

Chapter 5

Mainstreaming Poverty- Environment Linkages into Policy Processes

Coverage

- Explains how to collect country-specific evidence through integrated ecosystem assessments and economic analyses (sections 5.1 and 5.2)
- Describes how poverty-environment issues can be integrated into a policy process focusing on an identified entry point (section 5.3)
- Highlights the development and costing of related policy measures (section 5.4)
- Summarizes elements related to institutional and capacity strengthening (section 5.5)

Key Messages

- Use country-specific evidence to identify priorities and develop arguments to engage effectively in the policy process
- Adapt to the timing and modalities of the policy process and engage with sector working groups, donors and other stakeholders
- Make sure the resulting policy document includes goals and targets based on poverty-environment linkages and implementation strategies that support those targets
- Develop and cost policy measures deriving from policy documents to influence the budgeting process
- Strengthen institutions and capacities through tactical capacity-building and on-the-job learning throughout the effort

5.1 Using Integrated Ecosystem Assessments to Collect Country-Specific Evidence

Integrated ecosystem assessments act as a bridge between science and policy by providing scientific information on the consequences of ecosystem change for human well-being in a form directly relevant for policymaking and implementation.

Policy relevance is achieved by ensuring that the scope and focus of an integrated ecosystem assessment are defined in close consultation with relevant policymakers. Scientific credibility is ensured by involving the best scientists from a range of disciplines and subjecting the assessment findings to rigorous review.

Box 5.1 further explains why integrated ecosystem assessments are useful.

Box 5.1 Why the Need for Integrated Ecosystem Assessments?

Integrated ecosystem assessments can perform the following useful functions:

- Identify **priorities** for action and analyse **trade-offs**, showing how gains in some services may be achieved at the expense of losses in others
- Provide foresight concerning the likely **consequences of decisions** affecting ecosystems
- Identify **response options** to achieve human development and sustainability goals
- Provide a **framework** and source of tools for assessment, planning and management
- Act as a **benchmark** for future assessments and guide future research

Source: UNEP and UNU 2006.

Approach

The Millennium Ecosystem Assessment offers a framework for demonstrating connections between ecosystem services and human well-being, and for quantifying their value in monetary terms where possible. Armed with hard data on the worth of a forest, a wetland or a watershed, for example, policymakers can better design policies and practices that reflect the full value of nature and its services (MA 2007).

The most complete approach to integrated ecosystem assessment is based on the Millennium Ecosystem Assessment's generic methodology for conducting multiscale assessments. Key steps include the following:

- **Assessment of conditions and trends in ecosystems and their services.** This entails the analysis of condition, geographical distribution and trends in the supply of and demand for ecosystem services; the capacity of ecosystems to supply these services; and the impacts of changes in ecosystems on the delivery of services.
- **Development of future scenarios.** Plausible scenarios for the future of the assessment area provide qualitative narrative storylines supported by quantitative models to illustrate the consequences of various plausible changes in driving forces, ecosystem services and human well-being.
- **Consideration of response options.** Past and current actions are evaluated in order to generate a range of practical options and choices for improved management of ecosystems for human well-being and pro-poor economic growth.

A number of key principles from the Millennium Ecosystem Assessment framework and in-country experience should shape the design of integrated ecosystem assessments.

- **People-focused.** While the Millennium Ecosystem Assessment recognizes that ecosystems have intrinsic value, it focuses on maximizing human well-being now and over time. The assessment is concerned with the distributional impacts for different groups of people (e.g. of different age, sex and geographical location) and shows that a dynamic interaction exists between people and ecosystems. The human condition drives change in ecosystems, and changes in ecosystems cause changes in human well-being. Box 5.2 presents examples of ecosystems and their services affected by human-caused climate change.

Box 5.2 How Does Climate Change Affect Ecosystem Services?

Ecosystems and services affected by climate change include the following:

- **Marine and coastal ecosystems:** fisheries, climate regulation, storm/flood protection, transportation, freshwater and nutrient cycling, tourism, cultural value
- **Forest and woodlands:** pollination, food, timber, water regulation, erosion control, medicines, tourism, cultural value
- **Drylands:** soil conservation of moisture, nutrient cycling, food, fibre, pollination, freshwater, water and climate regulation, tourism, cultural value
- **Mountain ecosystems:** freshwater, food, medicinal plants, natural hazard and climate regulation, rangeland for animals, tourism, cultural value
- **Cultivated ecosystems:** food, fibre, fuel, pollination, nutrient cycling, pest regulation, freshwater

Source: WRI 2008.

- **Integrated.** An integrated ecosystem assessment includes environmental, social and economic analyses of both the current state of ecosystem services and their future potential. It provides information about a range of factors, how they interact to influence the ecosystem and how an entire array of ecosystem services is affected by changes in the ecosystem.
- **Multidisciplinary.** An integrated ecosystem assessment is best carried out by an interdisciplinary team of experts, including environmental experts, sociologists, gender experts, economists and political scientists. These professionals may have different views and understandings of the interactions between ecosystems and human well-being, thus strengthening the overall assessment and its results.
- **Participatory.** An integrated ecosystem assessment is best undertaken through a participatory approach, in close collaboration with decision-makers and actors whose work is influenced by the outcomes of the assessment. The selection of issues and the kinds of knowledge incorporated in the assessment may tend to favour some stakeholders at the expense of others. The utility of an assessment is thus enhanced by identifying and addressing any structural biases in its design.
- **Knowledge-based.** Effective incorporation of different types of knowledge in an assessment can both improve the findings and help increase their adoption by stakeholders, who can bring important knowledge about the physical assessment area and its context (e.g. indigenous people, marginalized communities, women).

- **Multiscale.** Efforts should focus on both spatial and temporal scales that encompass the natural processes associated with the problem considered and include the actors that can affect change at that scale. The fundamental unit of interest is the ecosystem itself (e.g. watershed, wilderness, migratory route). Site-specific information cannot always be aggregated to analyse national or global trends. However, undertaking assessments at multiple spatial scales, ranging from the local level to the national or regional level, provides insights on wider trends and processes. In respect to the temporal dimension, climate change projections and scenarios (box 5.3) can be used to inform the assessment.

Box 5.3 Climate Change Modelling

The development community has been working for a long time on climate change projections and scenario-building. Some of the major climate scenario models being used are the Global Climate Model, the Statistical DownScaling Model, the PRECIS (Providing Regional Climates for Impacts Studies) Regional Climate Modelling System and the MAGICC/SCENGEN (Model for the Assessment of Greenhouse-Gas Induced Climate Change/Regional Climate Scenario Generator).

Much of the community's effort has been aimed at strengthening institutions and capacities. For instance, the UK Meteorological Office has been conducting targeted training on climate change modelling for developing countries. Strengthening institutions and capacities for climate change modelling informs integrated ecosystem assessments with climate scenarios and supports sustained poverty-environment mainstreaming with scientific knowledge.

- **Policy-relevant.** The geographic area covered in the assessment should be carefully identified. It should be an area of importance for the policymakers involved in the mainstreaming process. To obtain the most accurate results from an integrated ecosystem assessment, the area chosen should be one for which significant information and data are already available. The assessment's main function is to synthesize existing information by combining different sources of data—formal or informal, qualitative or quantitative. Finally, budget constraints can also limit the area of assessment.
- **Timely.** Because the integrated ecosystem assessment will provide country-specific evidence that can be used for advocacy, raising awareness and convincing policymakers of the importance of sustainable environmental management, the assessment should precede the development and implementation of the policy process the mainstreaming effort is attempting to influence (see section 5.3). However, the information generated through assessment can be used at any time to influence ongoing or future planning processes (e.g. policy process, budget process or subnational planning process).

Further Guidance: Sources and Example

An integrated ecosystem assessment synthesizes existing information. A logical starting point is the existing literature, including peer-reviewed, scientific and semi-scientific works. Databases held by government departments or research institutes such as the World Agroforestry Centre and the Consultative Group on International Agricultural Research are a repository for much unpublished information. However, given the many information gaps regarding ecosystem services and linkages to human well-being, it is often necessary to collect new field data, make use of models and tap local knowledge. Gender analysis frameworks, which provide step-by-step tools to analyse activity, access

and control profiles of men and women, can be useful in collecting new and analysing existing data. For more guidance, practitioners can refer to the following resources:

- *Ecosystems and Human Well-Being: Conducting and Using Integrated Assessments – A Training Manual* (UNEP and UNU 2006), available in English, French and Portuguese
- *The Millennium Ecosystem Assessment: A Toolkit for Understanding and Action* (MA 2007)
- *Ecosystems and Human Well-Being: Synthesis* (MA 2005)
- *Ecosystem Services: A Guide for Decision Makers* (WRI 2008)
- *The Millennium Assessment Manual* (UNEP-WCMC, forthcoming 2009).

Box 5.4 illustrates the integrated ecosystem assessment approach as used in Trinidad and Tobago.

Box 5.4 Assessment of the Northern Range, Trinidad and Tobago

Background. The Northern Range is a complex ecosystem covering approximately 25 per cent of Trinidad’s land area. Its catchment areas are the most significant contributors to the island’s fresh-water supply and help control flooding in the low-lying foothill regions. The range provides vital space for housing and agriculture; is important for ecotourism and recreation; provides opportunities for small-scale freshwater and coastal/marine fishing; affords safe harbours; contributes to local climate regulation; and provides other economic activities through timber harvesting, wildlife hunting and the manufacture of goods from non-timber forest products.

Drivers of change. Among the many drivers of ecosystem change in the Northern Range are urbanization, upgrade of housing, slash and burn and other unsustainable agricultural and land-clearing practices, and increased demand for recreational activities. Increasing variability in weather patterns drives change in run-off regulation services. Unregulated mining, agriculture and forestry have all contributed to the range’s decline. Other threats are forest fires, increased unsustainable land use for recreational purposes and poor zoning and policy. On the island as a whole, freshwater resources are threatened by deforestation and pollution. A faulty water distribution infrastructure is responsible for losses of 50–60 per cent of the water supply before it reaches consumers.

Assessment approach. The assessment relied on published scientific literature, supplemented by professional input and community perspectives. It was organized into three components, examining forest, freshwater and coastal resources. Biodiversity and land use were evaluated as cross-cutting themes in all of the subsystems. The amenity value of the subsystems was considered throughout the assessment and at multiple scales.

Response options. Projections indicate that conversion, degradation and decline in ecosystem services will continue unless appropriate policy measures are implemented to check the driving forces of ecosystem change. The assessment recommended review and implementation of existing policies and development of new policies for sustainable management, including the following:

- Zoning of the eastern section of the Northern Range for conservation purposes
- Revised contour and slope limits for housing construction in the western section
- Local-area physical development plans compatible with the overall plan for the Northern Range
- Executive and legislative action proposals on environmentally sensitive areas and species
- User fees and fines for non-compliance for income generation for specific amenity sites
- Multilateral, multi-stakeholder decision-making processes
- Encouragement of monitoring, evaluation and academic research in the region

Source: Environmental Management Authority of Trinidad and Tobago 2005.

5.2 Using Economic Analyses to Collect Country-Specific Evidence

The purpose of this activity is to demonstrate—through economic analysis—the importance of the environment for pro-poor economic growth, human well-being and achievement of the MDGs in order to influence policy and budgeting processes.

Economic arguments are among the most powerful in convincing decision-makers of the importance of environmental sustainability for achieving development priorities. Economic analyses quantify the contribution of the environment to a country's economy through revenues, job creation and direct and indirect use of resources by the population. By demonstrating the multiple values of the environment, expressed both in monetary and broader non-monetary terms, economic analysis can help persuade decision-makers that sustainable management of the environment will help them meet development goals.

Approach

The contribution of the environment can be shown both by interpreting existing data in new ways (e.g. why watershed and catchment management matters for hydropower) and by collecting and analysing new data (e.g. dependence of poor households on natural resources; costs of climate change-related impacts). Formal market values of natural resources can be highlighted (such as the value of fisheries or sustainable products to certain countries), along with informal market values (such as the importance of bush meat to local economies in parts of Africa).

Special efforts should be made to demonstrate the economic significance of ecosystem services that do not flow through markets, such as the value of coastal vegetation in preventing floods from storms. Economic techniques can be used to estimate these so-called non-market values, thus shedding light on the “invisible” value of ecosystem services and the costs related to their degradation.

It can be useful to link environmental factors to familiar economic indicators used by decision-makers, such as gross domestic product (GDP), export income and mortality and morbidity data on health impacts. Once these relationships are demonstrated, they can help justify decisions about integrating poverty-environment linkages in policy-making and budgeting.

Key Economic Indicators and Their Poverty-Environment Linkages

The linkages between poverty, the environment and key economic and human well-being indicators can be demonstrated at various levels.

- **GDP and GDP growth.** Expressing the contribution of the environment to the national economy in terms of GDP can be accomplished using informal data to show the true value of natural resources, as well as more sophisticated approaches that account for the value of environmental damages and natural resource depletion in calculating the genuine savings of an economy (i.e., subtracting these values from its gross savings) (Hamilton 2000). For example, logging provides immediate revenue, but if carried out on an unsustainable basis, revenue streams will be reduced and eventually cease due to the depletion of the country's forest resources. In addition, costs of environmental degradation approaches have helped make the case for sustainable natural resource management in the Middle East and North Africa (Sarraf 2004), Ghana (World Bank 2007a), Nigeria (DFID 2004b) and elsewhere.

Examples: The Environment and GDP

- In **Cambodia**, fisheries generate 10 per cent of GDP (ADB 2000).
 - In **Ghana**, the national costs of environmental degradation are estimated at 9.6 per cent of GDP (World Bank 2007a).
 - In **Tunisia**, the gross cost of environmental damage is equivalent to 2.7 per cent of GDP, while in Egypt, this cost amounts to 5.4 per cent of GDP (Sarraf 2004).
 - In **West Africa**, fisheries can represent up to 15–17 per cent of national GDP and up to 25–30 per cent of export revenues (OECD 2008a).
- **Macroeconomic indicators of production.** The contribution of the environment to the national economy can also be expressed through macroeconomic indicators of production—for example, by demonstrating the level of exports from environment-related sectors such as tourism.
 - **Employment.** Demonstrating the number of jobs generated by certain environmentally based activities is another way to use economic arguments. Many economic activities that rely on natural resources are informal, part time, seasonal or subsistence based. As such, these sources of employment are consistently underestimated in national economic data and may not even appear in many more formal estimates of employment.

Examples: The Environment and Employment

- In **Brazil**, the most recent agricultural census showed that one rural job is created for every 8 hectares cultivated by small farmers, whereas large-scale mechanized farms provide only one job for every 67 hectares, on average. In Brazil, employment in biofuels or biomass is estimated at half a million jobs (Renner, Sweeney and Kubit 2008).
 - In **China**, employment in solar thermal and biofuels/biomass is estimated to account for 600,000 and 226,000 jobs, respectively (Renner, Sweeney and Kubit 2008).
 - In **India**, replacing traditional cooking stoves with advanced biomass cooking technologies in 9 million households could create 150,000 jobs, not including jobs generated in biomass collection and biomass plantations. In New Delhi, the introduction by 2009 of 6,100 buses powered by compressed natural gas is expected to create 18,000 new jobs (Renner, Sweeney and Kubit 2008).
 - Some 23 per cent of the more than 130,000 rural households in **Papua New Guinea** earn their income from fishing. In the Pacific Islands, large numbers of women gain economic benefits from fishing either directly or indirectly by working in related jobs such as selling fish, exporting and marketing (ADB 2001).
- **Public revenues.** Natural resources are a major source of wealth and, if properly managed, can generate significant tax revenues in low-income countries. Unfortunately, the revenue potential may remain unrealized due to poor market incentives, inadequate subsidies for natural resource extraction (e.g. low-cost loans for Indonesia's timber industry), artificially low taxes on natural resource use, lack of enforcement (e.g.

tax evasion on legal or illegal harvests) or conflicting policies. Hence, improved environmental management can be an important source of additional government revenues, which can be directed toward poverty reduction along with other sources of revenues (see section 6.2).

- **Public expenditures.** The loss of ecosystem services or natural resources may translate into the need for additional public expenditures. Often, the loss of natural resources is treated as having limited impacts, since many of these impacts are not fully priced in the market. Using economic techniques to quantify these non-market values can demonstrate the need for improved environmental management (box 5.5). Various techniques—such as cost-benefit analysis, cost-effectiveness analysis and rate of return—can be used to evaluate potential investments and identify the best ones (see section 5.4).

Box 5.5 Examples of the High Benefit-Cost Ratio of Public Expenditure on the Environment

Benin. Investments in a biological control programme undertaken in the early 1990s to block the proliferation of water hyacinth, an invasive, exotic (non-native) plant, have reaped major rewards. At the peak of the infestation, the livelihoods of some 200,000 people had been affected, with a reduction in income from fishing and trade estimated at \$84 million annually (SIWI 2005). The control programme, and the resulting decline in environmental damage from water hyacinth, is credited with a yearly increase in income of more than \$30 million. With programme costs of just over \$2 million (net present value), the benefit-cost ratio of the investment was enormous (NORAD 2007).

Indonesia. A study analysing the benefits and costs of reef conservation compared to existing practice in Indonesia indicates a considerable rate of return to conservation, ranging from 1.5 to more than 50, depending on the intervention (Cesar 1996).

Madagascar. Investment in a new management regime to address overexploitation of shrimp fisheries in Madagascar has paid handsome dividends. A new programme of long-term, tradable licences was established in 2000 and appears to be working. The benefit-cost ratio of this intervention has been estimated at 1.5 (Rojat, Rojaosafara and Chaboud 2004).

Sri Lanka. Economic analysis has demonstrated that the value of investing in protection of the Muthurajawala wetland north of the capital city of Colombo exceeds \$8 million per year, or about \$2,600 per hectare per year. Flood attenuation accounts for two-thirds of these benefits, with the remaining gains consisting of industrial wastewater treatment (22 per cent); benefits to agricultural production and downstream fisheries (7 per cent); and benefits from firewood, fishing, leisure, recreation, domestic sewage treatment and freshwater supplies (4 per cent). More than 30,000 people—mostly poor slum dwellers and fishing households—benefit from these services (Emerton and Bos 2004).

Uganda. The Nakivubo swamp, near the capital city of Kampala, provides various ecosystem services, including wastewater purification and nutrient retention. Economic valuation studies indicate that the value of these services totals some \$1 million to \$1.75 million per year, with annual costs of maintaining the wetland's capacity to provide these services of only \$235,000. Thus, investments that secure these wetland services are highly profitable, saving the government considerable costs in alternative waste and water pollution mitigation investments and providing a strong argument against further drainage of this valuable wetland (Emerton and Bos 2004).

- **Livelihoods of poor people.** There is growing evidence that poor households rely disproportionately on natural resources to earn their livelihoods. Women are especially dependent on natural resources for income and subsistence. Household income surveys are routinely conducted by countries to derive their poverty lines and can provide a very robust source of data and information on the linkages between poverty and environment. For example, it is useful to know how much time is spent by households, women and men in collecting firewood and water.

Examples: Contribution of the Environment to Livelihoods

- In **India**, natural resources provide up to \$5 billion a year to poor households—or double the amount of aid that India receives (Beck and Nesmith 2001).
- It is estimated that more than 1 billion **people in poor countries** depend on forests for their livelihoods (IUCN 2007).
- Over 90 per cent of the **people living in extreme poverty** depend on forests for some part of their livelihoods. However, global forest cover has declined by at least 20 per cent since pre-agricultural times (World Bank 2004b; UNDP et al. 2000).

- **Health of poor people.** Environmental factors such as waterborne disease and indoor air pollution—some of which may be exacerbated by climate change—are a major contributor to the deaths of millions of children each year and play a leading role in damage to maternal health. Quantifying the environmental burden of disease—that is, the amount of disease caused by environmental risks—should be an integral aspect of poverty-environment mainstreaming. Using the disability-adjusted life years index, which combines the burdens due to death and disability in a single index, permits comparison of the health impacts of various environmental and non-environmental risk factors (Prüss-Üstün and Corvalan 2006). It also enables the environmental burden of diseases to be expressed in monetary terms, such as the total costs to the national economy of lost productivity, additional medical treatment and so forth.
- **Resilience of poor people to environmental risks and climate change.** Climate and weather have powerful direct and indirect impacts on human life and livelihoods, and extremes of weather such as heavy rains, floods and hurricanes can have severe impacts. Changing climatic conditions also affect people's means of subsistence, such as livestock, crops and access to basic services, as well as affecting diseases transmitted through water and via vectors such as mosquitoes (Prüss-Üstün and Corvalan 2006). Quantifying the value of the environment in monetary and

Examples: Environmental Risks

- Approximately 600,000 deaths occurred **worldwide** as a result of weather-related natural disasters in the 1990s. Some 95 per cent of these were in poor countries.
- In **Europe**, abnormally high temperatures in the summer of 2003 were associated with more than 35,000 excess deaths relative to previous years.
- In **Venezuela**, floods in and around Caracas in December 1999 killed approximately 30,000 people, many in shanty towns on exposed slopes.

Source: Prüss-Üstün and Corvalan 2006.

non-monetary terms with respect to resilience to climate and other risks can help convince decision-makers of the importance of poverty-environment mainstreaming (e.g. impact on health, agriculture, damage to infrastructure), as illustrated in box 5.6.

Box 5.6 Estimating the Value of Coastal Protection Services Provided by Mangrove Ecosystems: An Example from Orissa, India

Professor Saudamini Das of the University of Delhi has studied the role of mangroves in providing protection against deaths and destruction caused by cyclones. She has concluded that if all of the mangrove forests existing in 1950 had been intact during the super cyclone that hit the Indian state of Orissa in October 1995, some 92 per cent of the almost 10,000 human fatalities could have been prevented. Moreover, without the present mangroves, the death toll from the 1995 storm might have been 54 per cent higher.

Professor Das estimated that the economic value of these protection services during the super cyclone was about 1.8 million rupees (\$43,000) per hectare. Accounting for the probability of very severe storms in Orissa over the last three decades, she calculated the value of a hectare of land with intact mangrove forests to be about 360,000 rupees (\$8,600), while a hectare of land after mangroves are cleared sells at 200,000 rupees (\$5,000) in the market. The cost of regenerating 1 hectare of mangrove forest is approximately 4,500 rupees (\$110), whereas the cost of constructing a cyclone shelter in the state of Orissa is 3.0 million rupees (\$71,000).

Source: SANDEE 2007.

Key Principles

The approach to conducting economic analyses with a view to convincing decision-makers of the importance of mainstreaming poverty-environment linkages is informed by several key principles, drawn from skills and experience in both economic and environmental analysis.

- **Start from the process to be influenced and economic indicators to be assessed.** The starting point must be a thorough understanding of the process to be influenced. This requires economists who understand the growth process, public finance and employment—and how the environment can be linked to these. Often, simple approaches can be used, drawing on existing data and information such as participatory poverty assessments, public expenditure reviews and tax receipts.
- **Involve decision-makers and experts from different disciplines.** Setting up multi-disciplinary teams—including economists, environmentalists, gender experts, policy specialists and women and men from local communities—is recommended.
- **Use broadly familiar tools.** Success is more likely using tools that build on those that are already broadly familiar to decision-makers involved in national development planning, such as household poverty assessments, economic valuation, cost-benefit analysis or cost-effectiveness analysis. Generally speaking, simpler models are preferable to more complex ones, at least until more basic analysis has been carried out.

- **Make sure that uses of the environment are sustainable.** Some analysis assumes that existing or planned uses of the environment are sustainable—for example, that people who benefit from forest products are not damaging the forest, or that illegal loggers can be taxed at the level of their current harvest. This is often a mistaken assumption. Care should be taken to ensure that the analysis is based on truly sustainable use of ecosystem services.
- **Do not overstate positive poverty-environment linkages.** While the value of positive poverty-environment linkages is often underappreciated, their significance should also not be exaggerated. Poverty-environment linkages are complex, and simple cause-and-effect relationships are rare. Sometimes there are obvious synergies, but often trade-offs are more realistic outcomes. In some situations, dependence on degraded natural resources can be a poverty trap for poor people. In these cases, the best response may be measures that reduce this dependence, such as support for migration along with assistance for those left behind. This is in the interest of poor people, and overstating claims for the environment can be counterproductive.
- **Include the full complexity of the linkages between the environment and economics.** Linkages are complex and vary over time. Impacts can be positive and negative, short term and long term, macro and micro. For example, in carrying out economic analyses, it is important to capture the full depth of economic benefits achieved or foregone. Although measuring immediate impacts is the first priority, subsequent impacts (sometimes referred to as second- and third-order impacts) should also be taken into account.

Example: Subsequent Impacts of Deforestation

Reduced availability of fuelwood is an immediate impact of deforestation. This shortage may lead to a decrease in school attendance by girls, who are required to work longer hours and travel farther from home to help fetch firewood. It may also worsen child illness and malnutrition if households respond by reducing the time spent boiling water and cooking food, which results in unsafe water and a less nutritious diet.
- **Consider spatial presentation of the results.** Data disaggregated at the subnational level can be usefully presented as maps spatially linking the socio-economic situation and the state of the environment and the ecosystems. Such information can then be used to better define the policy goals and targets; inform the development, costing and prioritization of policy measures; influence the budgeting process; and monitor the implementation of the measures. Although maps highlighting poverty-environment linkages have seldom been used, the results of poverty maps suggest interesting prospects for such tools in influencing national development planning. For example, Nicaragua's Strengthened Growth and Poverty Reduction Strategy relied heavily on poverty maps to allocate \$1.1 billion in capital spending over five years (Henninger and Snel 2002).

Further Guidance: Steps

Within the context of a poverty-environment mainstreaming initiative, a step-by-step approach to economic analysis can be useful (table 5.1).

Table 5.1 Main Steps in Defining and Using Country-Specific Economic Evidence

Step	Recommended actions for poverty-environment mainstreaming
1. Define the objectives of the analysis	<ul style="list-style-type: none"> • Define a hypothesis and clear objectives for the analysis • Identify expected outcomes and determine how to use results to influence the policy or budgeting process
2. Define the scope and timing of the analysis	<ul style="list-style-type: none"> • Focus on how sustainable use of the environment will contribute to the achievement of development priorities; for example, if food security is a priority, the economic analysis should highlight how environmentally sustainable agriculture can help achieve food security • Ensure that the analysis takes informal markets into account • Ensure that gender considerations are included • Be timely; timing is critical since the analysis is meant to influence a policy or budgeting process
3. Determine the approach	<ul style="list-style-type: none"> • Determine appropriate approaches based on the objective and scope of the analysis and availability of resources (e.g. ecosystem analysis, cost-benefit approach, economic valuation, life cycle analysis or case studies)
4. Design the analysis	<ul style="list-style-type: none"> • Take stock of existing data and literature to identify information gaps and collect missing information if needed (e.g. through field survey, interviews or case studies) • Determine overall value or benefits of natural resources in relation to national priorities (e.g. economic growth, GDP, employment, exports, household income, poverty reduction) • Assess the trends and changes to natural resources over time under different use scenarios for specific sectors (e.g. agriculture, forestry, water) • Measure the costs of environmental degradation under these different scenarios • Estimate the costs of the policy measures required to improve or maintain the natural resources and the benefits they bring • Analyse benefits and costs for different sectors, scenarios, policy measures and natural resources, expressed in relation to national priorities
5. Carry out the analysis	<ul style="list-style-type: none"> • Set up multidisciplinary teams to conduct studies; ensure the involvement of various stakeholders (e.g. in terms of gender, socio-economic status, location) • Use the economic analysis process as a tool to strengthen institutions and capacities (e.g. government, research institutes and civil society) to undertake economic analyses and maintain the ownership of the study and its results; examples of capacity-building approaches include the following: <ul style="list-style-type: none"> – Twinning approach (cooperation between national organizations and their equivalent in other countries or international institutions) – Formal training and on-the-job learning (see section 5.5)
6. Develop arguments and convey the messages	<ul style="list-style-type: none"> • Identify key messages and establish convincing arguments • Determine the best way (in terms of format, timing, circumstances) to present the outcomes of the study • Present a summary of evidence collected (perhaps two to four pages) and key messages that clearly explain the study's results and impact on the relevant policy process; a report that simply identifies the linkages between the environment and development priorities is insufficient • Do not wait for the complete results to present the evidence; more sophisticated evidence of linkages can be presented at a later stage

5.3 Influencing Policy Processes

The objective of this activity is to ensure optimal integration of poverty-environment issues into an overarching national or sector policy, with an eye to creating opportunities to effectively influence policy implementation—for example through the budgeting process and policy measures at the sector or subnational level (see chapter 6). In the shorter term, influencing a policy process translates into an increased awareness about the contribution of the environment to human well-being and pro-poor economic growth; improved cooperation among the finance, planning, sector and subnational bodies; and the inclusion of poverty-environment-related goals, targets and implementation strategies in policy documents.

Example: Poverty-Environment Issues in Uganda's Poverty Eradication Action Plan

The poverty-environment issues integrated in Uganda's Poverty Eradication Action Plan include the following:

- Energy, fuelwood and deforestation
- Soil erosion and stewardship in farming, agro-chemicals, integrated pest management and manures
- Land tenure
- Environmental health
- Education and awareness
- Transport
- Wetlands

Source: MFPED 2004.

Approach

The approach to influencing policy processes is both process oriented and analytical. It builds on previous activities, particularly the preliminary assessments (see sections 4.1 and 4.2) and the collection of country-specific evidence (see sections 5.1 and 5.2).

Engaging with the Institutional and Policy Process

To convince policymakers to include poverty-environment linkages in their work, it is necessary to understand this work, including the related steps and procedures, and gain access to the people involved.

- **Understanding the policy context and process.** In addition to grasping the overall context and poverty-environment linkages (see sections 4.1 and 4.2), having a good sense of the targeted policy process is also critical. This includes the timetable, the road map or steps in the process, the roles of the different actors and the intended outputs. It is also important to be informed of the sector goals contributing to long-term national priorities.
- **Becoming part of the process.** Influencing a policy process requires having a “seat at the table.” The earlier the engagement begins, the better the chances of influencing the outcome. Further, it is important to reach agreement among the relevant government actors (the institution

Examples: Ways to Become Part of the Process

- Having access to working groups and the drafting team to make the case for the environment
- Having access to sector and subnational institutions when preparing their contributions
- Having access to the environment working group developing the environmental content

leading the policy process and other participating sector and subnational institutions) on how poverty-environment mainstreaming fits with the timetable and road map of the targeted policy process. How the process works and how much access is agreed for poverty-environment mainstreaming will determine the scope of the mainstreaming effort and the timescale within which it can take place.

- **Responsibility and ownership of the process.** The institution leading the policy process should have responsibility for and ownership of poverty-environment mainstreaming. This means that the message would come, for example, from planning or finance bodies and not only from environmental actors. The lead institution can then make the necessary working arrangements and require the integration of poverty-environment linkages in the submissions of sector and subnational institutions.
- **Championing poverty-environment mainstreaming.** Policy processes involve numerous actors and mechanisms, such as working groups and drafting groups. Champions need to participate in each of these mechanisms and engage with influential individuals. Engagement should be both at a high, political level and at a technical level so as to convince and support the various actors to integrate poverty-environment linkages effectively into their work. Building partnerships with governmental, non-governmental and development actors can be instrumental in mobilizing more champions and ensuring successful mainstreaming (see chapter 3).

Example: Turning Senior Officials into Champions in Kenya

Two special visits to the arid northern part of Kenya by senior government and aid agency officials played a key role in converting these decision-makers, who had previously downplayed issues related to drylands, into ardent advocates of integrating the needs and concerns of the pastoral communities living in these areas into the country's poverty reduction strategy. Most of these officials, including the head of the PRSP Secretariat, had never before visited that region of the country. The visits served to increase the appreciation of treasury decision-makers of the poverty-environment dimensions of problems faced by pastoral communities and their interest in dryland issues in general. The visits were organized by the Pastoralists Thematic Group in collaboration with the PRSP Secretariat.

Source: UNDP, UNEP and GM 2007.

- **Coordination mechanisms.** Collaboration and coordination with actors concerned with other cross-cutting issues, such as gender or HIV/AIDS, are useful in creating synergies and avoiding competition. In addition, specialized bodies dealing with complex issues such as climate change need to be closely associated with the poverty-environment mainstreaming process.
- **Targeting communication.** It is important to know the target audience and the arguments most likely to convince them and to tailor messages accordingly. Effective communication requires having a clear and concise message and repeating it often (including in one-on-one meetings, presentations and participation in sector working groups). Short briefing papers targeting a specific audience, such as sector working groups, are more likely to get the message across than long reports. Media work, brief training sessions and field visits on poverty-environment issues can also form a part of this effort.

Applying Policy Analysis

A second axis of the approach consists of the tactical application of policy analysis in order to influence the policy process and increase the priority given to poverty-environment issues.

- **Adapting the analytical work to the process.** The results of country-specific evidence (see sections 5.1 and 5.2) and existing assessments or studies need to be customized for advocacy purposes or be used as contributions to the process. Further analytical work might be needed to show how integrating poverty-environment linkages contributes to the overall goals of the policy and to come up with specific targets or implementation strategies for inclusion in the policy document. In either case, the analytical work needs to be aligned with the policy process and its context. Often, it is not possible to carry out complex analyses, and simple analytical arguments or concrete examples can prove to be most effective.

In practice, the analytical work often takes the form of **consultation with experts**, including workshops of specialists and other stakeholders to discuss the relevance of poverty-environment issues to the targeted policy process and brainstorm on appropriate goals and implementation strategies to be included in the policy document. Such consultations should build on earlier work and help in the preparation of the environment sector's submissions to the policy process.

Given time and willingness to embark upon an approach that may be longer and more complex, interested stakeholders can carry out a **strategic environmental assessment** or make use of **integrated policymaking for sustainable development**.

A **strategic environmental assessment** refers to a range of analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the environment's overlapping linkages with economic and social considerations (OECD 2006a). Used in the context of poverty-environment mainstreaming, the assessment can also be useful in systematic review of a policy process or document to identify possible poverty-environment contributions and refine priorities accordingly (box 5.7).

Integrated policymaking for sustainable development is a process that incorporates the main objectives of sustainable development, economic development, poverty reduction and environmental protection into policy actions. Integrated policymaking for sustainable development goes beyond assessment and evaluation by extending to the whole process including agenda setting, policy formulation, decision-making, implementation and evaluation (UNEP 2008a). When the context allows, relevant elements of the framework can be applied to the poverty-environment mainstreaming effort.

- **Aligning the analytical approach with the policy framework.** The analytical approach needs to be aligned with the structure of the targeted policy document. For example, a policy document may be constructed around goals or pillars (e.g. sustainable growth, good governance, reduced vulnerability) or be based on priority sector programmes. The document can also include cross-cutting issues and present implementation strategies or targets.

Box 5.7 Using Strategic Environmental Assessment to Incorporate Poverty-Environment Linkages into Ghana's Poverty Reduction Strategy Processes

Background and objectives. Although Ghana's Poverty Reduction Strategy, published in February 2002, identified environmental degradation as a contributor to poverty, the strategy overall treated the environment as a sector matter only. Moreover, many of the policies put forward in the strategy relied on the use of natural resources in ways that held the potential for significant environmental damage.

The government decided to carry out a strategic environmental assessment as part of a poverty-environment mainstreaming effort for a revised Poverty Reduction Strategy. The assessment aimed to evaluate the environmental risks and opportunities associated with the strategy's policies and to identify appropriate measures to ensure that sound environmental management was the basis for pro-poor sustainable growth and poverty reduction in Ghana.

Approach. The assessment commenced in May 2003 and comprised two elements: a top-down assessment, with contributions from 23 ministries; and a bottom-up exploration at the district and regional levels. The ministries were exposed to strategic environmental assessment processes and guided on how to incorporate the environment in policy formulation.

Outcomes. Planning guidelines were revised to integrate poverty-environment linkages at the sector and district levels. Greater emphasis was placed on the use of the strategic environmental assessment to improve the processes by which policies are translated into budgets, programmes and activities. The assessment also changed the attitudes of officials responsible for planning and budgeting, encouraging them to seek win-win opportunities in integrating the environment in policies, plans and programmes. The 2006–2009 Poverty Reduction Strategy was drafted with direct input from the assessment team.

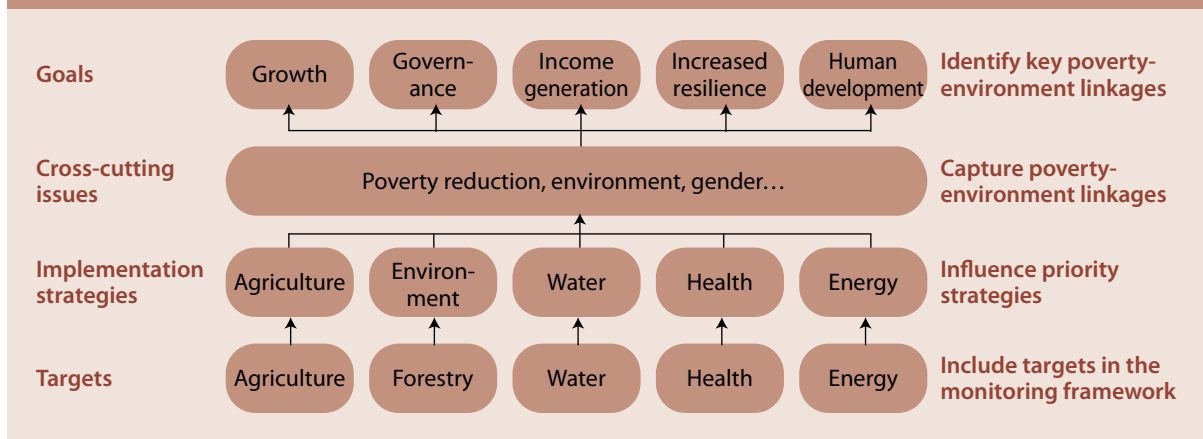
Source: OECD 2006a.

Figure 5.1 illustrates how poverty-environment issues can be included in a policy document at four levels:

1. Link poverty-environment issues to the main goals or pillars of the document and advocate having the environment as a goal or pillar of its own or as a major element of another goal or pillar (such as income generation or economic growth)
2. Capture the range of poverty-environment linkages relevant to the cross-cutting issues
3. Integrate these linkages into the sector priority implementation strategies
4. Work with sectors to identify relevant targets and ensure that poverty-environment targets are included in the monitoring framework (see section 6.1)

The environment is often regarded as a cross-cutting issue within a policy document. The strength of that approach is that environmental issues are understood to be relevant to all parts of the policy. However, the classification as cross-cutting may mean that the environment does not have an identifiable chapter or section within the doc-

Figure 5.1 Aligning the Analytical Approach with the Overall Policy Framework



ument. In this case, it may become “invisible” and may not be given priority in the budgeting process and implementation (see chapter 6).

Ideally, the structure of the policy document should be designed so that improved environmental management can be seen as both a cross-cutting issue and an identifiable goal in its own right.

Further Guidance: Steps and Examples

In working to influence a policy process, the most important tools are a strategic eye, tactical flexibility and persistent engagement. Boxes 5.8 and 5.9 present specific experiences with poverty-environment mainstreaming in Rwanda and Bangladesh, respectively. Table 5.2 gives an example of various entry points for poverty-environment mainstreaming within a policy process.

Successful mainstreaming of poverty-environment issues into the policy document paves the way for implementation of budget and policy measures at the national, sector and subnational levels. Even after poverty-environment linkages have been mainstreamed into a policy document, the work is far from over; engagement with all key actors must continue to ensure that the momentum built up through the policy process is sustained (see section 5.4 and chapter 6).

Box 5.8 Integrating Poverty-Environment Linkages into Rwanda's Economic Development and Poverty Reduction Strategy Process

Background. In January 2006, Rwanda launched the formulation of its second PRSP, the Economic Development and Poverty Reduction Strategy (EDPRS). A large number of stakeholders—including development actors, civil society and other interested groups—were invited from the onset to participate in the process. Environment was identified as a cross-cutting issue to be mainstreamed into the EDPRS, and there had been, in the recent past, much focus on the environment from the highest political level. However, capacity within the sector was quite low, and a great deal of technical support was needed for successful poverty-environment mainstreaming.

Poverty-environment champions engaging with the process. Throughout the formulation process, a team from Rwanda, with the help of the UNDP-UNEP PEI, supported all sectors involved. The work entailed participating in the development of and reviewing all sectors' logical frameworks that were the foundation for the EDPRS, contributing to the drafting process, preparing sections for selected chapters, engaging in monitoring and evaluation discussions and reviewing several drafts of the EDPRS. A key contribution was the submission of briefs to policymakers that made the case for the significance of the environment to human well-being and economic growth in the Rwandan context. The process was intensive and required continuous interaction with both sector actors and policymakers. Often, champions and PEI staff had to cover several meetings simultaneously. It proved effective to repeat the same messages in different settings, to prepare sector-specific tools, and to hold many one-on-one meetings to get messages across.

Key role of the planning and finance ministries. The ministries chaired the cross-cutting issues working group, which served as an important forum to make the case for prominently featuring poverty-environment issues in the EDPRS.

Making use of country-specific evidence. Many of the data used were collected specifically for this exercise through different assessments, including an integrated ecosystem assessment and an analysis of the economic costs of environmental degradation (see sections 5.1 and 5.2). From the economic analysis, two pieces of information had particular impact: the estimate of the cost to the government of using diesel in generating electricity (\$65,000 per day), due to the degradation of the Rugezi wetland and the resulting shortfall in hydroelectric power generation (EIU 2006); and the estimation of losses to the national economy attributable to soil erosion, valued at almost 2 per cent of GDP.

Outcome. In the final EDPRS, the environment is both a goal in its own right and a cross-cutting issue. The strategy includes several environmental priorities and activities for sectors, such as removal of import duties related to renewable energy and energy efficiency, a focus on high-end ecotourism and soil conservation measures (e.g. terracing and agroforestry technologies for sustainable land use) and water harvesting and collection techniques for agriculture.

This successful mainstreaming effort has also translated into a significant budget increase for the environment sector to ensure implementation of policy measures, including in the formulation of district-level development plans.

Box 5.9 Integrating Poverty-Environment Linkages into the PRSP Preparation Process in Bangladesh

Background. Preparing the first Bangladesh PRSP was a lengthy process, starting with initial work for the interim PRSP in 2002 and ending with the final PRSP in 2005. During that period, technical support was provided for environmental mainstreaming initially by the UK Department for International Development alone and then in concert with the Canadian International Development Agency and the World Bank.

Timing of technical support. Even though technical support was not provided until November 2002, which was after the final draft of the interim PRSP had already been produced, international support played an important role in helping make the case for poverty-environment mainstreaming and in the decision-making regarding the form poverty-environment issues should take within the PRSP.

The importance of personal and institutional relationships. The initiative began under the joint championship of the permanent secretary responsible for environmental affairs in the government of Bangladesh and the resident environmental adviser from the UK Department for International Development. Their first action was to arrange a workshop, which made it clear to department heads within the government that they were expected to support and promote the poverty-environment mainstreaming effort.

Responding to changing circumstances. The departure of the two officials mentioned above ultimately led to a loss of momentum. Moreover, the perception developed in government circles that this was a donor-driven initiative. Following the publication of the interim PRSP, responsibility for PRSP preparation was moved from the External Relations Department to the General Economic Division. This transfer led to a significant hiatus in the process, with a new set of authors and a change in the document's overall approach.

The importance of stakeholder engagement. The initiative included a range of activities designed to cement engagement between the proponents of the poverty-environment approach, the drafting team and government departments. These included establishing a team of local specialists, consultations, report preparation and—finally—submission of a summary to the Ministry of Environment.

Outcome. The result of this considerable effort was disappointing. In the final PRSP documents the environment was reduced to a supporting strategy, the first draft of which presented environmental concerns simply as the “green” and “brown” issues of conservation and pollution. Further representations by the donors achieved some improvements. In retrospect, it seemed difficult to get the fundamental message across that the livelihoods of the poor of Bangladesh are completely dependent on natural resources that have been degraded through inadequate management and that are highly vulnerable to natural hazards and climate change.

This outcome underscores the importance of using the concept of “poverty-environment linkages” rather than “environment” from the very first step of a mainstreaming initiative.

Source: Paul Driver, independent consultant, 2008.

Table 5.2 Poverty-Environment Mainstreaming in the Policy Development Process

Step	Recommended actions for poverty-environment mainstreaming
1. Understand the policy process	<ul style="list-style-type: none"> • Develop a comprehensive understanding of the policy process (e.g. timeline, road map, steps in the process, actors and intended outputs)
2. Become part of the process	<ul style="list-style-type: none"> • Try to get a “seat at the table” by becoming involved early on with the government and development actors in the policy preparation process • Seize opportunities to introduce the importance of poverty-environment linkages and speak about the importance of recognizing these linkages within the policy document • Explore the possibility of a donor providing funding specifically for poverty-environment linkages within the policy process
3. Establish committees and contribute to the policy document outline	<ul style="list-style-type: none"> • Identify key actors in the preparation of the basic outline of the policy document (e.g. the lead government body, a core drafting committee and other advisory committees) and engage with them to influence the structure of the policy document and the drafting process • Work with mainstreaming champions from key institutions • Make necessary working arrangements with the lead institution so that poverty-environment linkages are well featured; environment can be categorized as a cross-cutting issue or a sector in its own right • Establish cooperation and coordination mechanisms with actors working on other cross-cutting issues (e.g. gender, HIV/AIDS)
4. Influence policy launch workshop	<ul style="list-style-type: none"> • Use this opportunity to publicize the importance of poverty-environment integration into the policy document to obtain buy-in from government and other stakeholders; effective use of the media can enhance this effort • Identify non-governmental actors and their possible involvement in the process; ensure the inclusion of various stakeholder groups (of different ages, economic levels, genders) in the workshop
5. Work with sectors and other government institutions in preparing their contributions	<ul style="list-style-type: none"> • Work with sectors and other government institutions to determine their priorities and contributions to the process • Engage continuously with relevant (or all) sectors to ensure that the importance of poverty-environment linkages is translated into specific targets and implementation strategies included in their written contributions
6. Shape public consultations at the district level	<ul style="list-style-type: none"> • Raise public awareness of poverty-environment issues • Help communities identify the poverty-environment linkages relevant to their well-being and livelihoods
7. Contribute to the drafting of the policy document	<ul style="list-style-type: none"> • Engage directly with the drafting team to ensure that poverty-environment linkages are understood, correctly represented and properly integrated into the policy document by reviewing and commenting on drafts
8. Participate in public consultations and review workshops on the draft policy document	<ul style="list-style-type: none"> • Reinforce poverty-environment linkages at public consultations and review workshops to obtain buy-in from government bodies • Make use of partnerships with non-governmental actors and media
9. Contribute to final revision of the draft policy document	<ul style="list-style-type: none"> • Engage with the drafting team so that revisions correctly take into account poverty-environment linkages
10. Make use of the policy publication event/workshop	<ul style="list-style-type: none"> • Promote future action on the basis of the poverty-environment issues highlighted in the policy document

5.4 Developing and Costing Policy Measures

Policy documents include goals, targets and—usually—implementation strategies to achieve these. The next activity is to develop and cost specific policy measures in support of these goals, targets and strategies so that they can be included in national, sector and subnational budgets and so financing sources for their implementation can be identified (see section 6.2).

In this context, **measures** should be understood both as specific interventions supporting the implementation of policy documents as well as broader sector or public reforms addressing issues such as access to and ownership of land and citizen participation in the decision-making process. A wide array of policy measures is available to governments, from regulations to market-based instruments, as illustrated in table 5.3.

Table 5.3 Environmental Policy Measures, by Category

Command-and-control regulations	Direct provision by governments	Engaging the public and private sectors	Using markets	Creating markets
<ul style="list-style-type: none"> • Standards • Bans • Permits and quotas • Zoning • Liability • Legal redress • Flexible regulation 	<ul style="list-style-type: none"> • Environmental infrastructure • Eco-industrial zones or parks • National parks, protected areas and recreation facilities • Ecosystem rehabilitation 	<ul style="list-style-type: none"> • Public participation • Decentralization • Information disclosure • Eco-labelling • Voluntary agreements • Public-private partnerships 	<ul style="list-style-type: none"> • Removing perverse subsidies • Environmental taxes and charges • User charges • Deposit-refund systems • Targeted subsidies • Self-monitoring (such as ISO 14000 standards) 	<ul style="list-style-type: none"> • Property rights • Tradable permits and rights • Offset programmes • Green procurement • Environmental investment funds • Seed funds and incentives • Payment for ecosystem services

Source: UNEP 2007a.

Note: ISO: International Organization for Standardization.

The absence of prioritized and costed policy measures is one of the major reasons environmental priorities do not figure prominently in government budgets and thus are not implemented. If decision-makers are to be persuaded to mandate concrete measures for addressing poverty-environment issues, they must understand what such activities will cost and how cost-effective they are.

Approach

The approach to developing and costing policy measures requires working with government and non-governmental actors at various levels and understanding the various types of cost implications.

Working with Stakeholders at Various Levels

Whether environmental management is tackled as an individual goal or a cross-cutting issue in the policy document, specific budgeting and financing for poverty-environment measures need to be identified. Developing and costing policy measures should thus be closely coordinated with budget and financial specialists from the ministries of finance and planning, from sector ministries and from subnational bodies to ensure that the measures are aligned and included at various levels of budgeting at a later stage (see section 6.2).

In addition, a number of policy areas, such as water and sanitation, urban issues and natural resource management, are the responsibility of sector and subnational bodies. Such bodies thus have a central role to play when it comes to developing and costing the policy measures.

Examples: Policy Measures

- **Sustainable land and natural resource management:** nationwide land reform; revision of access rights, control and benefit-sharing of land, forests or natural resources; establishment of a governance and legal system for land management; community-based management; reforestation
- **Sustainable agriculture:** terracing; intercropping; more efficient use of fertilizer; more efficient irrigation and rainwater harvesting; improved storage and transportation
- **Disaster management:** early warning systems; risk management programmes; participatory preparedness programmes; pro-poor insurance schemes
- **Climate change adaptation:** strengthening capacities in climate projections; alternative grazing systems; forestation using adequate species; integrated coastal zone management
- **Sustainable energy:** renewable energy generation; energy efficiency measures; sustainable transport alternatives

Non-governmental and development actors with experience in economics and costing should be included in the process. For example, working with economists from in-country universities or research organizations can be advantageous.

Business and industry also have an important role to play. First, while many natural resources (e.g. fisheries or water) are public goods for which assigning property rights may be difficult, a number of services—such as clean water, sanitation and waste management—can be provided by private actors, as they are in some industrialized countries.

Second, even when such services are best provided by government (because of market failures or for reasons of fair access to basic services), business and industry are still the target of policy measures that set up economic and regulatory incentives (e.g. bans, standards and tradable permits and rights for fishing or emissions) to address certain poverty-environment issues (see table 5.3 and section 6.2).

In light of the many stakeholders involved, the process of developing and costing policy measures clearly benefits from a participatory approach that can help in forging linkages with policy and budgeting processes, partners and target audiences.

Understanding the Various Types of Cost Implications

When developing and costing policy measures, it is important to understand the different types of costs, including transitional, political, capital and operational.

- **For reform measures** (e.g. decentralization, removal of perverse subsidies), most of the financial costs are transitional and operational costs. These may encompass training of staff, recruitment and salary of new staff and enforcement and monitoring of the reform. While such reforms have a financial cost, the cost of building political momentum for change remains the principal challenge.
- **For management measures** such as protected areas, control or regulation, the main costs are operational to cover government salaries and other recurrent costs (e.g. transport and monitoring). Budgets for training and capacity activities may also be relevant.
- **For infrastructure measures**, such as water and sanitation and waste facilities, the costs are relatively straightforward in terms of capital and operational costs. Even if the capital and operational costs of these services can be partly covered by users (through water user charges, for example), governments often have to make the main capital investment.

Focusing only on investment needs can lead to judging success solely in terms of financial aspects. Finance is crucial, and the environment has suffered from a lack of investment, but relatively low-cost investments can have high pay-offs, such as in the area of water and sanitation. For example, investments in increasing access to water supply and sanitation yield very high rates of return, with benefit-cost ratios in the range of 4 to 14; this makes them extremely attractive from a social investment standpoint (PEP 2005; Hutton and Haller 2004).

Further Guidance: Steps and Example

Measures need to be identified, developed, prioritized and selected based on cost-effectiveness, benefit-cost ratios and pro-poor implications. A five-step approach is proposed in table 5.4, and an example of the steps taken to estimate the cost of a policy measure to assess water quality is provided in box 5.10.

The United Nations Millennium Project has developed a set of presentations and costing tools to support the MDG needs assessment methodology (UNDP n.d.). Sectors currently covered include health, education, energy, gender and water and sanitation. The presentations provide an overview to MDG-based planning and cover certain thematic areas. Each costing tool comes with a user guide and is tailored to a country's specific needs.

Table 5.4 Main Steps in Developing Policy Measures in Line with a Policy Document	
Step	Recommended actions for poverty-environment mainstreaming
1. Identify measures (during preparation of the policy document)	<ul style="list-style-type: none"> • Propose measures based on the goals, targets and implementation strategies identified in the policy document • Include generic policy measures in the policy document
2. Develop measures (following preparation of the policy document)	<ul style="list-style-type: none"> • Define more specific attributes of the policy measures • Identify the objectives of the measures • Define the scope, time frame and geographical coverage
3. Cost measures	<ul style="list-style-type: none"> • Cost each measure based on the attributes defined in the previous step; for example, the time frame of the measure enables accounting for factors such as the effects of inflation or possible currency devaluation • Establish how much is being spent on similar measures to validate the cost estimate • Set a variance of the estimated cost • Assess the absorptive capacity of the implementing agency
4. Prioritize measures	<ul style="list-style-type: none"> • Take into consideration pro-poor implications, benefit-cost ratios and cost-effectiveness • Consider existing and planned measures or activities of the government and development actors to identify opportunities for collaboration and avoid overlap; make use of donor coordination meetings to facilitate this step
5. Select measures	<ul style="list-style-type: none"> • Select the interventions that are most appropriate (e.g. policy or public reform or infrastructures) and most likely to succeed • Bear in mind cost-effectiveness, benefit-cost ratios and pro-poor implications • Mention these interventions in annexes of the PRSP, MDG strategy or similar policy document • Describe the specifics of the intervention, as far as they are developed, in sector strategies or plans and other materials such as programme documents • Develop a follow-up plan for the budgeting and implementation process

Box 5.10 Costing Process for an Intervention to Assess Water Quality

Identify possible interventions to improve water quality, e.g. protecting upstream catchment areas to reduce nutrient and pollution loads, wastewater treatment systems and monitoring of water quality according to standards.

Identify the scope, time frame and geographical coverage. Developing quantitative coverage targets for each measure will help ensure that the measure will be achieved. For example, countries may need to specify the share of urban wastewater that needs to undergo treatment to meet minimum water quality and human well-being standards.

Estimate the costs. The resource envelope needed is estimated by answering such questions as the following:

- What are the costs of protecting catchment areas?
- How much wastewater needs to undergo treatment to meet minimum water quality standards? What are the unit costs of treating wastewater?
- How often should water quality be monitored? How much does this cost?

Answering these questions enables estimation of total financial resource needs and their distribution over time. For example, if developing quality standards and building the capacity to enforce them entails large start-up costs, then more resources (for the selected intervention areas) will be needed at the beginning of the project.

Check and discuss the results. Cost estimates can be validated by checking the results of the costing exercise against those obtained in other countries with similar socio-economic and environmental situations. This also helps in interpreting the variance of the estimated cost. Finally, the absorptive capacity of the implementing agency for the measure should be discussed.

5.5 Strengthening Institutions and Capacities: Learning by Doing

This activity is aimed at strengthening institutions and capacities in a tactical manner with a view to fostering poverty-environment mainstreaming over the long term.

Approach

The approach to strengthening institutions and capacities consists of making use of the various steps in the mainstreaming process to raise the level of awareness and provide hands-on practical experience to interested stakeholders.

In doing so, it is important to target agencies with responsibility for the main policy process with implications for poverty and environment and to ensure that policy measures are taken forward once the policy process is complete.

A wide range of approaches, to be adapted to each particular context, can be used to leverage opportunities that arise throughout the process. In general, it is recommended that different approaches be combined. For example, technical support can be complemented by exchange visits (box 5.11) or preceded by a formal training (box 5.12) and followed up with on-the-job learning and guidance. Technical support can build on both interdisciplinary teams and twinning (cooperation between national organizations and their equivalents in other countries) to improve quality, national content and ownership as well as access to state-of-the-art expertise.

Box 5.11 Exchange Visits: United Republic of Tanzania to Uganda; Uganda to Rwanda

South-South cooperation in the form of study visits has yielded fresh perspectives and learning for participants.

Officials from the United Republic of Tanzania looked to the Ugandan experience to inform their own poverty reduction strategy (MKUKUTA) development process. The officials made a visit to Uganda to learn how it revised its Poverty Eradication Action Plan, particularly the role of its Environment and Natural Resources Group. The United Republic of Tanzania built on this experience when establishing its own Environment Working Group.

Later, a Uganda delegation went on a mission to Rwanda to learn from the latter's experience of mainstreaming poverty-environment issues into national development planning processes. Rwanda recently completed its Economic Development and Poverty Reduction Strategy, into which poverty-environment linkages were successfully mainstreamed. At the time of the visit, Uganda was beginning the process of reviewing its Poverty Eradication Action Plan. The following were among the key observations of the study visit:

- When the environment is treated as both an individual sector and a cross-cutting issue in the national planning strategy, there is a strong basis for integrating poverty-environment linkages throughout the strategy.
- An active role on the part of the Ministry of Finance and Economic Planning, the ministry leading the EDPRS process, was critical in integrating poverty-environment linkages into the plan across sectors.
- The process required persistent participation of environment technical officers at its various stages, including awareness-raising and capacity-building of sectors.
- High-level political support, strong institutions and a culture of law-abiding behaviour in Rwanda have been instrumental in promoting environmentally sustainable practices, as evidenced by successful enforcement of a ban on plastic bags.

Sources: UNDP, UNEP and GM 2007; Government of Uganda 2008.

It is essential to allocate sufficient human resources for the day-to-day work needed to coordinate the initiative. A team consisting of a manager, a technical adviser (international or national) and an administrative assistant who are dedicated to the effort on a full-time basis has proven to be successful for this task in the context of the PEI. It is critical that the team be an integral part of the government entity leading the effort, such as the ministry of finance or planning.

Including a technical adviser on the team yielded very positive results in Kenya, Rwanda and the United Republic of Tanzania. The technical adviser contributes to institutional and capacity strengthening in several ways, including the following:

Box 5.12 Role of Formal Training in Influencing Policy Processes: Burkina Faso and Kenya

Burkina Faso. Burkina Faso hired a team from Harvard University to train members of the Environment and Natural Resource working groups on negotiation in preparation for their participation in the Poverty Reduction Strategy preparation process.

Kenya. In Kenya, organizations including OXFAM, Action Aid and the Arid Lands Resource Management Programme sponsored members of the Pastoralists Thematic Group under the PRSP process to attend a special course on PRSP processes at the Institute of Development Studies in the United Kingdom. The training gave the group much-needed confidence and the requisite knowledge to comprehend and deal with the technical and professional challenges of PRSP formulation. Moreover, the strategic location of the Arid Lands Resource Management Programme within the Office of the President of Kenya enabled the participants to obtain access to key policymaking organs within government.

Source: UNDP, UNEP and GM 2007.

- Providing on-the-job technical advice in the area of poverty-environment issues
- Providing politically neutral inputs to the process, including in terms of targeted messages and communication
- Sharing knowledge on specific analytical tools related to poverty-environment issues

Although staff turnover can be a problem in the short term, establishing a poverty-environment mainstreaming team is a necessary step for longer-term institutional and capacity strengthening.

Table 5.5 presents a variety of approaches for ensuring institutional and capacity strengthening.

Table 5.5 Approaches to Institutional and Capacity Strengthening: Learning by Doing

Approach	Challenges	Opportunities
On-the-job learning	<ul style="list-style-type: none"> • High staff turnover • Staff have multiple priorities and duties • May mean undertaking a limited administrative reform while a systemwide public sector reform might be needed 	<ul style="list-style-type: none"> • Establishing a dedicated poverty-environment mainstreaming team brings multiple advantages • Quality or environmental management systems focused on learning by doing (e.g. ISO 9000 and 14000 standards) can foster continuous improvement for poverty-environment mainstreaming • Can be applied to all types of skills and competencies
Interdisciplinary teams (e.g. environment, sociology, economics, gender, political science)	<ul style="list-style-type: none"> • Different disciplines usually do not “speak the same language” • Competition might exist among different disciplines • Interdisciplinary teams can take more time and resources to be set up and managed 	<ul style="list-style-type: none"> • Involving policymakers in the design, implementation and sharing of the results of the integrated ecosystem assessment and economic analysis improves the quality and impact of such studies • Experience-sharing and learning with actors working on other cross-cutting issues, such as gender or HIV/AIDS, allows for faster progress on the learning curve • Interdisciplinary teams strengthen interpersonal skills • Interdisciplinary teams improve study quality
Working with non-governmental actors including communities	<ul style="list-style-type: none"> • Some actors may lack basic capacities to participate in the process • Involving different groups at the community level requires time and resources 	<ul style="list-style-type: none"> • Involving national non-governmental actors (e.g. academia and research institutes) in the design, implementation and sharing of the results of the integrated ecosystem assessment and economic analysis improves the content and the quality of such studies • Drawing on the experiences and knowledge of indigenous peoples, marginalized communities, women and citizens facilitates the ability to better take into account the poverty dimension and improves national ownership of the effort
Twinning	<ul style="list-style-type: none"> • Can take more time to set up and manage • Can lead to tensions among the collaborating organizations 	<ul style="list-style-type: none"> • Allows for South-South or North-South cooperation • Can lead to long-term partnerships • Provides access to state-of-the-art expertise from around the world • Strengthens interpersonal skills
Formal training	<ul style="list-style-type: none"> • Often lack follow-up and guidance after completion • Can be theoretical and not allow for application of concepts to real cases relevant to the trainees 	<ul style="list-style-type: none"> • Highly suitable for technical subjects such as integrated ecosystem assessment or climate change
Exchange visits	<ul style="list-style-type: none"> • May lack follow-up and guidance after completion 	<ul style="list-style-type: none"> • Allow for South-South cooperation • Strengthen interpersonal skills
Technical support	<ul style="list-style-type: none"> • May lack follow-up and guidance after the assignment is completed 	<ul style="list-style-type: none"> • Provides access to state-of-the-art expertise from around the world • Technical experts can bring a politically neutral perspective to the effort • Reinforces on-the-job learning

Note: ISO: International Organization for Standardization.

Further Guidance: Key Opportunities

A summary of the main opportunities for institutional and capacity strengthening during the activities of a mainstreaming effort discussed thus far is presented in table 5.6.

Table 5.6 Opportunities for Institutional and Capacity Strengthening in Mainstreaming Poverty-Environment Linkages into Policy Processes

Step	Opportunities
1. Collect country-specific evidence through integrated ecosystem assessments (see section 5.1)	<ul style="list-style-type: none"> • Involve policymakers and national non-governmental actors (e.g. academia and research institutes) in the design, implementation and sharing of the results of the integrated ecosystem assessment • Promote a twinning approach with government and international non-governmental actors (e.g. academia, NGOs and research institutes) • Draw on the experience and knowledge of indigenous peoples, marginalized communities, women and citizens • Foster an interdisciplinary team that brings together a range of experts including those in environment, sociology, economics, gender and political science • Share the results with relevant government commissions and independent entities on e.g. planning, government performance
2. Collect country-specific evidence through economic analyses (see section 5.2)	<ul style="list-style-type: none"> • Involve policymakers and national non-governmental actors (e.g. academia and research institutes) in the design, implementation and sharing of the results of the economic analysis • Promote a twinning approach with government and international non-governmental actors (e.g. academia, NGOs and research institutes) • Increase knowledge on various types of economic analyses available and their impacts • Increase awareness of the environment's contribution to human well-being and pro-poor economic growth
3. Influence the policy process (see section 5.3)	<ul style="list-style-type: none"> • Increase awareness about poverty-environment issues, including results from integrated ecosystem assessments and economic analyses • Promote experience-sharing and learning with actors working on other cross-cutting issues, such as gender or HIV/AIDS • Promote experience-sharing and learning with development actors, sectors and other stakeholders, including civil society "watchdogs" • Strengthen capacities for advocacy and communication (e.g. drafting policy briefs, presentation skills) • Acquire experience in using a strategic environmental assessment and integrated policymaking for sustainable development
4. Develop and cost policy measures (see section 5.4)	<ul style="list-style-type: none"> • Increase knowledge on the types of policy measures that are available and how to select the most appropriate ones • Increase knowledge on costing methodologies and tools while ensuring equal attention to quantifying the likely benefits • Promote experience-sharing and learning with development actors, sectors and other stakeholders

Table 5.7 Summary: What Does “Mainstreaming into Policy Processes” Encompass?

Achievement	Examples
Country-specific scientific evidence, developed through integrated ecosystem assessments	<ul style="list-style-type: none"> • <i>Nature’s Benefits in Kenya: An Atlas of Ecosystems and Human Well-Being</i> (WRI 2007)
Country-specific economic evidence, demonstrating the contribution of the environment to human well-being and pro-poor economic growth	<ul style="list-style-type: none"> • <i>Economic Analysis of Natural Resource Management in Rwanda</i> (UNDP-UNEP PEI Rwanda 2006a)
High awareness and understanding of poverty-environment issues at various levels	<ul style="list-style-type: none"> • <i>Poverty and Environment</i> newsletter (Government of United Republic of Tanzania 2005b, 2006)
Collaboration and partnerships at the country level	<ul style="list-style-type: none"> • Mainstreaming effort co-led by planning and environmental ministries
Environmental actors fully part of the policy process	<ul style="list-style-type: none"> • Environmental sector working group part of the policy process
Poverty-environment issues integrated in policy documents	<ul style="list-style-type: none"> • <i>Integrating Sustainability into PRSPs: The Case of Uganda</i> (DFID 2000)
Policy measures developed and costed	<ul style="list-style-type: none"> • Environmental fiscal reform ready to be launched
Institutions and capacities strengthened through learning by doing and tactical capacity-building	<ul style="list-style-type: none"> • Country exchanges (e.g. Uganda and Rwanda, Uganda and United Republic of Tanzania)
Involvement of stakeholders and development actors	<ul style="list-style-type: none"> • Media covering the issue • Non-governmental actors formally part of the policy process • Collaboration with national research institutes on poverty-environment mainstreaming