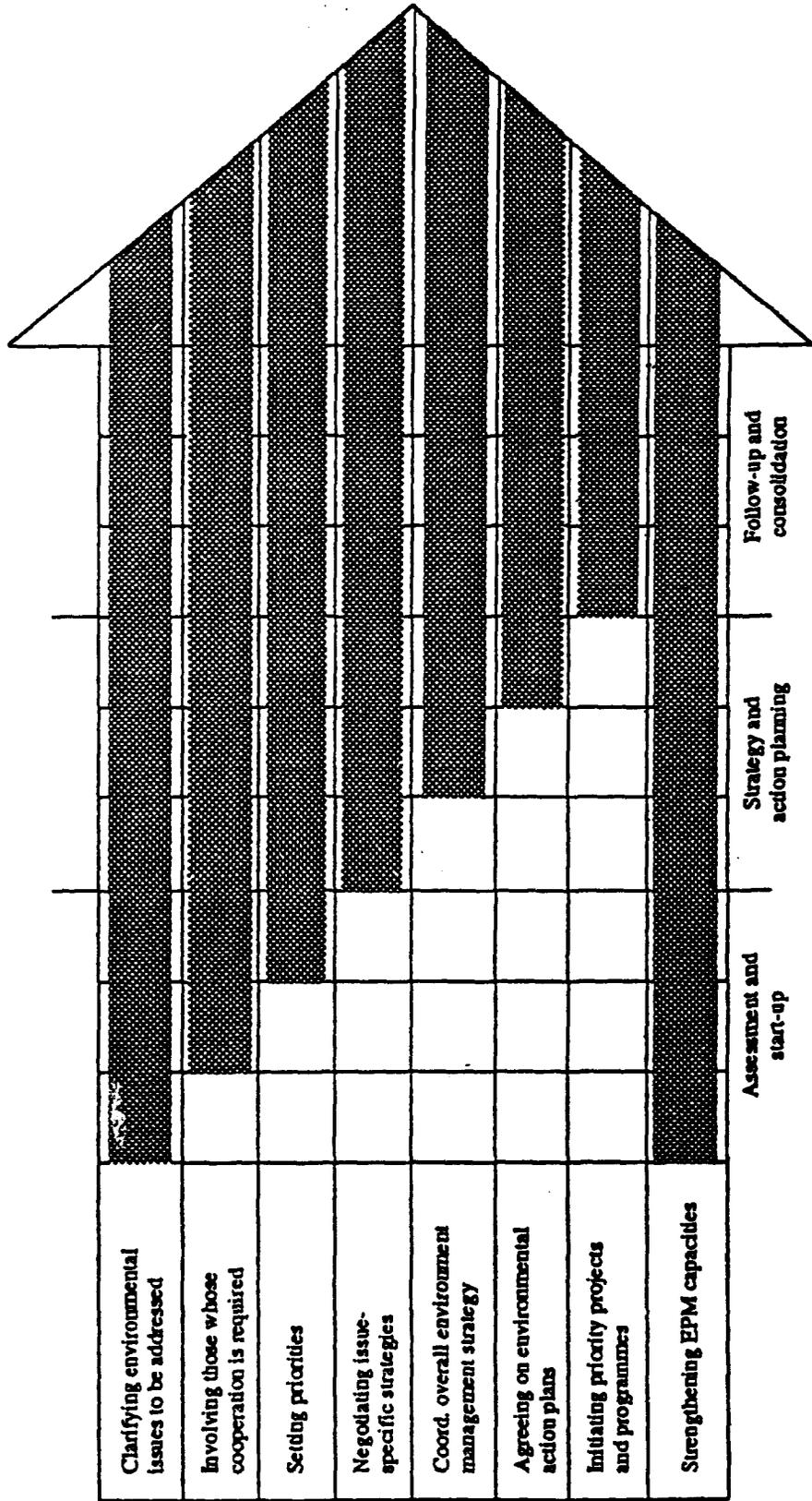
The option of impact assessment is *ad hoc* in that urban environmental issues are addressed as particular projects and programs arise. The second option of environmental planning and management can be used to select or rank policies, programs and projects according to strategic environmental priorities. With differing urban problems and many tools for dealing with them, each city will need a process for determining the most appropriate mix of actions and investments that respond to its environmental priorities. When confronting environmental problems, cities exhibit different degrees of awareness, political commitment, and capacity to mobilize resources. A strategic approach to urban environmental planning and management is recommended based on enabling participation and building commitment. It has been tested in industrialized the cities of developing countries and is a viable approach for cities working toward setting up local versions of Agenda 21 or pushing the national environmental action planning process down to the local level.

The strategic approach can involve several activities, each of which should emphasize strengthening local capacity:

- *informed consultation* in which rapid assessments are conducted, environmental issues are clarified, key stakeholders are involved, political commitment is achieved, and priorities are set through an informed consultative process;
- formulating an integrated *urban environmental management strategy* that embodies long-term goals and phased targets for meeting the goals, and agreement on *issue-oriented strategies* that cut across the concerns of various stakeholders and *actor-specific action plans* that cut across various issues for achieving the targets, including the identification of least-cost project options, policy reforms, and institutional improvements;
- *follow-up and consolidation* in which agreed programs and projects are initiated, policy reforms and institutional arrangements are solidified, the overall process is made routine, and monitoring and evaluation procedures are put in place.

These elements of a strategic approach, and examples of their application, are more fully described in *Toward Environmental Strategies for Cities* (Bartone et al., 1994). Issues related to the development of urban environmental strategies and action plans, such as country consultations, institutional requirements, evaluation, dissemination, and training have been addressed in a *Manual for Urban Environmental Management* (GTZ, 1994).

Figure 2: Environmental Planning and Management Diagram



Institutional and financial requirements

The *institutional responsibility* for determining whether a project or the entire investment program requires an assessment, or for preparing an urban environmental strategy can vary according to local capacity and institutional arrangements. In large cities, a centralized and coordinated function may exist for environmental policy and analysis. More typically, environmental decision-making is fragmented between municipal departments, councilors, committees, community groups, and non-governmental organizations. To remedy this situation, final decision-making about the need for impact assessment or the responsibility for developing an environmental management strategy should rest with one coordinating mechanism. This might be an environmental office, an environmental management committee, or a municipal officer with an environmental function (primarily for smaller cities and towns). Regardless of the institutional arrangement, there should be adequate provision for involving the full range of stakeholders (representatives of affected and concerned communities, experts, decision-makers) in the assessment or planning process.

Financing of the impact assessment is usually built into the cost of project preparation. Recent World Bank experience indicates that the assessment process amounts to 5-10 percent of project preparation costs (or usually less than 1 percent of the total investment). Funding the strategic management process will depend on several factors: local budgetary flexibility; existing institutional capacity; relative political priority attached to environmental issues. Costs can range from less than US\$20,000 for a rapid urban environmental assessment to over US\$1 million for a complete strategy with detailed action plans. Local governments with a high level of in-house expertise and political commitment can undertake either exercise with their own resources. Municipalities with budgetary flexibility and political commitment can contract consultants, community expertise, and NGOs to assist them. If there is only political commitment, but little in the way of budget or expertise, then external resources must be mobilized.

TOOLS FOR ANALYZING THE URBAN ENVIRONMENT

Baseline data and analysis are essential in order to understand and prioritize urban environmental problems which can be addressed through infrastructure investments. This section briefly reviews six data collection and analytical tools (urban environmental data questionnaire, collecting and ranking indicators, health risk assessment, economic valuation, techniques for community and household assessment), geographic information systems, and a process (rapid urban environmental assessment) that combines analysis and public consultation. Then, their utility, limitations and costs are briefly assessed.

Figure 3: Outline of Questionnaire

BOX: Urban Environmental Indicators-Outline of Questionnaire

GENERAL INFORMATION

- I **SOCIO-ECONOMIC BACKGROUND**
(Urban population, demographics, income and poverty, employment, municipal services, municipal expenditures)
- II **HOUSING CONDITIONS**
(Ownership, facilities, size, marginal units)
- III **HEALTH CONDITIONS**
(Basic statistics, mortality rates)
- IV **NATURAL ENVIRONMENT**
(Location, ecosystem type, meteorological data, dispersion conditions, topography, environmental hazards)
- V **LAND USE**
(Urban land use, newly incorporated urban land, land ownership, land registration, land use regulation, land market)
- VI **URBAN TRANSPORT**
(Basic statistics, vehicle stocks, motorized travel by mode, emissions, injuries from accidents, passenger car restrictions)
- VII **ENERGY USE**
(Annual gross energy consumption, emissions from combustion, interconnected electricity grid, in-city electricity utility, urban electricity self-generation, household energy consumption, other indicators, energy pricing)
- VIII **AIR POLLUTION**
(Emissions intensity, emissions control, policy implementation, ambient concentrations, monitoring, environmental health)
- IX **NOISE POLLUTION**
(Noise levels, noise pollution control)
- X **WATER AND SANITATION**
(Water resources, groundwater abstraction problems, future resources, water supply, water delivery, household sanitation installations, drainage network coverage, sewage flow rates, sewage treatment plants, sewage disposal, industrial effluents, water pollution policy instruments, water quality monitoring, monitoring)
- XI **SOLID AND HAZARDOUS WASTES**
(Total solid wastes generated, municipal solid wastes, disposal of municipal solid wastes, municipal expenditures for solid waste management, dumpsites, hazardous waste facilities, hazardous waste policies being implemented)

ANNEXES

The Tools

DATA QUESTIONNAIRE.

An urban environmental data questionnaire has been designed for use in developing country cities by the UNCHS/World Bank/UNDP Urban Management Program (Leitmann, 1994a). The questionnaire is extensive (50 pages) and covers a comprehensive range of topics. The questionnaire is available on diskette with a downloadable database and help screens. Data can be entered at the level of the city, the metropolitan area, and/or the urban agglomeration. It is intended to support preparation of an urban environmental profile and to inform a consultative process as part of a rapid urban environmental assessment (see above).

Urban indicators

There have been a number of efforts to development indicators of urban environmental quality. These indicators allow for a static assessment of conditions, monitoring of change over time, and ranking within or between cities. The World Bank and UNCHS have developed a set of urban indicators to improve their operations and help countries prepare for the 1996 Habitat II conference (UNCHS and World Bank, 1994). These indicators cover six sub-sectors: (a) urban poverty, productivity and employment; (b) social; (c) infrastructure; (d) transport; (e) local government; and (f) environmental management. The environmental indicators are linked to policy goals (improved access to basic infrastructure and services, pollution reduction or prevention, sustainable environmental practices, and minimization of vulnerability to hazards). China has used its own set of urban environmental indicators to monitor progress in individual cities over time, make comparisons between cities, prepare comparative rankings, and financially reward performance (Leitmann, 1994b). The World Resources Institute collects environmental data for the 75 largest US metropolitan areas and conducts an unweighted "Green Metro" ranking based on nine indicators (moderate air pollution days, unhealthy air pollution days, drinking water quality, toxic releases and transfers, number of toxic waste sites, solid waste collected per capita, heating and cooling degree days, vehicle miles traveled per capita, mass transit passenger miles traveled per capita). In addition, indicators are collected on population density, percentage of urban area devoted to parkland, percentage of waste recycled, water use per capita, percentage of groundwater dependence, and miles of bike paths (World Resources Institute, 1994).

Risk assessment.

Urban environmental problems can be prioritized according to the degree of risk they pose to human health. Health risk assessment consists of four steps: (a) hazard identification; (b) exposure assessment; (c) dose-response assessment; and (d) risk characterization (National Research Council, 1983). Hazard identification is a qualitative determination of whether human exposure to an agent might result in adverse health effects. Exposure assessment involves a quantitative or qualitative estimation of the level and duration of a population's exposure to a toxic agent. The dose-response assessment uses a mathematical model to estimate the probability of occurrence of a health effect based on human exposure to a hazardous substance. Characterizing risk means estimating the incidence of an adverse effect on a population (Brantly et al., 1993). This technique has been used elsewhere in several developing country cities to rank environmental problems according to their effects on human health. In Bangkok, exposure to lead was found to be the top environmental health problem, resulting in up to 400 deaths, 500,000 cases of hypertension, 800 heart attacks and strokes, and 700,000

lost IQ points in children per year (USAID, 1990). In Quito, food contamination from micro-organisms and outdoor air pollution were determined to be the most serious environmental health risks (Arcia et al., 1993).

Figure 4: Environmental indicators for Tianjin, China

Tianjin Urban Environmental Indicators (1990)				
Indicator	Unit	Level	Score	Max. Score
Daily average of TSP	mg/m ³	0.29	6.0	7.0
Daily average of SO ₂	mg/m ³	0.10	0.1	3.0
Coverage of dust control area	%	100	5.0	5.0
Coverage of urban gasification	%	80.4	3.0	3.0
Coverage of urban district heating	%	10.9	0.6	3.0
Coal-using households	%	51.5	2.5	5.0
Industries meeting air quality standards	%	67.1	2.0	5.0
Vehicles meeting exhaust standards	%	75.6	2.5	4.0
Drinking water meeting standards	%	96.4	6.0	7.0
Average COD in urban surface water	mg/l	6.4	4.5	5.0
Waste water per value of output	t/Y10,000	69.5	5.0	5.0
Municipal waste water treated	%	22.0	3.5	5.0
Industrial waste water meeting standards	%	77.7	3.0	4.0
Industrial waste water treated	%	59.6	2.0	4.0
Average ambient noise	dB(A)	59.0	6.0	10.0
Average traffic noise on main roads	dB(A)	71.0	4.5	5.0
Industrial solid waste recovered	%	62.3	4.5	5.0
Industrial solid waste treated	%	31.0	2.5	5.0
Municipal solid waste disposed	%	100	5.0	5.0
Green area per capita	m ²	2.32	1.0	5.0
TOTAL			69.2	100.0
SOURCE: NEPA, 1991.				

Economic valuation

Urban environmental problems have real economic costs which are usually linked to lowered productivity, congestion, and health care. For example, annual productivity losses from waterborne contamination in Manila are estimated at US\$100 million; Bangkok currently loses one-third of its potential gross city product due to congestion-induced travel delays; and annual health care costs from air pollution in Mexico City are estimated to exceed \$1.5 billion. A number of economic valuation techniques exist to estimate the costs of productivity losses, congestion, and health as well as lowered ecological productivity and loss of amenities (Shin et al., 1995). These analyses can also include an equity dimension to determine the burden of costs borne by the poor.

Household and community techniques.

Households and neighborhoods are often at the locus of urban environmental problems *and* solutions. Several techniques can be used to better understand the types of environmental problems faced by urban dwellers, and what households and communities view as their priority environmental problems. These include (a) classic random-sample household surveys; (b) contingent valuation to assess a household or a community's willingness to pay for a service or an amenity; and (c) participatory rapid appraisal. These tools, which can be used individually or in tandem, have different applications and limitations which are described in the following section.

Geographic information systems.

GIS, often combined with remotely sensed data, is a powerful tool for urban environmental analysis that is increasingly being used throughout the developing world. Environmental applications of GIS in developing country cities have included land suitability analysis; hazard and environmental "hot spot" identification; land-use and land cover mapping; watershed analysis; and siting of environmental services and infrastructure. Other urban applications of GIS include preparation of base maps, change analysis, management of infrastructure networks, housing typologies, and demographic analysis (Paulsson, 1992).

Rapid urban environmental assessment

The techniques described above are useful for assembling information, analyzing data, portraying problems, and ranking issues. Rapid urban environmental assessment is a process that builds on data and analysis to clarify issues, involve stakeholders, set priorities, and achieve political consensus for action. The assessment consists of three steps: (a) assembly of existing data; (b) analysis of environmental conditions and causal relationships; and (c) public consultation. Data are collected using the questionnaire referred to earlier, and come from a range of sources (routine monitoring, information on existing infrastructure and services, epidemiological and other health data, information on natural resources and systems, etc.). This data and the results of existing studies, including environmental health risk assessments, indicators analysis, and GIS work, can be used to prepare an urban environmental profile that reviews environmental quality in an urban area, development-environment interactions, and the institutional setting for environmental management. Information is then shared with a range of stakeholders who are brought together to discuss problems, constraints, priorities, and ways forward. The process is a useful first step towards tackling urban environmental problems because it can address issues which cut across conventional lines of authority, geographical boundaries, and time horizons (Leitmann, 1994a).

Environmental Management

Comparison of Tools

The following matrix provides information on the most appropriate applications for each tool, limitations, and both monetary and temporal costs. While the matrix is a generalization, it may help to point the reader to a more appropriate tool or set of instruments, depending on one's needs and resources.

TOOL	APPLICATIONS	LIMITATIONS	\$*	TIME
Data questionnaire	1) assemble secondary data 2) identification of data gaps	1) not prescriptive 2) data usually not comparable over time, areas and population groups 3) variable reliability	\$	as little as one staff-month
Indicators	1) development of baseline information 2) monitoring and evaluation 3) comparative analysis	1) not prescriptive 2) garbage in, garbage out (GIGO)	\$	depends on frequency & level of detail
Health risk assessment	1) ranking problems & options 2) prediction of outcomes 3) input for economic valuation 4) identification of causal factors	1) variable validity depending on source of assumptions 2) identifies problems but not solutions	\$ - \$\$\$	months (dir model) - years (epidem.)
Economic valuation	1) ranking problems & options 2) input to cost/benefit or cost effectiveness analysis 3) investment planning	1) "valuation of human life" controversy 2) GIGO 3) all costs cannot be captured in economic terms	\$ - \$\$	months
Random sample surveys	1) development of baseline data 2) monitoring changing conditions over time 3) problem identification	1) only provides snapshot 2) not prescriptive 3) issues are often predetermined by survey designers	\$	depends on experience & sample size
Contingent valuation	1) determination of pricing policy for service utility 2) choice of technology 3) valuation of amenity	1) provides individual perspective, not societal value 2) usefully only for issues that can be monetarily valued 3) limited application	\$	months
Participatory rapid appraisal	1) problem identification 2) consensus building 3) community awareness	1) not necessarily representative (non-random) 2) subject to political manipulation	\$	days to months
GIS	1) physical information 2) correlation analysis 3) monitoring 4) problem investigation	1) takes time to understand hardware and software 2) potential for limited transparency 3) data requirements are high	\$ - \$\$\$	variable depending on data required
Rapid urban environmental assessment	1) identification & prioritization of issues & options 2) data & methodology for decision-making 3) input to strategic process	1) requires political commitment for follow-up 2) can be subject to political manipulation	\$	months

CONCLUSION AND APPLICATION TO AFRICA

Applying the tools described above in a consistent manner could be done in Sub-Saharan Africa. The substance of such an initiative – nicknamed Managing the Environment Locally In Sub-Saharan Africa (MELISSA) – would aim at getting better, faster and more sustainable results in the field. The overall goal of MELISSA would be to improve the quality of life at the local level, especially for low-income residents, through environmental protection and management. This could be achieved through a range of objectives including:

- establishing a regional network
- assisting with preparation of environmental management strategies and local environmental action plans
- stimulating follow-up investment
- institutional strengthening of member cities and localities
- reinforcing processes of decentralization and public participation

These objectives are not mutually exclusive and are often interlinked. Also, they can apply equally to large cities and small rural local authorities, as well as non-governmental entities.

Operationally, MELISSA could undertake a range of functions to achieve these objectives. Activities would yield the following results:

- twinning arrangements within the region and/or between SSA local governments and localities outside the region
- use of regional and international technical assistance to support the preparation of local environmental assessments, management strategies and action plans
- documentation and dissemination of good practice cases
- action plans linked to follow-up investments
- tools for assessing and managing the environment at the local level
- policy analyses and reforms
- monitoring of environmental conditions across SSA cities, villages and regions
- creation of an electronic network of Internet and Web connections between African communities (both within and outside of local government)

The European Union and the World Bank have decided to launch a MELISSA initiative starting mid-1996. This initiative will be closely monitored to maximize its impact in the field.

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ENVIRONMENTAL MANAGEMENT TRAINING IN AFRICA

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Summary

Several parts of the World Bank group are jointly designing and implementing an environmental management training approach following the World Bank's experience in their standard macro, sectoral and project works.

The objective of the environmental management training program is to empower professionals from African countries to analyze economic development policies and investments in their countries from the perspective of environmental sustainability.

The core of the training program is on the political economy of the environment from a macro and sectoral to a project perspective. The main subject is environmental valuation which allows a better setting of Environmentally Sustainable Development (ESD) priorities. This approach will then be followed to debate green (e.g., desertification) brown (e.g., urban and industrial pollution) and red (migration) issues pertinent to the African regions.

The training program has been initiated by the training of African trainers at the regional level. A long-term strategy for Environmental Assessment (EA) capacity building is being prepared in cooperation with the World Conservation Union (IUCN). Graduates will then be able to undertake training and facilitation activities at the national level. The first phase of regional workshops will be supply driven, with national workshops being undertaken at the initiative of the country training institutions, preferably in conjunction with a National Environmental Action Plan (NEAP), Sector Work, or Project Appraisal cum EA. For the national workshops, World Bank Task Managers will be asked to attend

Training activities are being supported through co-financing, WB operations and participant fees. The criteria for involvement will be ESD's relevance to the country and Bank operations as well as a demonstrated commitment by the counterpart agency to undertake and follow-up with training activities.

Contents

I. Introduction	141
II. Environmental management training: overview	141
III. Training Delivery	143
IV. Core Training by the Economic Development Institute	143
V. Training on the Political Economy of the Environment	145
VI. EA Training	148
VII. Conclusions	149
Annex : Details on the EA Training Workshops	150

I. Introduction

The World Bank group's environmental management training strategies in Africa respond to the vision of environmental and economic sustainability emanating from the 1987 Report of the World Commission on Environment and Development and the United Nations Conference on Environment and Development (UNCED) of 1992. The 1992 World Development Report on Development and the Environment issued by the World Bank identified three approaches for attaining sustainable development. EDI can help countries make this vision operational by offering quality training on economic analysis of sustainable development.

Environmental management training will support the four-fold environmental agenda of the World Bank group—namely, (a) to set priorities for environmental stewardship; (b) to mitigate potentially adverse environmental and social impacts; (c) to build on synergy recognizing potential trade-offs among poverty reduction, economic efficiency, and environmental protection; and (d) to address global environmental challenges.

II. Overview

The World Bank group's environmental management training for Africa centers on a set of core environmental management training components designed to empower nationals from borrowing countries to analyze economic development policies and investments in their countries from the perspective of environmental sustainability. The core training components are as follows:

1. Fundamentals of Environmental Management
2. Macro and Sectoral Environmental and Economic Policies
3. Project Economic Analysis with Environmental Assessment
4. Land Use and Biodiversity
5. Pollution Prevention and Control
6. Involuntary Resettlement and Social Assessment (EDI, 1994)

Among these training options, the choice of topics and issues will be entirely demand driven.

The first component is an overview of the other five. It is designed for high-level officials who need an introduction to environmental economics and policy. The second and third components focus on environmental economics and policy in relation to environmental and social issues at the macro, sector and project levels, respectively. Initially, these last two components will be given priority for environmental management training in Africa. Valuation is emphasized in both components and is integrated into training in the political economy of the environment, which forms the core of the environmental management training. The remaining components focus on the application of economic and planning approaches to three types of environmental problems: (i) land use and biodiversity conservation ("green" issues), (ii) pollution prevention and control ("brown" issues), (iii) and immigration and involuntary resettlement and social assessments ("red" issues).

EA in Africa — A World Bank Commitment

A core set of training material is being developed by EDI jointly with the Africa Technical Division for Environmentally Sustainable Development (AFTES) and the Central Environmental Department (ENV) of the World Bank. This collaborative approach should provide the environmental management training program a certain economy of scales in producing training materials, the occasion to disseminate best environmental practices, and the potential for incremental improvements in training quality by building on earlier experiences. It should also facilitate environmental management training for World Bank Staff in the Africa Region. However, EDI and the Africa Technical Department will also respond to specific needs of the moment as illustrated in box 1.

Box 1: AFTES Specific Activities FY96 (1st July 1995 to 30th June 1996)

AFTES enhances its contribution to environmental training through the following activities:

Continue to deliver training modules that have proven to be effective inside and outside the Bank:

- * EA training workshops in the field. During 1995, six workshops were delivered with an average of about 30 participants each. The program is briefly described in Annex I.
- * Capacity building in environmental economics. Two workshops have been delivered in the field, including follow-up of the participants through research activities conducted in Africa, mostly related to environmental valuation within the NEAP framework.
- * AFTES will continue to participate in training modules organized by the Network for Environmentally Sustainable Development in Africa (NESDA) and Environmental Economics Networks, including environmental economics, NEAPS, Environmental Institutions, and EA.

Develop new modules:

- * AFTES, in liaison with the NESDA and Environmental Economics Networks, is preparing a training module on indigenous people and the environment. A workshop is planned at World Bank headquarters.
- * A training module is being prepared on Environmental Information, with special attention on Monitoring and Evaluation Components of environmental projects; one workshop is planned.
- * AFTES plans to organize a workshop on Integrated Coastal Zone Management with ENVLW.
- * AFTES, in association with EDI, is developing Natural Resources Management (NRM) training on the basis of a training package prepared by FAO. A first workshop has been organized in Africa.

Finally, AFTES is exploring new modules based on the dissemination of best practices regarding biodiversity, parks and reserves; climate change and implication for environmental management; and experience acquired in NEAP implementation. Cost-sharing arrangements will be sought in developing training by associating interested parties inside and outside the Bank.

III. Training Delivery

The criteria for AFTES and EDI's involvement in environmental management training are (a) relevance to the development process of the country, and to the operations of the Bank and other international development agencies; (b) demonstrated commitment of the counterpart agency; and (c) the likelihood of follow-up activities and decisions by the agency and Bank Operations. For this last point, training which is directly related to new or on-going activity (e.g., NEAP, project preparation with environmental inputs) will be given special priority and will be prepared in collaboration with the task manager in operations.

EDI and AFTES environmental management training strategy will give priority to the training of trainers in order to generate a multiplier effect and maximize training impact. It will also train practitioners (policy-makers, managers, and technical specialists) directly where the acquisition of skills in environmental economics and analysis is needed for immediate application. Training will be national, but will be initiated on a regional basis, particularly where the exchange of experiences is an important mode of learning among senior officials. Finally, short-term (2-3 days) training will be offered to high-level senior officials on priority environmental and social issues pertaining to the development process in their countries.

The World Bank and EDI's Environmental training program will be implemented in close collaboration with African training institutions. Most training activities will be funded through co-financing, WB projects, and participant fees.

Overall, the WB/EDI activities will be only partially driven by operations. Training programs will also respond to demand from client countries themselves. An on-going EA Capacity Building strategy is being prepared by the World Conservation Union (IUCN), and the World Bank looking at ways to reinforce existing training institutions. The World Bank group's environmental management activities in the future will build upon that strategy.

The World Bank group also wants to help support long-term capacity and institution building efforts in African countries, alone or preferably in conjunction with other donors at the request of central governments. Such capacity and institution building efforts will typically last one to several years and integrate the training sessions into an overall approach, including identification of the target audience, design and adaptation of the training sessions to the environmental assessment and review functions, and support to the practical EA "hands-on" work once the formal training sessions are finished.

IV. Core Training by the Economic Development Institute

The objective of the environmental management training strategy for Africa is to empower member country senior government officials, professionals, and community leaders to value, analyze and design economic development policies and investments from the perspective of environmental and social sustainability. To meet this objective, EDI and AFTES, in association with other Bank departments and in close collaboration with African institutions, will offer training from a set of six core environmental and social areas, eventually supplemented by custom-designed courses on related environmental issues.

EA in Africa – A World Bank Commitment

EDI's core environmental management training allows partner institutions to choose from a "menu" of six core components. These are listed below. The first component is an introductory overview of the themes from each of the other five components. The second and third components, which are at the heart of EDI's environmental management training, will focus on environmental economics and policy at the macro and project levels, respectively. The common link between these two levels of analysis is the appropriate valuation of both priced and non-priced goods and services. Valuation is central to this training, especially for addressing market and policy failures. The remaining three components focus on the application of economic and planning approaches at the policy and project levels to specific "green," "brown" and "red" environmental issues of current development importance.

Fundamentals of Environmental Management will provide an overview of the other five core training components described below. It will introduce participants to the interplay between key environmental, social and economic factors and issues at the policy and project levels, for attaining sustainable development (Figure 1). Particularly at the policy level, the link to rapid growth, the cost of cleaning up later, and rapid revenue gains from good environmental policies and institutions will be made more explicit. This component targets high-level senior government officials over a 2-3 day period.

Macro and Sectoral Environmental and Economic Policy will assist member countries to set environmental priorities using appropriate valuation and risk assessment approaches, design environmental economic incentives and regulatory programs, and to develop their institutional capacity to carry out the programs. It will train participants to build on the synergy and recognize potential trade-offs among economic efficiency equity and poverty reduction, and environmental protection. It will require strong policies and targeting of specific environmental problems. It will demonstrate the modest environmental and improvement costs relative to benefits, and the gains from economic development.

Project Economic Analysis with Environmental Assessment will introduce the methodology for making environmental (and social) assessments (EA) effects arising from development projects, and show how to integrate its findings in project analysis. As is the case for the previous topic, valuation will be emphasized. This module is explained in the contribution by Dixon, Harou and Kjørven of these proceedings.

Land Use and Biodiversity will focus on the application of economic and planning approaches to intersectoral green issues, especially on the management of land, water and natural resources, and on land management through biodiversity conservation. Participants will learn how land use can be influenced by incentives and regulations when externalities such as biodiversity loss or threat of species loss require it; how to resolve conflicts surrounding alternative uses of land, especially in coastal, and densely populated areas and at the fringe of conservation areas; and how to apply tools for controlling non-point sources of land and water pollution, especially from agricultural activities.

Pollution Prevention and Control will focus on the application of economic and planning approaches to prevent and mitigate industry and urban pollution, principally point sources of pollution, and also the cumulative effects of pollution. Participants will learn how to determine the appropriate mix of economic incentives and controls to combat pollution, particularly in highly populated areas.

Involuntary Resettlement and Social Assessment will emphasize the social effects of development projects, especially involuntary resettlement, rehabilitation, and the value of community participation, including that of indigenous peoples, women and disadvantaged groups. Participants will learn to identify key social variables, such as time-place information, community-based approaches, NGO participation, and small-scale and area development approaches arising especially from the enforced dislocation and resettlement of affected communities.

By focusing on the development of core environmental management training in these six areas, with particular emphasis on the macro and micro economics components, EDI will make efficient use of its scarce resources to target capacity building where benefits are the greatest and where the Bank has a comparative advantage. EDI's environmental management training will respond to client needs, and will thus vary by region and country.

V. Training on the Political Economy of the Environment

This section covers in more detail the two economic core training activities. In its quest to empower member countries to undertake macro-economic, sectoral and investment analyses duly considering the environmental dimension of the decisions to be made, this training follows the World Bank's approach of standard operational analyses. The inter-relationships of these analyses and their interconnections are schematically represented in figure 1. Considerations of both environmental and economic dimensions to design appropriate policies and investment programs are complex. One could distinguish the macro aspects of sustainable development including country economic studies (CEMs), sector studies (SS), and National Environmental Action Plans (NEAP) or environmental strategies (ES) – boxes 1, 2, and 3 of Figure 1 – and the micro, or project, aspects with the Environmental Assessment (EA) and the environmental costs and benefits of investments – boxes 4-11 of Figure 1. These analyses are interrelated and facilitate the selection of projects and policies that contribute to sustainable economic development. The synthesis of these analyses and their links presented in Country Assistance Strategy (CAS) and monitored through Public Expenditures Review (PER). The environmental and social dimensions need to be fully incorporated into the policies and their country general monitoring.

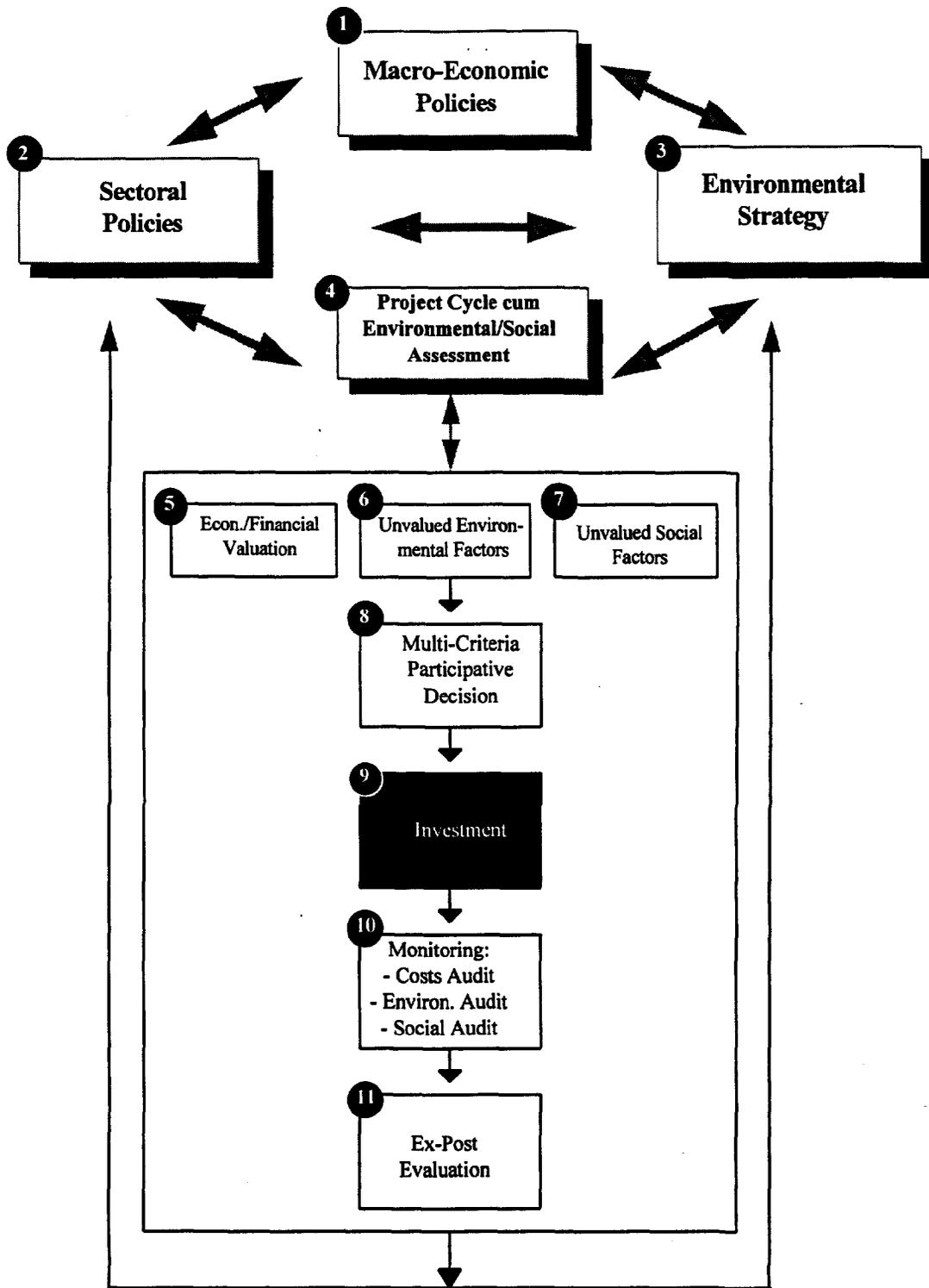
Macro and sectoral policies affect the environment the most. Policy reforms aimed at restructuring an entire economy are undertaken to integrate the national economy into the world market by, for example, adjusting the exchange rate, liberalizing trade, and phasing out different subsidies. These reforms will generally have direct impacts on the growth of the different sectors of the economy as well as on the environment (box 1). Impact on a particular sector is usually further developed in a sector study (box 2). The environmental impacts of national and sectoral economic policies, and other policies, such as population and education, are addressed across sectors in the National Environmental Action Plan (NEAP), which proposes an overall national strategy to protect the country's environment. These environmental action plans or similar environmental strategies, should provide a framework for integrating environmental consideration into a nation's economic and social development (box -3), usually included in a Country Assistance Strategy.

Environmental policies are implemented through programs and projects. Once an environment and sector study are done, investments in programs and projects are usually identified for that sector (box 4). At this point, Environmental Assessment (EA)

EA in Africa — A World Bank Commitment

screens the most environmentally friendly investment alternatives, and proposes mitigative measures (box 6). The EA also includes social assessment (box 7). The resulting environmental benefits and costs of these alternatives can be arrived at by using the environmental and natural resources economics tools (box 5). To the extent that the economic analysis cannot include all the environmental and social factors, the analyst may use some physical indicators together with multi-criteria decision-making tools and a participatory approach to identify the most efficient, cost-effective as well as environmentally and socially acceptable project alternatives (box 9). The investments are monitored for effective management and proper environment audit (box 10). Lessons learned are summarized once the project ends (box 11).

Based on this framework, a two-part training kit is being developed: Economy-wide Policies and the Environment and "Economic Analysis with Environmental Impacts". It has been tested twice by Environmental Economist Network for Eastern and Southern Africa (EENESA) in two highly praised regional workshops. The trainees have been invited to take the initiative in organizing national seminars with EDI playing a supportive role only. The first two national seminars took place in Zimbabwe and Uganda in March 1996.



VI. EA Training

Central to the third core training at EDI, is the link between EA and decision-making process. This link is developed in another contribution of these proceedings (Dixon, Kjørven and Harou). This section describes a training program in EA managed by AFTES, whose seminars tended to be auto-financed or financed through a project appraisal. Capacity building in environmental impact assessment in Africa is of crucial importance for sustainable development and is a major tool in managing the environment and development. By introducing and explaining theoretical and practical environmental assessment in which external effects of projects mitigated and costed, one can improve projects and project selection.

Several Sub-Saharan countries do have some capacity to address environmental problems and to prepare environmental assessments for medium and small sized projects. However, this knowledge is fragmented and dispersed, and is only infrequently used by local decision-makers when initiating development projects. Most of the countries still need to establish the legal basis for environmental assessments (EAs) and to develop the institutional capacity to organize and review EAs. There is also a need to strengthen sector agencies to manage and evaluate EAs for their own projects and programs. Furthermore, improved information networks are needed to assist local government institutions, research institutions, local consulting firms, and NGOs in building up their expertise and to support EA work.

The Bank has designed a number of initiatives to assist countries in this process, including the mobilization of local resources and promoting greater control over the process of development. This has included promoting greater local participation in the development process, and establishing locally appropriate criteria for development decisions. The Bank has an Operational Directive for environmental assessments of projects, and the Environmental Sourcebook with its updates have provided useful examples and material for local efforts to develop their own adapted procedures.

Based on the implementation experience of several EAs in Africa, the Bank's Environmentally Sustainable Development Division of the Africa Technical Department (AFTES) concluded in 1993 that in addition to training in EA procedures per se, there was a regional need for a better for borrowers preparing EAs. This need had also been registered for the relatively large group of local project staff and government officers in Africa involved with World Bank projects.

This conclusion led AFTES to begin implementation of a series of introductory EA workshops in Africa, offering training to countries requesting assistance. The initiative was a pilot scheme, seeking the most efficient way to explain the Bank's EA process using concrete cases where EA work was planned or implemented.

A number of requirements for the training were put in place right from the beginning: (1) The workshops had to be located at or near a World Bank supported project where an EA had been, or was going to be done, and at least part of the identified project had to be available for a field visit and work session; (2) the participants had to have a professional level educational background, in any field, and have some responsibility or link to EA work, either past, present, or future; (3) the participants should come from the government, the project staff or from local private consultant firms; (4) no political appointees or persons irrelevant to EA work should be accepted; and (5) representation had to come from a broad multisectoral set of institutions.

The optimal number of participants were estimated to be around 25, and the selection of the participants is the responsibility of the identified counterpart institution in the country, although the World Bank retains the final authority to approve or reject the nominated participants. In most cases the counterpart agency became the sector ministry responsible for the development project or the EA. A standard workshop program is included in box 2. Six national workshops have been conducted so far and are described in Annex I.

Box 2: Standard EA Workshop Program

Monday: Opening formalities, background information, reasons for EA, World Bank EA procedures based on OD 4.01(part 1), local conservation issues, local EA work

Tuesday: World Bank EA procedures (part 2), local biodiversity, cultural diversity, environmental economics, social impacts assessment

Wednesday: Field trip to project site, field presentations and discussions

Thursday: Group work, analysis and mitigation - map exercise (based on the field trip). Plenary presentations and discussions

Friday, AM: EA Terms of reference exercise, summing up, closing

VII. Conclusions

Environmental management training in Africa should be flexible and should be demand driven but from a supply menu. This menu is based on the comparative advantage of the World Bank and EDI— namely, applied economics. On the demand side is the critical need for project EA training. EA is a major tool in environmental policies not only for projects but also for sectors and macro policies (see Goodland and Tillman contributions). To respond to this need, AFTES proposed hands-on, learning-dealt with in several other contributions of these (e.g., Goodland and Tillman) proceedings and is the object of one of EDI core training which focuses on environmental valuation (EDI, 1995).

Annex : Details on the EA Training Workshops

The first workshop took place in Kaduna, Nigeria in October 93, and was linked to the initiation of the environmental assessment for the nationwide Forestry III project. About 50 interested professionals from universities, private institutions, and the government turned up for the workshop, about twice the number requested. Both expatriate and local lecturers were used for the theoretical sessions, and the field work consisted of a visit to a forest reserve which had been experiencing considerable encroachment by people. Field discussions were held on site with excellent participation. As a three-day event, the workshop was too short to cover all issues properly, even at an introductory level. The lessons learned of this workshop were that workshop duration had to be lengthened for presentations and discussion, that the agenda should be further refined, and that the number of participants should be reduced to enable a better dialogue during the workshop.

The next workshop in Tsavo, Kenya, in April 94, was linked to the environmental assessment for the Mombasa coastal water supply project. The technical component used as a case study was a proposal to increase the water take-out from the Mzima Springs in the Tsavo National Park through the construction of a new pipeline. Kenya Water Corporation had sent out invitations for international bidding on the EA work, and a high proportion of the participants were therefore international consultants and engineers. The length of the workshop was now four days, and a relatively high number of lecturers both from institutions inside and outside the country were used for presentations. The field session was short— a half-day visit to the springs and water off-take area. One of the lessons of this workshop was that there were too many lecturers, something which made it more difficult to maintain a controlled professional "thread" throughout the proceedings. The local capacity building aspect had also suffered because of the high number of foreigners in the workshop, which hampered local participation in discussions.

The third workshop took again place in Nigeria (Ibadan) in June 94 and was based on EA work related to the Multi-State Roads project. The participants were selected internally from the Federal and Multi-State roads authorities. in order to test a more concentrated workshop focus. This time the participants were mostly from one sector consisting of Nigerian roads engineers, and, with some effort, the number was kept to 20. The field session was a full day visiting planned and implemented roads under the project. The agenda had by now been further refined and the number of days increased to a full week. Among new agenda items was a group work session which gave participants large hypothetical land use maps and asked them to suggest and justify a road alignment through a complicated set of environmental issues and obstacles. Although it was an excellent professional group participating, there was too little diversity to stimulate the necessary multisectoral interaction to solve the problems adequately.

The fourth workshop took place in Arusha, Tanzania, in August 94, and was based on the EA for the road-rehabilitation project for the road from Makuyuni to Ngorongoro. This road project is posing an interesting and complicated array of impact questions on wildlife, native cultures, water and land use, tourism development and more. This time the selection of participants was kept to 27 participants in total, including six women. Participants came from government institutions, project staff and private consultants; expertise on local issues was obtained from the universities and NGOs. The field session was extended to one and a half day, and the practical group

work exercise was improved. In response to participant suggestions, environmental economics was given a more prominent place in the workshop, while social impact issues in EAs remained a weak item. The administrative set-up for this workshop was given to a local NGO, an arrangement which worked out well. Lessons learned included the need to strengthen environmental economics and social impact assessment in the agenda.

The fifth EA workshop was implemented in Blantyre, Malawi in early March 1995, with 33 persons in attendance. The Malawi Ministry of Research and Environmental Affairs (MOREA) was the national organization responsible for the workshop. Participants were selected from professional level staff in all relevant ministries and institutions in Malawi, ranging from lawyers and economists to sociologists, educators, and environmentalists.

A comprehensive proposal for national EA procedures had been prepared in advance of the workshop, and much of the first two days was spent discussing these broad guidelines prepared in preparation for a national environmental investment program. The workshop coincided with the Malawian process of adopting a policy of environmentally sustainable development. The planned Kapichira hydropower project was selected as a case study, and the field trip was to the Kapichira waterfalls as project site.

Participants indicated that the workshop had given them an increased understanding of the sometimes complex issues involved in sustainable development. This workshop differed from the previous ones in that Malawi took a much greater responsibility for its implementation and, therefore, considerably increased its "ownership" of the event. Lessons learned included that such local "ownership" secures better local adaptation and integration with national work, but leads to more confusion in places and otherwise changes the running of the workshop considerably. The local resource persons selected by the counterpart institution for the workshop were very good, but the workshop secretariat provided by the Ministry was inflated and inefficient.

The sixth environmental assessment workshop under the AFTES pilot program was implemented in Swakopmund, Namibia, in late April 1995. The workshop focused on EAs in the petroleum sector; 47 professional level participants attended. This was the first workshop in the AFTES EA workshop series that was regional in participation and scope. Participants came from Kenya, Tanzania, Angola, Mozambique, Malawi, Zambia, Zimbabwe, Uganda, South Africa and Namibia. The workshop was co-financed by the International Program for Petroleum Management and Administration in Stavanger, Norway, and the National Petroleum Corporation of Namibia.

Because of the regional approach, the workshop program was different than the previous ones and turned more into a mini-conference than a workshop. The Namibians themselves wanted one full day for presentations of their work on EAs and environmental safety. Another full day was allocated to presentations by each of the participating countries from outside Namibia, outlining the status of their EA work.

Since oil drilling in Namibia is in the exploratory stage and is all off-shore, it was impossible to make a field visit to a suitable case study site from the petroleum sector. The field trips went instead to a large open pit uranium mine and to a hydro dam built for aquifer recharging. No time was left for group work.

EA in Africa — A World Bank Commitment

The National Petroleum Corporation of Namibia (NAMCOR) was the professional counterpart institution, and the Center for Energy, Environment, Science and Technology (CEEST) in Tanzania was used as a secretariat for administrative arrangements.

The Namibian workshop/mini-conference was successful in illustrating the importance of environmental assessments for quality control of projects as well as the close relationship between environment and development. Apart from that, the regional approach is not particularly useful for the objective of local capacity building in environmental assessment.

Literature

EDI, 1994 EDI Environmental management training Strategy. Mimeo. Washington DC, USA 15p.

OECD, EDI, ODI 1995. The Economic Appraisal of Environmental Projects and Policies: A Practical Guide. OECD, Paris. 171p.

Durban World Bank EA workshop

Questions & answers

Emmerich Schebeck & Jean-Roger Mercier

During two the panel sessions that separated the two batches of individual presentations, participants had the opportunity to ask questions to the Bank's representatives. All questions presented were extremely relevant and helped clarify quite a few points not addressed. For the convenience of these proceedings, the questions have been grouped, and a synthesis of the answers has been presented right after the corresponding question.

Environmental assessments and review

Use of environmental economics

How much is environmental economics presently used in EAs of World Bank financed projects?

The Operational Directive (OD) 4.01, which regulates the use of EA in Bank-financed projects clearly states that EE is compulsory; however, out of 28 "African" EAs recently reviewed, very few had EE at the adequate level. Even sheer quantification of impacts was limited. Our position is that we are learning. We do not, however, want to fall into the trap of having to cost the kg of lemur potentially destroyed by a project. Many pieces of advice have been provided in the EA Sourcebook and its update. This is a series of documents worth disseminating. Other source of help: publication on economic analysis in project preparation by John Dixon and Louise Scura. For Africa, Jan Bojö and Frank Convery have produced several publications, principally dealing with the economics of natural resources.

Use of EA for energy projects, e.g., dam construction

What is the practical experience of the World Bank in EA in the energy sector?

The Bank experienced many problems and faced lot of opposition when it financed hydro projects. These have indeed had serious environmental impacts. In several cases, it reached a point where the Bank refused to co-finance a project. For instance, the Manantali Dam project on the Senegal River has generated several impacts: need for artificial flooding, health problems, even the impact of transmission lines. Increasingly, the Bank encourages a sector approach. For China, a computer model was designed and developed to help study the impacts of various energy management strategies, including the quantity of acid rain generated.

Implementation

Isn't there a gap between the recommendations of the EA and the actual implementation of the same? Are there user friendly benchmarks that would allow better monitoring in the field?

Yes, this is a problem, but a lot of progress has taken place over the last couple of years. All donors are aware of the problem. There is an update to the EA Sourcebook coming.

Are the costs of implementing the mitigation plan within the reach of African countries?

A representative of AfDB was mentioning at the AMCEN meeting preceding the IAIA conference that as much as 30 percent of additional cost could be due to the implementation of the EA mitigation plan. If such a huge mitigation effort was needed, it was probably a lousy project to begin with. In any case, there is a negative image of EA among developers. How to change this image? It is probably useful to repeat that EA is cheaper than no EA. In Thailand several years ago, there was a WB financed industrial project that negatively impacted rice field. The rice farmers had to come through the back door as the local project manager refused all forms of dialogue, saying that the farmers were not worth talking to. The angry warnings from the farmers lasted two seasons with no response from the project management: eventually, the farmers burned the \$1/2 million dollar project factory to the ground. When their voices are ignored, people usually become rightly furious and frustrated.

Donors and borrowers

Should EA be always be donor-driven? Isn't there a gap between what the donors want and what the countries need. How to resolve differences?

Problem in Nigeria in the oil producing area. Oil companies did not anticipate the strong reactions of the local people. Lack of involvement of these people at the time of preparation of the project. Yes, the Bank is willing to work on harmonization{ of EA regulations, standards and legislation.

Effectiveness of the environmental clearance

Has the World Bank used its environmental clearance rights to stop a project?

Yes, it did happen in the past, but some projects have been dropped for other reasons than environmental. The Regional Environmental Divisions have the clearance rights. The Executive Directors also have a major role to play to influence the decisions by the staff and the borrowers. Increasingly, the central environmental division is brought on board, especially when methodological issues are involved or international expertise is needed.

Harmonization of EA requirements and procedures

Is there a serious attempt to harmonize Bank's with other donor and borrowing country requirements and procedures?

Yes, there is, for instance, an annual meeting of Multi-Financial Institutions (regional banks like the AfDB which aims at maximizing the information sharing, but does not aim at uniformization. Each meeting (1995 is the time of the third of such meetings) starts with specific points –e.g., privatization, frontier of our activities, alternative instruments. It is also worth mentioning that the Russian Government and the World Bank have gone through an in-depth harmonization of their EA requirements and procedures (see the contribution by Andrei Barannik and Valentina Okaru).

Participation in EA

Is appropriate information really available to all the groups concerned?

Public consultation is very critical in project preparation process and decision-making. It is especially true in EA, as affected people are the ones that will live with the project over the long run. The lessons learned should allow EA practitioners to come up with reasonable proposals based on their professional judgment and public consultation.

This is also one more argument in favor of the use of economics in EA, as contingency values can be included that are based on interviews, e.g. in villages. The World Bank has lots of information available on participation and disseminates it widely.

How serious is the World Bank on participation in EA?

It took about four years for change to filter inside the institution. This year, all projects developed in the Sahel Department of the World Bank are prepared through participation. It is often, but not only, at the national Ministry's initiative. Examples include a higher education project in Senegal which involved both unions (students' & teachers'). This creates the need for more flexibility: all stakeholders become partners. There is an impact on project design: awareness has to be risen on both sides (Government & World Bank). In Senegal, participation resulted in a reallocation of budgetary resources beyond expectations. The independent evaluation by OED of projects completed showed that those with participation performed much better than the others, the main reason being that the sustainability issue was addressed.

The concept of participation is valid, but how to organize it in practice?

Is an NGO representative of the people? Not uncommon to find NGOs that are just special interest lobbies. This has been seen, e.g., in dam construction projects. How to identify all the groups really concerned? It is a specific problem to Africa. Politicians have been known to influence people.

NGOs are now designated as major partners in EA preparation. How are NGOs defined and identified?

It is indeed a serious issue. Different EAs have had different public hearings procedures (reference to AMCEN meeting and to the contribution by Shimwaayi Muntamba).

Analysis of alternatives

How important is the analysis of alternatives in EA of World Bank financed projects?

It is quite important, and one of the solutions to achieve a proper approach is to start the analysis earlier in the decision-making process. The concept of Strategic Environmental Assessment - SEA - (see the contribution by Robert Goodland and Robert Tillman) is very helpful in solving this problem. One of the tricky issues is how to coordinate with engineering studies, as the EA requires at the same time some level of engineering definition and the flexibility to change the engineering design. There is a difficult dialogue sometimes because the analysis of alternatives has often been done much before, but only with technical or economic criteria without integration of environmental nor social concerns. There exist new instruments: integrated sector approach, e.g. for transports where all partners intervene, Government as well as other donors. Taking a multi-yearly perspective also helps with the strategic decisions.

National environmental management institution and the World Bank: respective roles in EA

On specific projects, how do national institutions and the World Bank cooperate (example of Nigeria forestry project EA) ?

All efforts are made to involve the national institutions. In most African countries, though, line ministries often have a hard time themselves identifying the need to consult with their own environmental organizations. This is especially traumatic when countries have gone through the NEAP process.

Miscellaneous issues in EA

There are many legal aspects in EA preparation: how are the regulatory regimes identified and included?

Often difficult. Not yet seen an EA that defines clearly the legal obligations of the beneficiary. Lawyers have been forgotten in the list of the specialists to be included in an EA team. However, lawyers are taken very seriously at the World Bank.

Structural adjustment projects do have an impact on the environment. How is it handled?

Yes there is a requirement. Real question is how to do it meaningfully? The work is only starting.

There is a feeling that health concerns are not well integrated into EAs. How true is it?

Yes and no—most of the time it is a joint effort with WHO, for instance China dam project and schistosomiasis. Health assessment on the contrary central, like in the case of Mexico. Also in Sahelian countries, strong involvement of WHO in a 5 year monitoring scheme.

Other environmental procedures

National Environmental action Plans

How reliable has the use of environmental economics been in the preparation of NEAPs (e.g., the cost of degradation Madagascar).

Environmental economics is a relatively new discipline and 6 years is not enough to establish it because time is lacking to integrate fully all the specialities and the specialists. François Falloux who, at the time of the NEAP preparation in Madagascar, asked for a "back of the envelope" calculation of the cost to the national economy of environmental degradation, was essentially willing to provoke reactions so as to improve estimates in the future, and this is precisely what seems to be happening.

National policies should reflect national perceptions, but are NEAPs nationally driven? The World Bank is pushing on the one hand for better environmental management, on the other hand for structural adjustment. How are these approaches made consistent?

The latest count on NEAPs in SSA was 22 fully adopted. Of these, 8 gave rise to Environmental Support Programs (ESPs) under implementation, all supported by the World Bank, with more being prepared. There may indeed be difficulties to ensure consistency in the case of sectoral structural adjustment. In any case, it is not intended to use NEAP as a conditionality, but there is a systematic attempt to lend to countries in order to help implement the recommendations of the NEAPs and increase local capacity.

One of the participants thanked the World Bank for permitting insight into its on-going programs and prospects.

In reply, World Bank representatives confirmed that the intention was to share information in the broadest possible manner. In particular, more information is to come with the various updates of the EA Sourcebook.

**African
High-level Ministerial Meeting on
Environmental Impact Assessment
(EIA)**

Durban, South Africa — June 24-25, 1995

Communiqué

WE, African Ministers and representatives of Governments responsible for Environment, having met in Durban, Republic of South Africa on 24 and 25 June 1995, and having deliberated on the issues of Environmental Impact Assessment (EIA):

RECALL the decision of the First Session of the African Ministerial Conference on the Environment (AMCEN) held in Cairo, from 16-18 December 1985, which called for the implementation of a Regional Programme of Action on Environmental Education and Training in Africa as an integral part of capacity building;

ARE AWARE that Environmental Impact Assessment, as a development planning and decision-making tool requires, *inter alia*, the development and strengthening of capacities at the local, national, sub-regional, and regional levels;

NOTE that the First African Regional Conference on Environment and Sustainable Development held in Kampala from 12-16 June, 1989, reaffirmed Africa's commitment to sustainable development as a priority which requires political commitment for the sustainable use of Africa's environmental resources, as well as effective sub-regional, regional, and global cooperation for this purpose;

RENEW our commitment to the African Common Position on Environment and Development submitted at the 1992 Earth Summit (UNCED) as representing Africa's environment and development agenda;

REAFFIRM our commitment to the UNCED Agreements, including Agenda 21 and the Rio Declaration, which state that *Environmental Impact Assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have adverse impact on the environment and are subject to a decision of a competent national authority;*

RECOGNIZE the new AMCEN policy and programme adopted at its Fifth Session held in Addis Ababa, from 22-27 November 1993 in response to Agenda 21, in which a high priority was accorded to capacity building in environmental economics, accounting and management tools, environmental law, institutions and policies, and environmental education and training;

FURTHER REAFFIRM our support for public participation in development programmes at all levels;

AGAIN RECOGNIZE the fragility of coastal states and the environmental specificities of Small Island Developing States (SIDS) which calls for enhanced implementation of EIA;

EA in Africa — A World Bank Commitment

ARE AGAIN AWARE that approaches to EIA should be region and country specific;

ALSO NOTE with appreciation the initiative by Tunisia in hosting an eco-technology centre which shall contribute to the transfer of appropriate and adapted technology to the needs of Africa;

ARE FURTHER AWARE that although the costs of EIAs may represent additional financial costs of development programmes to African countries, the long-term costs of not undertaking them might be higher;

APPRECIATE the initiatives of UNCHR in developing EIA guidelines for those areas to promote their application;

FURTHER NOTE that widespread poverty in the region is a major factor contributing to environmental degradation and that the implementation of sustainable development policies, including the effective use of EIA as a development planning tool, is constrained by the lack of financial, human and technical resources;

ARE, HOWEVER, EQUALLY CONVINCED that financial and technical resources for developing and strengthening the mechanisms for promoting EIAs should, as far as possible, be generated by our governments in the spirit of self-reliance, and that external assistance and cooperation be sought to, inter alia, strengthen our ability to achieve these objectives;

HAVE HEREBY COMMITTED ourselves to formalize the use of EIA within a legislative framework for development planning and decision-making at the project, programme, and policy levels;

HAVE, THEREFORE, IDENTIFIED the following areas for immediate priority action:

(a) using EIA as a continuous planning tool – and strengthening institutional and legal frameworks for this purpose to ensure enforcement of EIA – by fully integrating this tool, including biophysical and socioeconomic aspects, from the early stages of policies, plans, programmes and projects formulation, implementation, monitoring, commissioning, and evaluation;

(b) sensitizing policy and decision-makers in government and the private sector to the importance of integrating EIA in development planning;

(c) establishing:

(i) an EIA database on experts and institutions in the region;

(ii) a Geographic Information System (GIS) to facilitate activities on specific environmental problems that tend themselves to EIA;

(iii) a mechanism to promote information exchange on a regular basis;

(iv) an African Network of EIA Experts and interested parties, building on the existing networks such as UNDP, ADB, World Bank, Network on Environment and Sustainable Development in

Africa (NESDA), IUCN and the AMCEN Network on Environmental Education and Training and its centres of excellence, to provide technical advice, information and training on EIA and to mobilize the necessary financial support for its activities, and to this end call upon the donor community to formally consider an appropriate approach to effect this step;

(v) collaborative activities between African Centres on the Environment and African countries so as to facilitate EIA capacity building in the region;

(d) promoting cooperation, including the exchange of experiences amongst ourselves and ensuring the development and use of country - specific guidelines, while being aware of international efforts in this area, and recognizing the African Ministerial Conference on the Environment as the appropriate forum to advance these purposes;

(e) promoting cooperation between developed and developing countries, including the adoption of those EIA procedures as they benefit and suit the needs of our countries;

(f) promoting capacity building, based primarily on the use of African expertise and institutions, and urging our countries to:

(i) develop curricula and other training programmes to incorporate environmental education and EIA at all levels of education and training;

(ii) encourage governmental and non-governmental organizations active in environmental management to participate in all related capacity-building activities, as well as in regional training programmes;

(iii) enhance public awareness and popular participation, particularly NGOS, women, youth and community level organizations in the development and use of EIA;

(iv) encourage all environmental movements active in the region to promote the development and use of EIA in all their activities;

(g) promoting coherence of EIA procedures adopted by African countries;

(h) initiating a Regional Convent on EIA, , including activities and event which have trans-boundary impact; and

(i) promote, as a matter of urgency, the ratification of existing regional and international conventions on the environment of relevance to Africa.

EA in Africa — A World Bank Commitment

WE EXPRESS our commitment to the implementation of the above actions in our countries and, within the framework of AMCEN, to participate actively in promoting cooperation at the sub-regional, regional, and global levels for this purpose.

WE ARE appreciative to UNEP for having provided a forum for us to discuss EIA, as one important tool for sound environmental management and sustainable development and request UNEP to continue to facilitate and support our efforts within the framework of AMCEN in implementing the above actions and in all other issues related to environmental management in the region.

WE RELAY, through H.E. Mr. D. de Villiers, Minister of Environmental Affairs and Tourism, our gratitude to the Government and People of South Africa, for the warm hospitality we were offered during the period of this meeting.

Adopted at Durban, Republic of South Africa on 25 June 1995

Robert Goodland

The encouraging, diverse, and forward-looking presentations at this EA workshop and the lively debate between participants and contributors suggest we live in a time of transitions. Convergence was reached on six major transitions.

Transition 1: From Greenfield to Clean-up.

Environment used to be mainly prudent design of a new project in a pristine or green-field site. That idyllic era is passing as development proceeds and population densities intensify worldwide. Now the environment profession is more frequently faced with:

- Rehabilitation of existing plant
- Retrofitting polluting plant into closed-cycle systems
- Restoring damaged sites (e.g., open-cast mines, polluted soil)
- Decommissioning of obsolete plant
- Post-audits of previously used sites
- Squeezing a new project between existing ones.

These trends emphasize the need for Regional and Cumulative Environmental Assessments.

Transition 2: Consultation to Partnership

Formerly, people affected by a project – such as oustees living in an area to be impounded for a reservoir – were warned of what was going to befall them for the greater good of distant citizens. This was one-way information flow. Later, affected people were told to move before the reservoir filled. Later still, one-way information flow evolved. Affected people were helped to move physically by being lent a government truck or two for the weekend. Then came primitive consultation, the evolution to a two-way, but unequal, exchange of information: "You are going to be moved in six months. Any preferences on how, or where to?"

Now, affected people are commonly informed of general plans well before the project is designed and participate in project design processes – especially in the design of measures to mitigate harm to affected people. Today's transition is towards more equal partnership and common problem solving. "We agree that we need more energy, for example. Shall we build a coal-fired generator or a hydro dam and, if so, where on the river and how high?" The transition from being informed, through consultation to participation, and increasingly to partnership, is being fostered by civil society and development agencies. They are now required components of all better EAs. In the future, massive national projects will proceed only if there is some form of national consensus that it is the most acceptable alternative and the one with the least regrets. This trend emphasizes the need for Sectoral Environmental Assessments.

Transition 3: EA from Placebo to Improved Design

Environmental professionals struggled mightily to get away from using EA as retroactive justification for a project. Adding EAs onto the end of a previously designed

project was the long gone placebo or cosmetic that so undermined the profession and gutted the EA tool. This evolved to a stage where the basic design of the project itself remained unaltered by the EA, but some mitigatory measures improved worst excesses. Now EA and feasibility go hand in hand so that the EA team actually design out the worst impacts with the feasibility team. This improves project design so much that an "EA Report" itself becomes less needed.

Now the big challenge to environmental professionals is to shift EA upstream from individual project design into project selection. This too stresses the need for Sectoral EA. All alternatives in the whole sector need to be subjected to Sectoral EA in order to rank them and to add this ranking to the economic least-cost ranking. This elevates EA from its old role as project improver into a more powerful role of project selection. Sectoral EA might promote gas over coal and nuclear, hydro over gas, and solar over hydro, for example.

Transition 4: Harmonization of EA Procedures

EA teams used to waste time tailoring various EA reports in order to meet different national, bilateral, and multilateral EA requirements for the same project. The transition to harmonized EA procedures is well on its way, thanks to the CEAA/IAIA International EA Effectiveness Program and the Netherlands/OECD EA Harmonization Program. Now many agencies are adopting each other's EA requirements. This will be enhanced by UNEP's commendable "EA Good Practice Manual" supported by Australia. The transition will never be complete because EA itself will have stay up to date with our rapidly evolving world.

Transition 5: Revamping "Least Cost"

Economics has long relied on the influential tool of ranking all alternatives into an economic least cost sequence. This enables lower cost projects to be taken up before more expensive ones. Now that environmental and social externalities are being internalized — via the EA process — EA seeks to add these newly identified costs to conventional economic least cost sequencing. The result — economic, social and environmental least cost ranking — is the basis of Sectoral EA. This transition has some way to go, but will vastly improve economic development and make subsequent project-level EAs easier, faster and cheaper.

Transition 6: EAs For Poverty Alleviation and Sustainability

As economic development focuses on the topmost priorities of our age, poverty and sustainability, so too EAs should promote those goals. Increasingly, EAs show how poverty can be alleviated and sustainability can be promoted through the project's design. Training, capacity building, and area development such as health, family planning and empowerment of women are included, partly as a result of participation and partly as a result of Strategic EA. EA Professionals are making the transition from a narrow project focus to broader and more important poverty and sustainability goals, including conventional project mitigation.

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EA in Africa – A World Bank Commitment

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EA in Africa — A World Bank Commitment

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EA in Africa – A World Bank Commitment

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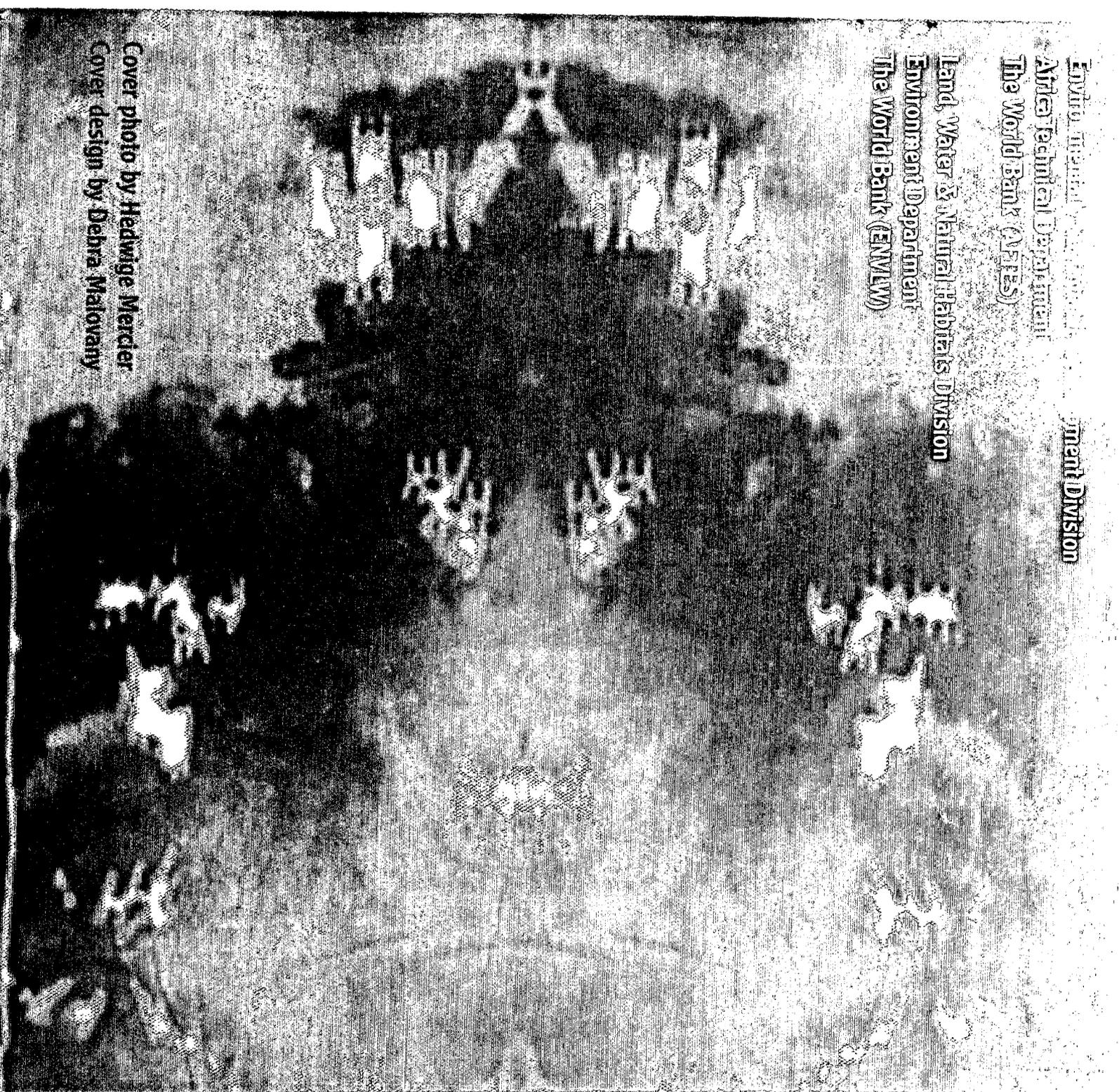
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