

ASIAN DEVELOPMENT BANK

THE ASIAN DEVELOPMENT BANK'S

ENVIRONMENT POLICY

(Working Paper)

February 2001

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PART I: THE NEED FOR AN ENVIRONMENT POLICY

A. Background

1. Preamble

1. The Asian Development Bank (ADB) addresses environmental protection and conservation needs of its developing member countries (DMCs) by integrating environmental considerations into its regional, country, and project-level operations. The mechanics of such integration are described in the *Guidelines on Operational Procedures – Environmental Considerations in Bank Operations* (first issued 1991, revised January 1997). The 1991 Guidelines resulted in the formal adoption of environmental impact assessment (EIA) for ADB financed projects. The 1997 version took into account the inclusion of “environment” as one of the ADB’s strategic development objectives. New directions and developments in ADB and the Asia-Pacific region dictate a reorientation of ADB’s environmental objectives and program, in particular, alignment with the ADB’s Poverty Reduction Strategy (1999), Long-term Strategic Framework (LTSF, 2000), as well as the medium-term focus of ADF-8 agreements (2000). In addition, the ADB’s lending operations have shifted in the last few years from a focus on investment projects to policy reforms – conventional EIA is not designed to address such policy-based lending and the ADB has redesigned its business practices which require adaptation of environmental review and planning processes. Finally, external scrutiny of ADB programs and practices has substantially increased, in particular by international and local non-governmental organizations (NGOs). This scrutiny demands a clear-cut definition of ADB’s environmental policy.

2. ***The principal environmental policy challenges for the ADB are to assist DMCs (i) ensure that environmental resources on which the poor depend for their livelihoods are conserved, (ii) integrate environmental objectives into the economic development process, and (iii) bring about institutional change, to ensure accelerated flow of resources for environmental improvement. These are the policy problems sought to be addressed by the ADB’s environment policy. A medium term Action Plan (2001-05), accordingly (i) proposes strengthening environmental assessment processes and capacities, and implementation of environmental protection measures in the ADB, (ii) promotes more intensive and effective integration of environmental considerations in sectoral policy dialogue with DMCs, (iii) recommends priorities for investment and technical assistance in relation to environmental conservation for poverty alleviation, and (iv) identifies specific areas of capacity building for DMCs in relation to environmental protection. The policy relates both to environment as a cross-cutting issue in ADB operations, and for realization of environmental protection as a component of the long-term core area of intervention of sustainable economic growth. The policy recognizes that while legal frameworks for environmental management are essential, the key is effective implementation of policy and mitigation measures. The environment policy would not only guide ADB activities, but would be a tool of advocacy for reform of environmental policy and institutions in the DMCs. The ADBs environment policy has a strong foundation in formal studies of: the region’s environmental problems; ADBs experience with its environmental operations; normative bases of environmental policy making; principles underpinning international environmental law; and the genesis of environmental problems.***¹

¹ A bibliography [will be] [is] furnished.

3. The environment policy also provides the rationale for ADB's environmental assessment requirements, and underscores the need for consistency between the environment policy and the environment-related provisions in other ADB sectoral and crosscutting policies. The policy delineates the appropriate role of the ADB in international environmental treaties and furnishes the basis for identification of specific components of program priorities. Together with themes for policy dialogue, strengthening of environmental assessment requirements, and implementation of environmental protection measures in ADB operations, they comprise the **Medium-Term Action Plan (2001-05)**.

4. *The Medium-Term Action Plan will be pursued by the ADB in its TA and loan operations, and policy dialogue. Where relevant, elements of the Action Plan may also be the subject of (sub)regional and national policy studies, capacity building, and collaboration with other bi-/multilateral development agencies.*

5. **Sustainable Development:** The Environment Policy should also be seen in the context of ADBs efforts to realize sustainable development in Asia-Pacific. Under the rubric of sustainable development, environmental protection is organically linked to well-being and social justice in a broad sense, both within and across generations. The LTSF and ADBs cross-cutting policies and strategies on poverty alleviation, gender and development, indigenous peoples, involuntary resettlement, governance, capacity building, and environment, together with its sectoral policies and strategies, e.g. energy, forestry, agriculture, water resources, etc., constitute a unified, synergistic approach to different facets of sustainable development.

Box 1: The concept of sustainable development

The concept of sustainable development was tentatively set out in the Report of the World Commission on Environment and Development, 1987 as: "*a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations*". While there remain divergence of views on the notion of sustainable development on both conceptual grounds and on how to realize it in practice, there is convergence on three foundational aspirations: First, that human beings should be able to enjoy a decent quality of life; second, that humanity should become capable of respecting the finiteness of the biosphere; and third, that neither the aspiration for the good life nor the recognition of biophysical limits should preclude the search for greater justice in the world (Sachs, 1999). Accordingly, the idea of sustainable development comprises concerns for human welfare, ecological integrity, and social justice and equity.

The Rio Declaration, Agenda 21, the Conventions on Climate Change and Biodiversity, and the Statement on Forestry Principles, adopted at the Earth Summit at Rio in 1992, sought to give practical shape to the idea of sustainable development. Several further principles, besides policy directions, and commitments of countries, were elaborated in these agreements. The ADBs environment policy draws extensively on these sources in respect of the key operational principles, program priorities, and themes for policy dialogue.

6. **Globalization:** Among the major driving forces in today's world for change in economic, social, and governance structures, besides the local, regional, and global environment, is the complex of integrative policies coordinated by treaty across countries known as "globalization." While globalization holds the promise of accelerated economic growth across all countries over time as comparative advantage is realized, in the short-run, there may be severe economic dislocations, in which the poor may suffer the most. Further, even as the enhanced economic growth is realized, environmental problems, including pollution, greenhouse gas emissions, biodiversity loss, and depletion of soil, freshwater, and fisheries, may be aggravated manifold. There is little ground for optimism that regulatory regimes and institutions will evolve sufficiently of their own accord to meet these challenges, particularly, as DMCs compete to attract capital investment. The ADBs environment policy, accordingly, addresses both the needs of enhancing institutional capacities for environmental management and policy making in its DMCs, as well as protecting the natural resources on which the poor depend for their livelihoods, and reducing pollution, which adversely affects their health.

Box 2: Globalization Concerns

Notwithstanding near unanimity among economists that realizing comparative advantage through liberalization of international trade and capital flows will yield gains for all countries over time, the public debate on international economic integration is highly contentious. The "price" of free trade is that international markets wield greater power over national economic policies, and distribution of wealth within and across countries. "*In a fully integrated global economy, wages would be set in Shenzhen, the price of capital determined in New York, and tax rates set in Cayman Islands*" (Rodrik, 1998), a prospect that is unsettling to many. Moreover, moves by interest groups in OECD countries to decree by international treaty convergence in environmental (and labor) standards across countries, which may stall realization of comparative advantage, have aroused alarm in developing countries. The major concerns about globalization are as follows:

Globalization exacerbates inequality within countries: Specialization of economies in terms of their respective comparative advantage requires restructuring of the national economies, and in most cases is likely to have distributive consequences. In the short-term these may arise from adjustment costs, and in the long-term as a permanent change in relative factor prices. In particular, these may impact the poor in developing countries permanently. If the poor are further marginalized, their dependence on natural resources for their livelihoods will increase.

Global governance structures are inadequate to deal with globalization: Markets are increasingly international in scope, while governments remain national. Governments face many constraints in this situation. In particular, even as the economy grows, they are constrained from raising fiscal revenues, including for health-care, education, environmental protection, and alleviation of income poverty.

Globalization predisposes developing countries to externally induced economic shocks: East Asian economies, for example, suffered from sudden withdrawal of portfolio investments by foreign investors, aggravating poverty, and sharply reducing the value of their domestic currencies. In this situation the poor become more dependent on natural resources, while at the same time, exports based on unsustainable exploitation of natural resources also gain in competitiveness. Both factors enhance environmental degradation.

2. ADB's Assistance to Developing Member Countries for Environmental Protection

[To be prepared]

- Loans and TAs with environmental objectives since 1985:[a partial list covering 1995-1999 is furnished in Appendix 2]
- Summary of evaluation studies: lessons learned

3. Key Environmental Concerns: Regional and Global

7. The Emerging Asia study (1997), and the Asian Environment Outlook (2000) (AEO) presented an alarming picture of the state of the environment and natural resources in the Asian continent, home to more than one-half of the world's population. In the preceding 30 years, marked in several countries by among the highest rates of economic growth ever achieved anywhere, Asia lost half its forest cover, together with countless unique animal and plant species. A third of its agricultural land was degraded. Fish stocks halved. The region had the largest number of heavily polluted cities. Its rivers and lakes were among the most polluted. The environmental degradation was widespread, including in the rapidly growing East Asian subregion, the transitional economies of Central Asia with their tragic legacy of central planning's neglect of the environment, as well as in (then) slow growing South Asia, in which poverty remained crushing and endemic.

8. While the Emerging Asia and AEO studies affirmed that Asia is the world's most polluted and degraded region, such degradation has occurred unevenly across the continent, and Asia does not score the worst on every environmental parameter. *The level and rapidity of environmental degradation raises serious concerns about the sustainability of Asia's economic growth. Even more importantly, as poverty and environmental degradation are elements of a spiral of causation, positive as well as negative, it points to the need to orient development efforts towards enhancing the environmental resources available to the poor.* A summary of the findings on the extent of environmental degradation (including global concerns) is given in Appendix 1. The key environmental concerns identified include: urban air pollution; indoor air pollution; water pollution; municipal, toxic and hazardous waste; land degradation; deforestation; biodiversity loss; coastal, marine and freshwater aquatic resources; and climate change.

9. The Emerging Asia and AEO studies also noted that the genesis of Asia's environmental degradation lay in two kinds of policy errors. One, that environmental protection was not a priority of policymakers, in ADB's developing member countries (DMCs) who adopted a "grow now, clean up later" approach, neglecting the fact that this would simply result in much larger costs overall to society, and would also exacerbate poverty. Two, that when governments did adopt environmental regulation, they simply repeated the approach, and mistakes, of the developed market economies in the latter's early phase of environmental regulation, by adopting stringent standards which could not be monitored or enforced, and rigid policy instruments which generally neglected incentives for compliance. These policy errors were compounded by weak enforcement of environmental laws and regulations, owing to low budgets of government agencies entrusted with environmental management, lack of technically qualified staff, and oftentimes, a pervasive culture of corruption in public institutions.

4. The ADB's Institutional Evolution for the Environment

10. Since its inception in 1966, the ADB has been responsive to environmental concerns. In January 1980, the Board discussed a paper titled: *Environmental Considerations in Bank Operations*, and recommended that environmental professionals be recruited to help ADB determine the appropriate pace at which environmental considerations should be introduced in its operations. At that time the Board did not expect that the ADBs environmental activities would concentrate on "environmental projects" per-se, but that traditional projects should have environmental components or regulatory safeguards to minimize environmental damage.

11. Subsequently, ADB activities concentrated on (i) promoting environmental awareness among ADB staff; (ii) reviewing ADB projects to ensure that all potentially significant environmental impacts were identified, appropriate measures taken to avoid adverse impacts, and where possible, the projects enhanced the environment; and (iii) acting as a regional Resource Center. A Board review of the ADBs environmental operations in December 1985 identified the major areas where DMCs need assistance as: (i) to increase awareness of the need to recognize the importance of environmental and natural resources constraints at the national level; (ii) strengthening national and line agency institutions dealing with environment and enforcement of environmental laws and regulations; and (iii) promoting general public awareness of environmental matters and ensuring environmental programs are adequately funded and that inter-departmental coordination on environmental matters is improved.

12. In February 1987, the Board again reviewed the ADBs environmental operations, and considered proposals for future activities. The latter included: (i) integration of environmental and natural resources planning and management into country economic and sector work; (ii) greater attention to sociological aspects of economic development projects; (iii) involvement of NGOs in the project cycle; (iv) attention to ecologically sensitive areas during project formulation and processing; (v) strengthening environmental legislation and administration; and in-house/DMC staff training.

13. Following the Brundtland Commission² report in 1987, which recommended that environmental management should be an integral part of economic planning, ADB created an environmental unit to review the environmental aspects of its projects, raising awareness on environmental matters, and building institutions. In 1990 this unit was upgraded to the Office of the Environment, which, in the 1995 reorganization of ADB's internal structure, became part of the integrated Office of Environment and Social Development (OESD). This Office ensures, among its various functions, that environmental concerns are properly taken into account in ADB's various operations, including project and program lending, from the start of the planning and design cycle. This process is formalized in ADB's Operations Manual. Additionally, OESD formulates and implements technical assistance for strengthening environmental management in ADB's DMCs.

14. In 1991, the ADB started a process of *Strategic Planning*, i.e. to periodically examine its role, identify its strengths and weaknesses, anticipate changes in its region and the world and respond to them, set out a medium-term strategic agenda, and list its operational priorities. **Poverty Alleviation has now been adopted as ADB's Overarching Objective.**³ The Long-term Strategic Framework adopted in December 2000 identifies sustainable economic growth,

² World Commission on Environment and Development, United Nations, 1987.

³ *Fighting Poverty in Asia and the Pacific: The Poverty Reduction Strategy of the Asian Development Bank*, ADB Board R-Paper, October 1999.

inclusive social development, and governance for effective policies and institutions as the Core Areas of Intervention; and promoting the role of the private sector in development, and regional cooperation and integration for development, as Crosscutting Themes. Environmental sustainability is a constituent of sustainable economic growth. Country Strategy and Programs (CSP) prepared for 5 year periods through the participation of and extensive consultation with all DMC stakeholders will set priorities considered to be most effective in reducing poverty, and will form the basis of ADB's activities in each DMC.⁴

5. Environmental Policies and Strategies of Other MDBs

[Under preparation]

B. The Causes of Environmental Degradation in DMCs

15. The relationships between poverty, gender disparities, population growth, and environmental impacts have been the subject of research, as well as speculation, at least since Thomas Malthus' *Essay on Population*. It is hard to disentangle cause and effect in these relationships, but overall, there is now consensus that high levels of poverty, total fertility rate, low status of women, and environmental degradation are strongly linked, and reinforce each other. The following account of current understanding of these links points both to the identified program priorities, as well as the themes of ADB's environmental policy dialogue with its DMCs, included in the Medium-Term Action Plan. It would also help reach consistency in approach between ADB's medium-term environmental Action Plan, and interventions for poverty reduction, gender and development, population, human development, besides economic growth.

16. **Insights from economics:** Institutional failures, referring to both market and policy failures, are identified by economists as the link between economic growth and "excessive"⁵ loss of environmental resources, including industry, urban, and energy related pollution, as well as loss of forests and soil resources. In this view, environmental degradation stems from the fact that the adverse impacts of environmental degradation are primarily experienced by third parties, without cost to the agents responsible for the damage. Accordingly, the economists' solution to environmental degradation lies in clarifying property rights over the resources, so that the costs of external impacts are visited on the polluter, i.e., "*internalization of externalities*".⁶ This approach may also be embodied in policy instruments⁷ which furnish appropriate incentives to polluters and others responsible for environmental degradation to modify their behavior towards conserving environmental resources, and enable environmental protection to any given standard to be accomplished at least cost to society. However, the traditional approach has been to rely on command and control based measures, which do not provide strong incentives to desist from environmental degradation, and have generally proved ineffective and costly, both to comply with and to enforce.⁸ Another kind of policy failure is the use of fiscal instruments, such as subsidies on energy use, which are damaging to the environment since they (unintentionally) provide incentives for inefficient use of polluting inputs, such as fossil fuels.

⁴ Appendix 2 furnishes a brief account of the institutional evolution in DMCs for environmental protection.

⁵ i.e., meaning "inefficient" in the sense of the Kaldor norm of economic efficiency.

⁶ In this approach, actual environmental impacts may still be experienced by third parties, but at an "efficient" level.

⁷ Broad classes of such incentives based policy instruments are pollution taxes and tradeable permits for limiting pollution emissions, and royalties or license fees for natural resources. Each of them conveys a "price" of the environmental resource in question to the user.

⁸ On the other hand, incentives based instruments generally require intensive monitoring, which may limit their use, for example, to large scale point sources of pollution.

17. **Environmental degradation causes poverty:** Environmental degradation, in turn, is a major factor in enhancing poverty, particularly among the rural poor, when such degradation impacts soil fertility, quantity and quality of freshwater, air quality, fisheries, and forests. The dependence of poor, rural societies on these natural resources is self-evident. If the impacts on the environmental resource base are neglected, an erroneous picture of levels of living is obtained from simple estimates of money income. The loss of the environmental resource base can result in certain groups of people being made destitute, even as on average, the economy grows. Further, urban environmental degradation, through lack of (or inappropriate) waste treatment and sanitation, and industrial and transport related pollution, adversely impacts air and water quality, which impairs the health of the urban poor. This in turn, affects employment, and thus, earnings, besides schooling, and enhances gender inequalities⁹, all of which perpetuate poverty.

18. **“Poverty is the worst polluter”:** Conversely, *poverty itself can strongly accentuate environmental degradation*, even without economic growth, given that institutional failures persist. For the poor, several environmental resources are complementary in production and consumption to other commodities (e.g., water in relation to agricultural production, fuelwood in relation to consumption of food), while a number of environmental resources are a source of income or food (e.g., fisheries, non-timber forest produce), particularly in times of economic distress. This is frequently a source of cumulative causation, where poverty, gender inequalities, and environmental degradation mutually reinforce one another.

**Box 3: Traditional biomass cookstoves:
a cycle of poverty, gender disadvantage, and environmental degradation**

In several DMCs, high levels of indoor air-pollution, a major cause of respiratory disease among poor women, is attributed to the use of traditional biomass cookstoves. The poor are unable to afford improved cookstoves, which would sharply reduce indoor air pollution. Moreover, gender disparities within such households ensure that even were money to be available, it would be spent on other things of greater interest to the men-folk. The continued use of inefficient cookstoves also results in loss of forests, which in turn, endangers water and biodiversity resources, and places rural livelihoods at risk. Inefficient cookstoves, also require more labor time by women in gathering fuelwood, which impairs their ability to take care of children.

19. **Loss of resilience:** In particular, the poor are particularly vulnerable to loss of *resilience* in ecosystems on which they depend for their livelihoods. Resilience is the capacity of an ecosystem to recover from disturbances, shocks, and surprises. If a system loses resilience, it can flip to a wholly different (and unwelcome) state when subjected to even a small disturbance.¹⁰ Of various environmental attributes, biodiversity in particular, furnishes resilience to ecosystems. Accordingly, resource management practices which adversely impact

⁹ For example, as money for medical treatment is preferentially allocated within households towards treatment of the wage earning men-folk.

¹⁰ Thus, a conventional economic view, that there are unending substitution possibilities among various resources, so that society may move smoothly from one resource base to another as each is degraded, is not consistent with fundamental ecological facts.

biodiversity¹¹ enhance the risk to ecosystems. The carrying capacity of ecosystems are not fixed, but change continually, in response to changes in external conditions, or natural evolution, and such change is not easy to predict. Thus, economic policies which apply fixed rules so as to achieve constant yields (for example of livestock, or fuelwood, or fish) may lead to reduction in a ecosystems carrying capacity, and hence resilience. Large reductions in resilience may mean that the ecosystem on which livelihoods are based breaks down, causing distress.¹²

20. **Poverty, population, and environmental degradation:** Poverty and environmental degradation are also reinforced by population growth. The causes of high fertility rates are complex, and demographic research has not yet yielded a comprehensive understanding of fertility behavior. Nevertheless, it is now well established that fertility behavior depends not only on the methods of contraception available to couples, but also their demand for children. The latter, in turn, depends on a complex interaction of diverse societal factors, which vary across cultures, and even within a given culture, at various stages of development.

21. Several studies have shown that traditionally, village commons – water sources, grazing grounds, local forests, etc. have been protected by local communities from overexploitation through norms, which may include various penalties for disallowed behavior. This form of communal ownership and control enabled households in semi-arid regions to pool their risks. These norms, may, however, be degraded through the very process of development, including urbanization and increased mobility. In this situation, when households produce many children, and parents are able to pass on some of the costs of rearing them to the local community by relying on the weakened norms of community control, a cumulative process of overexploitation of the community owned resources can start. If such access to the community resources under weakened norms continues, parents continue to produce too many children, further increasing pressure on the environmental resources. Children born in such situations would be reared in poverty, suffer from malnutrition, and remain illiterate.

22. **The effects of demographic shifts:** [to be prepared]

23. **The effects of economic growth:** Economic growth has a bivalent relationship to environmental degradation. On the one hand, growth may result in “excessive” environmental degradation, but typically only in the presence of policy and institutional failures, including market failures arising from the absence of, or weakly enforced property rights over environmental resources which furnish the material inputs for increased output, or sinks for increased pollution. On the other, economic growth permits improvement in environmental quality by making available the necessary resources for environmental investments. For example, protection of the population against water-borne disease in a number of countries has become possible only with economic growth which provided the investment needed for sanitation, waste treatment, and protected water supply. Further, increasing per-capita incomes lead to increasing demand for environmental services.

24. Linkages to themes for ADB activities?????

¹¹ For example, monoculture cropping, or livestock grazing practices which preferentially degrade particular grassland species.

¹² This is the likely process by which, for example, several Asian subregions have experienced desertification, loss of fisheries, and deforestation.

PART II: THE ADB'S ENVIRONMENT POLICY

C. Principles Underlying the ADB's Environment Policy

25. The foundation of ADB's environment policy is a set of principles which provide the overall rationale for conflating poverty alleviation, environmental protection, gender issues, and economic growth in ADB operations, besides appropriate design of procedures.¹³ They are grouped into norms relating to processes of environmental governance (or public decision making), and norms concerned with the desired outcomes of environmental actions. The norms relate both to the ADB's own activities, and the practices intended to be promoted in DMCs through ADB operations.

1. Operational Norms Related to Processes of Environmental Governance

- (a) **Access to information:** refers to the legal and administrative set-up under which interested parties, on their own initiative may obtain information from environmental authorities in a broad sense. The ADB requires circulation of Summary EIAs and IEEs of environmentally sensitive projects to the Board and general public at least 120 days prior to Board consideration of the loan, and in all other cases to the general public when the Summary IEE is circulated to the Board¹⁴. The ADB recommends that its DMCs should institutionalize similar requirements.
- (b) **Public participation:** refers to involvement of stakeholders, in particular the potentially impacted local communities, in preparation of projects. Such participation should commence early in the project cycle so that various project design alternatives can be adequately explored. The ADB currently seeks public participation in preparation of its loan projects in relation to environmental protection measures for environmentally sensitive projects,¹⁵ besides involuntary resettlement¹⁶, and indigenous peoples¹⁷. The ADB recommends that its DMCs also institutionalize similar arrangements.
- (c) **Access to proceedings for redress of environmental problems:** Access to such proceedings is a *sine-qua-non* of environmental governance. The ADB has adopted a policy on the Inspection Function, by means of which parties who claim to be adversely impacted by a ADB activity, which may include environmental damage from such activity, may request an independent review of whether or not the ADB has followed its own policies and procedures in respect of that activity. The ADB recommends that its DMCs also institutionalize similar arrangements.
- (d) **Environmental review procedures should embody key elements of "due process" in public governance:** In other words, they should embody functional independence of the concerned agency, transparency, opportunities for all stakeholders to represent their interests, and give reasons for the decisions. These help ensure that environmental reviews are not biased towards the interests of one or a particular group of stakeholders, are not arbitrary, and provide reasonable

¹³ Appendix 3 furnishes in matrix form the implications of ADB's Poverty Alleviation Strategy for its Environment Policy.

¹⁴ Excepting in specified cases where confidentiality rules would be violated.

¹⁵ GP:20 para 9

¹⁶ R179-95, para 34(v)

¹⁷ Working Paper on Indigenous Peoples, October 1994, para 40 (i).

opportunity to all stakeholders to ensure that their interests are duly considered. They should also be time-bound, as this is conducive to reducing project risk and enhancing economic efficiency. While the ADB's own environmental review processes generally reflect this principle, such requirements will be further strengthened in its revised environmental guidelines. The ADB would also recommend that the environmental review processes of its DMCs embody this principle.

- (e) **Compliance with specified environmental protection measures must be monitored; and compliance must be verifiable by stakeholders:** This norm would facilitate monitoring or audit by independent agencies, in addition to government agencies and project proponents, and making monitoring records publicly available. Failures of compliance may result in penalties, which should be scaled to provide incentives for compliance. Accordingly, the ADB's Environmental Assessment requirements for its loan projects mandate environmental monitoring, and the Medium-Term Action Plan (below) provides for strengthening such monitoring. The ADB commends this principle for adoption by its DMCs.

2. Operational Norms Related to Outcomes of Environmental Actions

- (a) **Environmental assessment and management plans should aim to ensure that there is no (significant) unmitigated environmental harm to (innocent) third parties:** This principle is at the core of the current environmental assessment practices of ADB's operations. Realizing this norm requires that all potential adverse external impacts of activities should be diligently researched within the bounds of resources, time, and practicality, and all adverse impacts thus identified mitigated through design of the activity itself, and as part of its implementation, to essentially "no significant harm" levels. ADB will recommend this principle to its DMCs for embodying in their environmental assessment, monitoring, and compliance regimes.
- (b) **No significant transboundary effects:** This principle, an extension of the principle of no significant harm to innocent third parties to the domain of international relations, is the cardinal principle of international environmental law. ADB will seek to ensure that its projects do not have any significant cross-border adverse environmental impacts. It will also exhort DMCs to abide by this principle in relation to their own development plans and projects.
- (c) **The poor to be categorically better-off:** The ADB would seek to ensure that its activities result in categorical improvement of the well-being of the poor. Change in well-being may not be reckoned solely in terms of monetary incomes or willingness to pay/compensation demanded for the change, but by broader measures of capability comprising health, nutrition, shelter, education, skills, environmental quality or access to critical natural resources, empowerment, awareness, besides money incomes. The ADB will commend this approach to its DMCs in relation to their own sustainable development policies.
- (d) **Environmental mitigation measures should be least-cost:** This norm, based on considerations of economic efficiency, would require a comprehensive reckoning of the cost of mitigation measures, i.e. the monetary value of benefits of mitigation

should be netted out of the direct costs of mitigation while ranking different mitigation options on the basis of cost. The ADB will seek to realize this principle in project design, and also commend this principle to its DMCs in relation to their own environmental policies.

- (e) **Polluter pays principle (PPP):** The PPP (which is sometimes alternatively expressed as “beneficiary pays”) requires full reimbursement of damage to the victim, and meeting the full cost of mitigation measures, in each case by the polluter. The principle is consistent with economic efficiency and the “no significant harm to innocent third parties” requirement. The ADB will seek to embody this principle in the design of its activities, and also commend its adoption by its DMCs.
- (f) **Rents of publicly held natural resources to accrue for public purposes:** This norm would require that access to publicly owned natural resources are granted by procedures embodying rules of fair, open competition. This conduces to economic efficiency and perceived fairness, and would enhance fiscal revenues for public purposes, including poverty alleviation and environmental protection. “Public” may refer to any non-privately held agency, i.e. community groups, local governments, and national governments. The ADB would seek to realize this principle in its activities, and also facilitate its adoption by its DMCs.
- (g) **Precautionary principle:** This principle requires that if an action or policy entails a threat of serious environmental harm, lack of full scientific certainty should not block adoption of cost-effective measures to prevent the harm in question. The ADB would, accordingly, seek to ensure that proposed projects in DMCs are designed to prevent any serious environmental risk materializing. It would also commend this principle to its DMCs in relation to their own activities for sustainable development.
- (h) **Compliance with treaty requirements and general international standards:** The legal obligation of states to meet their treaty obligations is a fundamental premise of international order, and a general legal principle. Similarly, states must comply with established general principles of international law. The ADB would, accordingly, insist on projects funded by it in DMCs being fully consistent with the requirements of applicable treaties to which the DMC is a party, or any applicable general or customary international standards or criteria. It would also facilitate and/or assist its DMCs in meeting such legal obligations.
- (i) **Facilitating technology transfer:** In light of commitments in multilateral environmental agreements on transfer of technology, the international community at large is under an international legal obligation to ease and/or facilitate developing countries’ access to environmentally sound technologies (EST), although this obligation does not supercede existing intellectual property rights. Accordingly, whenever feasible, ADB should promote the transfer of EST, in its operations in developing countries.

D. The Rationale of Environmental Assessment Requirements of ADB Operations

26. The ADB’s project, sector, and program loans require assessment of their potential environmental impacts, in terms of procedures outlined above. In this section, we outline the rationale for the *substantive requirements of such assessment*.

27. *Loan Classification:* The ADB's environmental assessment reports are intended to be accessible to interested parties, and the general public.¹⁸ Loan projects are classified into Category A (with potentially serious environmental impacts), Category B (with potentially significant environmental impacts), and Category C (unlikely to have significant environmental impacts). An initial environmental examination (IEE) is required of Category B projects, and an environmental impact analysis (EIA), requiring greater depth of analysis, of Category A projects. A new category D addresses environmental assessment issues specific to indirect investment projects to be implemented through financial intermediaries by credit lines and/or equity investment. The classification scheme helps in conserving resources for project preparation, by ensuring that the greatest effort is deployed on projects with potentially the most significant adverse environmental impacts. While projects are tentatively classified at initial screening of anticipated potential environmental impacts on the basis of a concept document, the classification is subject to change as more detailed information becomes available as preparation proceeds.

28. *Indirect Impacts:* A particular challenge is that of identifying and mitigating potential adverse indirect impacts of a project. The distinction between direct and indirect environmental impacts is not clear-cut. Conceptually, one may consider the environmental impacts of all project activities within the *defined project boundaries* as "direct", and all environmental impacts of entities with an economic (suppliers or customers) or physical (such as successive links in transport systems) nexus to the project as "indirect". Alternatively, they may refer to induced, or secondary and tertiary impacts arising where an individual project stimulates other development with environmental impacts,¹⁹ or synergistic and additive impacts of several small projects²⁰ where the combined effect is greater than those predicted for each. In practice, methodological, data, and resource (including time) limitations do not permit an exhaustive exploration of all potential indirect adverse environmental impacts, since, clearly, the actual numbers of such entities may be huge in any given project situation. In such cases, a pragmatic test for distinguishing between direct and indirect impacts of a given project is to ask whether the impacts are a direct consequence of making the investment and implementing the project or whether further investments have to follow in upstream and downstream activities for the impacts to materialize. Mitigation measures for such identified environmental impacts should be identified, and responsibility for their implementation established.

29. *Environmental Standards:* The "no (significant) harm to (innocent) third parties" requirement is met at least in terms of national environmental standards (ambient and emissions), and compliance with other national environmental requirements. However, in some cases, professional assessment or public participation may indicate that they are inadequate (or alternatively, unnecessarily ambitious). In such situations, the ADB may dialogue with the Government and project proponents on more appropriate requirements for the project consistent with international guidelines. The agreed enhanced requirements may then be covenanted in the loan agreements. *The "no (significant) harm to (innocent) third parties" requirement also ensures that it would not be acceptable for a project to result in some palpable environmental harm to third parties if otherwise the economic benefits of the project exceeds the costs (including that of the environmental harm).* The precautionary principle may imply even stricter criteria for project selection, and one issue is how to embody it in EIA practice. A simple

¹⁸ The summary IEE/EIA are required to be circulated worldwide, through the depository library system, and are increasingly, being made available on the Internet. On request, the full IEE/EIA are to be provided.

¹⁹ For example, when a highway project induces adjacent real-estate development.

²⁰ For example, when a large number of agricultural projects together deplete or pollute groundwater.

economic efficiency approach may lead to counterintuitive outcomes, especially if significant risk to natural resources for livelihoods of the poor, or life-support systems, or other environmental resources embodying “incommensurable values” are involved.

30. The “*least-cost*” choice of mitigation options implies that the savings in environmental resources must be taken into account, and not only the tangible costs of mitigation. This has the effect of promoting the use of “best available technology” in most instances, which may result in environmental performance being better than the legal standard.

31. *Institutional requirements and environmental monitoring* requirements provide assurance that the environmental protection measures will be carried out on a continuing basis as set forth in the project plan, and that any unanticipated environmental impacts will be detected and mitigated. Monitoring by independent entities, environmental audits, and making environmental monitoring and audit records publicly available in real time help ensure fidelity to the environmental management plan, and reduces the scope for corruption in enforcement of environmental regulations.

32. *Public participation*: For category A projects it is required that *public consultations* be carried out by the project proponents, after adequate public notification, and provision of information on the project design and the (draft) EIA. It is preferable that such public participation be carried out as early as possible in the project cycle so that the views of the public are taken into account adequately in the design of the project and/or mitigation measures. Further, under the “*120 Day Rule*” in the case of both public and private sector “environmentally sensitive” category A and selected category B projects, the summary EIA or IEE is required to be circulated to the ADB’s Board and the general public at least 120 days before Board consideration of the loan. This provides further opportunity to persons potentially affected by a project’s environmental impacts to represent their interests.²¹

Box 4: Public Participation: Concept and Practice.

[To be prepared]

33. *Government Review* Apart from ADB’s review of IEE/EIAs, a normal Government environmental regulatory requirement is that IEE/EIA of projects are also reviewed by the environmental organization (EO) of an appropriate level of Government, prior to approval of the project. It is necessary that the concerned EO have a transparent and time-bound process for conducting such reviews, including providing opportunity for public representations. The EO should also, in substance and perception, be independent both of the project proponent and

²¹ The Environment Division of the ADB reviews the environmental assessment, and a finding that it is in good order is recorded in the RRP.

potentially impacted third parties, and the basis of its findings must be properly explained.²² The ADB is concerned that the EO should have adequate capacity and independence to undertake this task, and technical assistance may be provided to ensure them.

34. *Program Loans*: The ADB requires that the environmental impacts of policy and institutional covenants of program loans be evaluated, and appropriate mitigation measures identified, and appropriately incorporated as further loan covenants. While several methodologies exist in respect of such policy environmental assessment, frequently, data, time, and resource limitations make it difficult to conduct full-scale policy environmental assessment in a program loan. In such cases, a matrix of potential environmental impacts of each policy or institutional covenant, together with appropriate mitigation measures, is prepared, with a (qualitative) indication of the likely order of magnitude of each impact, and brief reasons for the judgement. The principles followed in preparing the matrix include: diligent screening of potential adverse (or benign) environmental impacts (including indirect impacts); mitigation of potential adverse impacts to the levels of “no significant harm to third parties”; polluter pays for mitigation measures; least-cost mitigation; and ensuring the institutional basis of implementing mitigation measures, including environmental monitoring.

35. *Country Strategy and Programs (CSPs)* should be evaluated for their potential environmental impacts by methods of Strategic Environmental Assessment (SEA). SEA refers to environmental assessment of policies, plans, or programs (PPP), i.e. of interventions other than traditional investment projects. “SEA is a systematic process for evaluating the environmental consequences of proposed policy, plan, or program initiatives in order to ensure that they are fully included and appropriately addressed at the earliest appropriate stage of decision-making on par with economic and social considerations”. There are three main benefits of SEA: (a) translating sustainability concepts into policy-making, i.e. incorporating environmental considerations into economic, fiscal, and trade policies; (b) strengthening and supporting project EIA, i.e., to clarify and establish an integrated policy framework of goals, objectives, and principles against which project EIA can be conducted effectively; and (c) addressing cumulative, large-scale, and indirect impacts of policies, plans, and programs.

²² The requirement of independence of the EO, right of intervention by potentially impacted (third) parties, transparency of the review process, and the giving of reasons, are *sine qua non* of the IEE/EIA regime. They are also cardinal principles of the rule of law, affirming that IEE/EIA processes, albeit based on technical knowledge and scientific data, are nevertheless quasi-judicial proceedings. Transparency and the right of intervention by stakeholders are also important in eliminating corruption in the review process.

Box 5: What is “Strategic Environmental Assessment”?

Strategic Environmental Assessment (SEA) deals with interventions with a *strategic component*, i.e. they deal with concepts and not with particular activities in terms of location or technical design. *Sector EA*, involves examining potential environmental implications of the fullest range of potential projects proposed for the sector, and can, unlike most project EIA, influence project selection. *Regional EA*, on the other hand, is the process of determining the regional environmental implications of *multi-sector developments* in a defined geographical area over a certain time period. The spatial area to be investigated may be established on the basis of ecosystem boundaries, or alternatively, administrative jurisdictions. In respect of *EA of policies*, however, there is no consensus that EA can be easily applied, reflecting the less tangible and abstract factors reflecting policy decisions. Policy EA, may, accordingly, require approaches which are quite different from those adopted for plans and programs.

The term SEA (is taken to) cover other terms such as sector EA, regional EA, and policy EA. Programmatic EA, however, has tended to consist of the environmental assessment of groups of projects that have technical, or geographical similarities, and the analyses have tended to be site-specific, rather than strategic, and there is difference of opinion on whether it should be classified as a type of SEA.

E. ADB’s Sectoral and Crosscutting Policies

36. ADB’s policies and strategies are designed to furnish detailed operational guidance to realize the Strategic Development Objectives in particular sectors and processes. All ADB assistance to its DMCs, must be consistent with these ADB policies and strategies. In line with ADB’s strategic focus on environmental concerns, and its perceived role in the post-UNCED era, the ADB has revised several of its policies and strategies in different sectors. Further, in order to ensure greater transparency and public participation in its operations, as well as to provide an independent mode of redress in case of negligence or error which may harm persons, the ADB has formulated policies and procedures in several cross-cutting areas. While these provisions, of course, apply to all of ADB’s operations, they apply with particular relevance to its environmental related activities, which almost by definition, involve third-party impacts. Additionally, the ADB has revised its approaches to its private sector operations, support for regional cooperation, and capacity building, all of which are important for addressing environmental concerns.

37. Appendix 3 presents in matrix form, by way of an example, the implications of ADB’s Poverty Alleviation Strategy on its environment operations. On adoption of ADB’s Environment Policy, future revisions of the sectoral and cross-cutting policies will explicitly relate to the environment policy.

[A new Appendix showing consistency between environment policy and other cross-cutting and sectoral policies is being prepared]

38. **Promoting education, public awareness, and training:** One key area where inter-sectoral efforts need further strengthening is promoting education, public awareness, and training (EPAT) for sustainable development. These are processes by which people, particularly the poor, can reach their fullest potential and enhance their well-being. Both formal and non-formal education are essential to changing people's attitudes, so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development for effective public participation in decision-making. Specific themes in EPAT for sustainable development that need to be addressed include:

- Assisting DMC governments to prepare or update national strategies for integrating sustainable development concerns into education at all levels. This may require setting up national advisory environmental education coordinating bodies with representation of various environmental, developmental, education, gender and other social development interests, including NGOs, to facilitate partnerships, and help mobilize resources.
- Assisting educational authorities, with help from CBOs or NGOs, to set up or strengthen pre-service or in-service training programs for teachers, administrators, and educational planners, as well as non-formal education, addressing the nature and methods of education for sustainable development.
- Assisting efforts to ensure that every school has the capacity to design environmental activity work-plans, with the participation of students and staff.

39. **Population and sustainable development:** A second key concern for strengthening inter sectoral efforts is population and sustainable development (PSD). Demographic trends have generally been recognized in national development plans as having critical influence on consumption patterns, production, lifestyles, and conservation of natural resources. However, more attention is needed to integrate demographic issues in policy formulation, planning, and decision-making. Specific themes in this respect that need to be addressed include:

- Identification of vulnerable groups, including the poor, whose changes in demographic structure may have specific impacts on sustainable development.
- Assessment of the national population carrying capacity in the context of security of livelihoods, with special attention to critical resources such as land, water, ecosystems, biodiversity, and pollution which impacts human health.
- Assessment of impacts of national demographic trends on traditional livelihoods, including of indigenous peoples and local communities, including changes in traditional natural resource use because of population pressures.
- Preparation and implementation of national population policies and programs that are consistent with national environment and development plans for sustainability; and are in keeping with women's rights, human dignity, and personal and societal values.

F. ADB's Role in International Environmental Agreements

40. The scope of ADB's mandate for environmental protection is comprehensive, and covers local, regional, and global environmental issues in terms of impact, and multisectoral in terms of cause. There are important synergies between environmental protection, and policy support; capacity building and governance for development management; creating/ strengthening productive capacity, infrastructure, and services; and regional cooperation. Thus in the last few years, ADB has selectively participated in international agreements, particularly in order to support its regional cooperative efforts.

41. Criteria have been developed for selecting international environmental agreements in which ADB may play a meaningful role, as opposed to proceeding *ad-hoc*. The number of candidate agreements is already large, is likely to increase over time, and identifying mutually consistent and rational criteria will screen out candidate agreements in respect of which ADB's efforts may be infructuous or duplicative of others' efforts. The criteria are:

- **ADB's own capacities in the relevant thematic area:** Over time, the ADB has built up expertise in different sectors and crosscutting themes. This is shown by, for example, in Appendix 4, that no matter that listed ADB projects did not necessarily seek to facilitate implementation of particular international environmental agreements, nevertheless, the broad themes implicit in each of the agreements listed were covered. The selection of international environmental agreements for providing focii for ADB operations should be limited to thematic areas in which the ADB has already acquired expertise, instead of trying to build capacities in new areas, which would require additional resources.
- **The agreements contemplate participation by MDBs:** In case of several agreements, MDBs in general are exhorted to provide assistance to developing countries meet their commitments in relation to the agreements. Even where particular agencies (e.g., GEF) are entrusted with specified tasks, MDBs may have recognized complementary roles. ADB participation should be limited to agreements which identify clear roles for MDBs, and seek their participation.
- **The identified roles may be realized by means of standard ADB modalities:** Particular roles visualized for MDBs may not be amenable to ADB's existing operational modalities.
- **Other MDBs in the field do not have a head-start over the ADB:** If particular opportunities arising from a given international environmental agreement have already been largely pre-empted by (an)other MDB(s), there may be little added value in the ADB pursuing it, unless the scale of the problem is so vast that there is room for many players.²³
- **The identified roles in respect of particular agreements are a priority for DMCs:** This criterion is in line with an overall "bottom-up" or "demand-driven" perspective of the ADB. The specific means of ascertaining that particular activities are a priority for DMCs would depend on the situation at hand.

²³ This may be the case with, for example, climate change and biodiversity conservation in the region.

42. The international environmental agreements which are consistent with these criteria are: Agenda 21, the Convention on Biodiversity, the Ramsar Convention, the Convention on Desertification, the Convention on Climate Change and its Kyoto Protocol, and the Basle Convention. In addition, these are regional agreements such as the South Pacific Regional Environment Programme (SPREP) Convention, which have been appropriately supported through standard ADB operational programs. Each of these agreements may furnish specific themes for environmental activities, i.e., loans and technical assistance, including those which help conserve environmental resources for the livelihoods and health of the poor. ADB is already formally involved in most of these international agreements. The ADB will, in the formulation of activities in line with the medium-term Action Plan, incorporate relevant commitments under, and opportunities from these international environmental agreements. These may also be pursued in collaboration with mechanisms or agencies which have special responsibilities for implementation of particular Agreements. Key provisions of these agreements are given in Appendix 5.

PART III: THE MEDIUM-TERM ENVIRONMENTAL ACTION PLAN (2001-2005)

43. The ADB's Medium-Term Environmental Action Plan is based on the discussion above in relation to identification of major environmental concerns, present understanding of causes of environmental degradation, operational norms for processes and outcomes, and commitments and provisions of key international environmental agreements. The Action Plan is presented below in relation to environment as a crosscutting theme in ADB operations, including policy dialogue, and realizing environmental protection as a component of sustainable economic growth, through investments and technical assistance.

G. Strengthening Environmental Assessment Procedures and Implementation of Environmental Protection Measures

44. This section details (a) measures for strengthening environmental assessment requirements and implementation of environmental protection measures, (b) program priorities, and (c) themes for policy dialogue, which together comprise the bases of the ADB's operations in relation to environmental protection.

1. ADB's Environmental Assessment Guidelines

45. ADB's environmental assessment requirements are based on extensive project-level experience in DMCs, and are generally adequate and appropriate for DMC application. The ADB operations, however, now include a broader range of financing mechanisms with a much stronger policy reform orientation. The ADB environmental assessment process was not designed for such operations and thus required some revision. In addition, new assessment tools and increased experience in ADB's environmental assessment process also justified revision of the guidelines. The ADB has taken practical steps in this regard. In particular, including significant strengthening of the mandatory requirements of information and analysis in IEE/EIAs of projects, and enhancement of EMPs. The ADB's crosscutting policies in respect of indigenous peoples, involuntary resettlement, regional cooperation, and confidentiality and disclosure are also relevant. Additionally, the ADB will strengthen its procedure for determining the environmental categorization of projects with a view to ensuring greater consistency and predictability, and taking fuller account of site and project specific information available at the categorization stage.

46. *Private sector operations*: There are some important differences between private and public sector projects in terms of capacity and resources that can be readily mobilized at the concept clearance stage. For example, a private sector Financial Institution (FI), unlike the public sector counterpart of a sector loan, may not have resources at the outset, prior to distributing available funds to subprojects. Another issue is that frequently, the conceptual design of a private sector project is at a late stage when it is submitted for environmental review by the ADB. The revised EA Guidelines address these issues, in part by introducing a new Environment Category D for indirect financing, and facilitation of environmental awareness in the private sector through promotion of due diligence, internationally recognized Environmental Management Systems (EMS), (e.g. ISO 14000), and Environmental Audits.

2. Strategic Environmental Assessment

47. As a means of ensuring that environmental sustainability concerns are identified and acted upon at the earliest stage of the policymaking and programming processes, the ADB will take practical measures to gradually institutionalize SEAs in the environmental assessment requirements of its activities. SEA will be applied on a selective basis when preparing country strategies and programs, sector strategies, and for review of sector loans and program loans.

3. Strengthening the implementation of environmental protection measures in ADB Operations

48. Most ADB-funded projects include EMPs and often the loan agreements include specific environmental covenants. In order to ensure implementation of EMPs for environmentally sensitive projects, including agreed upon monitoring, and compliance with relevant covenants, the ADB will take the following steps to ensure proper implementation of prescribed environmental mitigation measures of projects:

- Various procedures (details in Appendix 8) will be adopted to strengthen review of implementation of environmental protection measures and compliance with environmental covenants, particularly of category A and other ES projects. The staff concerned with project implementation, at headquarters and in the field, will receive necessary training.
- The Borrowers/EAs of Category A and other ES projects will be required to submit semi-annual reports on environmental management and monitoring, and this requirement will be reflected in the loan agreements.
- DFIs with weak understanding of environmental issues and which are financial intermediaries for environmentally sensitive projects will be provided training on EIA and encouraged to utilize retainer services of reputable environmental consultants.
- Estimates of cost of (significant) environmental mitigation measures must be reflected as a separate line item in project cost estimates. For civil works, bill of quantity should be properly computed.
- The tender documents must specify the requirements of environmental protection measures.

An environmental monitoring unit will be set up in the environment division and tasked with implementation of these measures. The ADB's Operations Manual and Project Administration Instructions (PAIs) will be amended to reflect these changes. The ADB's crosscutting policies in respect of indigenous peoples and involuntary resettlement are also relevant.

4. ADB Interventions for Realizing Environmental Objectives: Program Priorities:

[To be prepared: linking discussion of causes with program priorities]

H. Enhancing Environmental Protection Measures to Conserve Resources for the Livelihoods and Protect the Health of the Poor

49. In respect of each of the identified classes of environmental problems which are considered to be especially relevant to conservation of resources for the livelihoods of the region's poor, and in which the ADB is believed to have sufficient expertise and capacity, possible themes for ADB activities (loans and capacity building TAs) are identified. *These represent a menu of choices for ADB operations, and it is not the case that they must be pursued in all DMCs, or that they are immutable irrespective of context.*

1. Conservation of the Ecological Base of Rural Livelihoods, including Biodiversity Resources, and Sound Management of Biotechnology

50. Biological resources provide essential goods and services for rural livelihoods, including food, clothing, shelter, energy, and medicines. Biodiversity is also critical in maintaining the resilience of ecosystems, loss of which may place the livelihoods of the poor at risk from even small shocks to the ecosystem. Biotechnology promises to enhance living standards through development of better health care, enhanced food security through sustainable agricultural practices, sustainable methods of afforestation and reforestation, more efficient industrial processes, and detoxification of industrial wastes. However, various risks to ecosystems and human health are also perceived from genetically modified organisms (GMOs).

51. *Possible areas of loans operations include:* conservation and sustainable utilization of plant and animal genetic resources and dissemination of biotechnology for sustainable agriculture; integrated pest management; sustainable plant and animal nutrition; and strengthening rural microfinance institutions to facilitate spread of sustainable agriculture techniques.

52. *Possible areas of capacity building, including, where appropriate, as components of loan projects, include:* development of national strategies for biodiversity conservation and sustainable use of biodiversity and integrating them into national development strategies and plans; cooperation on issues related to conservation of, access to, and exchange of germ plasm; enhancing institutional capacities to promote multiple roles and functions of forests and vegetation; promoting legal instruments for the fair and equitable sharing of R&D involving biodiversity resources, and economic benefits from use of traditional methods and knowledge; promoting (sub)regional cooperation in enhancing scientific, economic, and policy understanding of biodiversity and its functions in ecosystems; strengthening risk assessment and management techniques for biotechnology; and technology transfer for biodiversity conservation.

53. The ADB's crosscutting and sectoral policies in respect of poverty alleviation, forests, fisheries, population, water resources, and energy are relevant. Among the selected international environmental agreements, Agenda 21, the biodiversity and Ramsar conventions, and the climate change convention and its Kyoto Protocol relate to this area.

2. Protection of Coastal and Marine Natural Resources

54. The region's coastal areas contain diverse and productive habitats, and are in general, densely populated. Coastal and marine resources are important for the livelihoods of the poor. Natural disasters, coastal erosion, and sea-level rise, to which the poor are extremely vulnerable, are major risks in coastal areas.

55. *Possible areas which may be addressed in loan operations include:* implementation of integrated coastal and marine management plans and programs; improvement of coastal human settlements, including housing, drinking water, and treatment of sewage, waste water, industrial solid wastes and effluents.

56. *Possible areas of capacity building, including, where appropriate, as components of loan projects, include:* strengthening human and institutional capacities in DMCs for integrated management and sustainable development of coastal and marine areas and their resources; preparation and implementation of land and water use and siting policies; preparation of coastal profiles identifying critical areas, including eroded zones, physical processes, development patterns, user conflicts, and management priorities; preparation of contingency plans for human induced (e.g., sea-level rise due to climate change, oil spills) and natural disasters (e.g. cyclones and tidal waves); integration of sectoral programs on sustainable development for settlements, agriculture, tourism, fishing, ports, and industries affecting the coastal area; surveys and inventories of biodiversity and endangered species; establishment of protected areas; and promotion of ESTs.

57. The ADB's crosscutting and sectoral policies in respect of poverty alleviation, water resources, and fisheries relate to this area. Similarly, the Agenda 21, and biodiversity and Ramsar conventions are also relevant.

2. Preventing Desertification and Soil Degradation

58. Desertification and soil degradation arise from a diversity of causes, including climatic variations and human activities, and in particular adversely impact the rural poor. The priority in combating desertification and soil degradation should be the implementation of preventive measures on land that is vulnerable to, but not yet appreciably degraded, although severely degraded areas should not be neglected.

59. *Possible areas which may be addressed in loan operations include:* accelerated afforestation and reforestation, including using drought resistant, fast growing native species, combined with community based agro-forestry schemes; implementing urgently direct corrective measures in moderately to severely desertified or alkali-saline drylands; promoting investment in forestry in drylands or alkali-saline lands through incentives and legislation; and promoting the development and use of energy sources which lessen dependence on fuelwood.

60. *Possible areas of capacity building, including, where appropriate, as components of loan projects, include:* identification of direct preventive measures in vulnerable drylands by way of improved land-use policies and practices, appropriate environmentally sound and economically

feasible agricultural and pastoral technologies, and improved management of soil and water resources; promoting improved land, water and crop management systems to combat salinization in irrigated croplands, stabilizing rainfed croplands, and introducing soil/crop management systems into practice; promoting participatory management of rangelands to meet needs of the rural poor and conservation; promoting *in-situ* protection and conservation of special ecological areas; and promoting local water users' groups to optimize local water resources management.

61. The ADB's cross-cutting and sectoral policies for poverty alleviation, water resources, forestry, and population are relevant. Similarly, Agenda 21, and the conventions on biodiversity and desertification relate to this area.

3. Reducing Local Air, Water, and Soil Pollution which Directly Impacts the Livelihoods and Health of the Poor

62. The poor are particularly vulnerable to pollution, which impacts their health, and in consequence their livelihoods. With increasing urbanization, such vulnerability will increase. An important focus of abating pollution is small and medium enterprises, which both provide employment to the urban poor, and expose them to pollution.

63. *Possible areas which may be addressed in loan operations include:* investments in sewage, waste water, and solid wastes treatment/disposal facilities, in particular for urban slums and SMEs; promoting appropriate, improved energy technologies for reduction of indoor and local air-pollution, including poor households, transportation systems, and SMEs; and promoting clean production technologies and management practices, in particular in SMEs.

64. *Possible areas of capacity building, including, where appropriate, as components of loan projects, include:* strengthening national capacities in R&D of ESTs, and adoption of measures to minimize waste; development of national programs to minimize waste generation, in particular in SMEs as part of overall development plans, and in the context of commitments under the Basle Convention; promoting R&D and transfer of energy efficient technologies, in particular in SMEs and urban transport; promoting appropriate energy efficiency and emissions standards in particular for SMEs; promotion of appropriate regulatory regimes for SMEs, including where feasible, incentives for pollution abatement and resource efficiency; and enhancing mechanisms to integrate transport planning strategies and urban and regional settlement planning strategies to reduce environmental impacts of transport.

65. The ADB's crosscutting and sectoral policies for poverty alleviation, water resources, energy, health, gender and development, and population are relevant. Similarly, Agenda 21, climate change convention, and the Basle convention relate to this area.

I. Leveraging Co/parallel Financing, in Particular from Specialized Mechanisms, and Promoting (sub)regional Cooperation.

66. Co/Parallel financing for loan operations may be realized from several specialized mechanisms including (i) Global Environment Facility, for grant/concessional co-finance in the areas of climate change, biodiversity conservation, and protection of international waters; (ii) the Global Mechanism of the Convention on Desertification, which is essentially a coordination mechanism for various financing channels for the objectives of the CCD; (iii) Trust Fund and Emergency Response fund of the Basle Convention on Toxic and Hazardous wastes; (iv) The Ramsar Small Grants Fund (SGF) established under the Convention (provides a maximum of

SF 40,000 per project) for projects in developing and transition countries; and (iv) Clean Development Mechanism of the Kyoto Protocol to leverage private sector investment in sustainable development projects which abate GHG. The ADB will consider the development of innovative financing modalities to access these mechanisms and facilitate private sector and NGOs participation. Brief descriptions of the mechanisms are furnished in Appendix 6. An account of ADB's cooperative arrangements with GEF is given in Appendix 7, while Appendix 8 lists the ADB/GEF projects accepted into the GEF Formal Pipeline to date.

67. *Opportunities for (sub)regional cooperation* may lie chiefly in capacity building for policymakers and technical experts, including the preparation of national action plans and investment project concepts. These may relate to the following areas: familiarization with SEA concepts (for policymakers) and training in SEA techniques (for experts); enhancing scientific, economic, and policy understanding of biodiversity in relation to poverty alleviation; promoting legal instruments for sharing benefits of biodiversity conservation and traditional knowledge; preparation of national and regional biodiversity inventories; preparation of land and water use and siting policies in relation to coastal and marine resources; preparation of coastal profiles; promotion of land, water and crop management to combat salinization in irrigated lands and conservation of shared surface and ground water resources; management techniques and technology evaluation for clean production; preparation of national inventories (and projections) of waste generation and national action plans for hazardous waste management; and integrating the planning of transportation systems in urban/regional planning to reduce environmental impacts. The ADB's crosscutting policy on regional cooperation relates to this area.

J. Performance-Based Allocation of ADF Resources

68. ADB has long recognized that the allocation of scarce ADF resources among borrowers should be based on needs and performance. ADB has designed a performance-based system keeping in mind concerns for objectivity and transparency, balanced by a reasonable degree of flexibility.²⁴

69. The Country Performance Assessment (CPA) system developed by the ADB, comprises criteria of (i) sustainable economic growth, (ii) socially inclusive development, and (iii) governance and public sector management. Sustainable economic growth, in turn, has components of macroeconomic management, structural policies, and environmental protection.

70. Environmental protection is gauged in terms of (i) DMCs environmental laws and institutions, and (ii) the presence of environmentally damaging subsidies. In each case, criteria are specified for performance levels ("poor", "average", and "strong"). The performance levels are evaluated by country data; however, there remains an irreducible subjective element in actual assignment of performance levels to countries. The evaluated performance levels are embedded in a broader formula which allocates shares of available ADF resources by eligible DMC.

K. Integrating Environmental Objectives in Policy Dialogue

71. Policy dialogue on environment and sustainable development will remain an important area of ADB operations. This is based on the recognition that cross-cutting and sectoral policy frameworks are key determinants in the way environment and natural resources are used. The

²⁴ Working Paper 9-00 of 2 November 2000.

objective will be to pursue better integration between environment and sectoral policies but also to ensure coherence among sectoral policies that impinge on environment. The instruments available to ADB include: (i) strengthening the knowledge base and capacity of DMCs to identify and implement policy options that promote positive environmental outcomes; (ii) enhancing the policy content of investment projects with particular attention to the incentive framework for environmental management; (iii) ensuring that appropriate attention is placed on addressing environmental opportunities in policy-based lending.

72. A number of themes for policy dialogue have been identified (Appendix 9) which focus on (i) institutional issues, such as integrated planning frameworks, decentralization of environmental responsibilities, and national accounting and budgeting processes; (ii) sectoral issues, such as financing modalities for urban environmental improvement, energy pricing, and public/private collaboration in pollution control; (iii) cross-sectoral resource management issues, such as river basin management of water resources, and integrated coastal zone management; (iv) poverty-environment issues, such as sustainable use and conservation of biodiversity, community based resource management to combat land degradation; and the role of traditional knowledge and livelihood systems. *These identified themes represent a menu of options for policy dialogue in relation to environmental protection. It is not intended that they should apply to all DMCs, or inflexibly without reference to context.*

L. Resource Implications

73. The implementation of the environment policy will have resource implications for the ADB. These would cover staffing, staff training, staff consultants and business travel, and are discussed briefly below.

74. ADB will need to build up its institutional capacity in implementing the elements of the environment policy. This can be done by increasing ADB's staff resources and by training of staff in the headquarters and in resident missions. The envisaged increase in lending for projects dealing with desertification, climate change, biodiversity, GEF and CDM will result in a net financial gain for the ADB. However, considering the current lack of skills available to ADB in these fields, the increased lending will additionally entail an equivalent of two person-years across ADB for project processing and implementation. Accordingly, this implies an increase in the associated costs for loan processing and review.

75. The implementation of the revised environmental assessment guidelines and the proposed institutionalization in ADB of the strategic environmental assessment combined with the expanded assistance for accessing GEF to Operational Departments is expected to entail an additional 1.5 person equivalent/year in the Environment Division. Ensuring better compliance monitoring of environmental protection measures during project implementation will require an equivalent of a half-person year inputs/year (national officers) in resident missions particularly in Bangladesh, India, Pakistan and PRC where there is substantial DFI lending. Bank-wide, project review during implementation is expected to have a minimal increase in total volume of business travel.

76. Current staff, as well as new staff, in the operational departments and in the resident mission will have to be trained in the implementation of the revised environmental assessment guidelines, environmental compliance monitoring, and strategic environmental assessment. To do this, support (equivalent to about one-fourth person-year) is needed from the Training and Resource Development Unit of ADB and from one support staff in ENVD.

77. Furthermore, the implementation of the revised environmental assessment guidelines will entail an estimated five percent increase in overall PPTA cost needed to improve the quality of the environmental assessment through increased participation by stakeholders, and improved cumulative impact assessment and analysis of indirect impacts. On the other hand, capacity building TA resources that may be necessary to maximize the impact of project loans with strong environment orientation discussed above will not entail more TA resources as this will be subsumed within the poverty reduction fund.

78. The integration of SEA into the country operational strategy will be initially conducted through the use of staff consultants. Given the average number of country operational strategy studies done every year, this will result in a 5 percent increase in staff consultants' budget across the ADB.

79. Updating and enhancements of relevant operational guidelines in respect of environmental protection would be necessary. This may be accomplished within the available budgetary resources.

Key Environmental Concerns

The following is a summary of the key environmental concerns, regional and global, presented in Emerging Asia and the Asian Environment Outlook.

Urban Air Pollution: The level of air pollution in Asia's cities is among the world's highest—suspended particulates which cause respiratory disease are generally twice the world average, and more than five times that in industrial countries. Lead emissions from vehicles, which cause blood poisoning and impaired mental development in children, are above safe levels. Further, concentrations of sulfur dioxide, which damages health, structures and crops (as acid rain), while still one-third of that in industrial countries, are nevertheless 50 percent higher than in other developing regions, Africa and Latin America. These levels of pollution substantially exceed the guidelines of the WHO, in particular for most of Asia's megacities. The principal victims are the poor who live in slums located in industrial districts. Efforts to improve air quality should focus on particulates in South Asia and PRC, lead in Southeast Asia, and sulfur dioxide in East Asia and eastern PRC.

Indoor Air Pollution: Indoor air pollution largely results from the use of biomass-based fuels in inefficient cookstoves for cooking and heating without adequate ventilation. One estimate is that indoor air pollution results in 500,000 deaths annually in India, and 700,000 in the PRC; overall, some 30% of lost disability adjusted life years (DALYs) due to major environmental risks arise from this cause.

Water Pollution: Asia's rivers typically have 4 times the world average level of suspended solids and 20 times OECD levels. The biological oxygen demand (BOD), a measure of organic pollution, is 1.4 times the world average, and 1.5 times OECD levels. In particular, fecal coliform levels, which indicate bacterial counts from human waste is 3 times the world average, and 50 times the WHO guidelines. Further, lead concentrations, which originate in industrial effluents, are 20 times higher than OECD countries. Across subregions, suspended solids are the highest in PRC, fecal coliforms the highest in India and Southeast Asia, lead is highest in Southeast Asia, and nitrates from fertilizer run-off the highest in South Asia. The main sources are untreated municipal sewage, industrial effluents, and run-off from urban and agricultural activity. In particular, failure to treat urban wastewater means that waters downstream of urban areas is highly polluted. Water pollution results in diarrheal disease, which leads to high levels of infant and child mortality, and long-term health impacts. It asymmetrically impacts the poor, who do not have access to protected water supply. Overall, some 42% of lost DALYs in Asia are due to water pollution and inadequate sanitation, making it the most important among the major environment related health risks..

Municipal and Industrial Solid Waste: Increasing urbanization and economic growth has led to sharp increase in the quantities of municipal and industrial solid waste generated in Asia. While municipalities in Asia spend 50-70 percent of their revenues on waste management, only 50-70 percent of urban dwellers receive any coverage, and the unserved residents are overwhelmingly the poor. Further, growing quantities of toxic and hazardous waste from factories, hospitals, and households are disposed off without proper safeguards. Inadequate management leads to disposal in open water, leaching into groundwater, air pollution from open burning, and spread of disease vectors such as insects and rodents. Risks from untreated or improperly disposed off hazardous and toxic waste, again impact the poor the most.

Land Degradation: Agricultural land is scarce in Asia, reckoned in per-capita terms. In 1992, Asia had only 0.3 ha of agricultural land per-capita, compared with 1.6 ha per capita for other

developing regions, and 1.4 ha per capita in OECD countries. Asia's soils are also generally of poor quality; less than 4 percent has no inherent cropping constraints, compared with 15 percent in Africa and 12 percent in Latin America. Deforestation, cultivation of steep slopes, poor drainage, and inadequate soil conservation has all contributed to severe soil degradation in Asia. Soil erosion is Asia's most serious natural resource problem, and is equally severe in Southeast Asia, South Asia, and PRC. Salinization and water logging, which render soil unfit for cropping are also acute: 130 million ha of Asian cropland largely in PRC, India, and Pakistan are affected due to poor irrigation and drainage practices. In the arid and semi-arid areas of South Asia, 63 million ha of rain-fed land, and 16 million ha of irrigated land have been lost to desertification. *Asia's rural poor are almost wholly dependent on agricultural land, and the degradation or loss of cropland by various means places them at serious risk of loss of livelihoods.*

Deforestation: Asia has less forest cover than the rest of the world in per-capita terms, just one-third the world average, but is losing it at the rate of one-percent a year. Deforestation can occur due to excessive fuelwood collection, logging, construction of infrastructure, especially roads and dams, or conversion of forest to other use, particularly agriculture. Desertification is believed to be largely responsible for increased desertification, soil erosion, flooding, biodiversity loss, drying up of rivers and streams, all of which affect the rural poor the most. A dramatic, recent example of deforestation was the loss of 1 million hectares of Indonesia's forests by fires in 1997; the resulting air pollution spread over 6 SE Asian countries affecting 70 million people.

Biodiversity Loss: Asia accounts for 40 percent of the world's species of flora and fauna, but with few exceptions, Asian countries have lost between 70-90 percent of their original wildlife habitats to agriculture, infrastructure, deforestation, and land degradation. Biodiversity loss may lead to loss of resilience in ecosystems, and place the poor who depend on these ecological resources at risk of loss of livelihood. On the other hand, access contracts for biodiversity and traditional knowledge of biodiversity use may yield significant resources for sustainable development.

Coastal, Marine, and Freshwater Aquatic Resources: Asia's coastal and marine fisheries, and mangrove and coral reefs are among the most diverse in the world. Around two-thirds of the world's coral reefs are in Asia. Freshwater ecosystems in Southeast Asia are among the world's largest and best developed. However, more than one-half of Asia's wetlands have been lost, and more than one-half of mangroves in the Indo-Malayan realm have been cleared. Most wetlands of international significance are threatened by hunting, drainage, pollution, destructive fishing practices, and conversion to other uses. Loss of fisheries and mangroves adversely impact the livelihoods of the poor.

Climate Change: Emissions of greenhouse gases (GHG), primarily but not exclusively due to fossil fuel use, leading to increased concentrations of GHG in the atmosphere, is believed to lead to global climate change, which may seriously disrupt human welfare. While the major sources of GHG so far are the developed countries, owing to their use of fossil fuels since the industrial revolution, several rapidly growing fossil fuel dependent Asian countries may in the next 20 years significantly increase their share in global emissions in the aggregate. On the other hand impacts of climate change, including sea-level rise, coral bleaching (which destroys fish habitats), changes in agricultural potentials, degradation of forests, accelerated desertification, increased range of vector borne disease, changes in precipitation, and enhanced frequency and severity of extreme weather events such as cyclones and droughts, will adversely impact people in developing countries, particularly the poor in Asia. Further, treaty

linked mechanisms, i.e., GEF and Clean Development Mechanism have the potential to yield large scale financial resources and technology transfers to DMCs to promote their sustainable development.

Institutional Evolution in DMCs for Environmental Protection

80. Prior to the 1970s, environmental concerns in DMCs were largely reflected in various laws dealing with nuisance, and laws for management of specific natural resources, e.g. forestry, fisheries, etc. The institutional set-up related directly to such laws, for example, nuisance, was dealt with police authorities; forestry conservation (and harvesting) by departments of forestry, etc. Following the 1972 Stockholm Conference on Environment and Development, several DMCs passed umbrella legislation for pollution prevention and conservation of natural resources. They also set up dedicated agencies for environmental protection at the central and local government levels. However, for the most part, the environment protection agencies lacked technical capacity, functional independence, and did not involve civil society in preparation and implementation of their programs, or allowed such intervention in their processes. The inclusion of civil society may help initiate consensus to promote responsible environmental behavior by different actors.

81. In many DMCs, environmental protection agencies face a variety of constraints in carrying out their mandates. Environmental issues and concerns have not yet been effectively integrated in development planning and implementation. So far, the role of civil society, including non-governmental organizations (NGOs) and community-based organizations (CBOs) in environmental protection has not been sufficiently integrated in the institutional arrangements for environmental protection. Legal requirements of public disclosure can also be a powerful force for enhancing public and private sector accountability, and compliance with environmental regulations. In addition, the participation of stakeholders, and representatives of civil society, could improve the chances of success in terms of effectiveness and sustainability, and reduce corruption. In some DMCs the inclusion of civil society in environment and natural resource management has facilitated the devolution of natural resource and management functions to regional and local governments.

82. DMC Governments have gradually institutionalized environmental impact assessment requirements, including monitoring, as part of the approval process of infrastructure and industrial projects. Important gaps in human and institutional capacities, however, remain. Environmental assessment of development plans, and sectoral and macro level policies, have not yet been firmly established in the region. Moreover, the regulatory instruments used for environmental management are still overwhelmingly fiat based, as opposed to incentive based. This increases costs of compliance.

Implications of ADB's Poverty Alleviation Strategy for its Environment Policy

Theme	Initiative	Action	Instrument
SDO of sound environmental management will be pursued in ways that contribute most effectively to poverty reduction	Medium-term Action Plan	Program priorities: Enhancing environmental protection measures to conserve resources for the livelihoods and to protect the health of the poor; themes for policy dialogue	ADTAs, project loans, program loan covenants
The poverty-environment nexus has two broad components: (a) "brown issues" involving polluting industries, and (b) "green issues" related to deforestation, depletion of natural resources, and land degradation	Medium-term Action Plan	Program priorities: Sec. 10. 4; Themes for policy dialogue: i, iv, vii, viii, ix, x, xi Program priorities: Sec 10.1, 10.2, 10.3	ADTAs, project loans, program loan covenants
Much of past damage has been done by powerful vested interests.	Medium-term Action Plan	Program priorities: Sec 10.2; Themes for Policy Dialogue: ii, xv	ADTAs, project loans, program loan covenants
Poverty reduction strategies need to be accompanied by policies and actions that enhance the quality and productivity of the environment and natural resources	Medium-term Action Plan	Program priorities: Sec 10.1, 10.2, 10.3; themes for policy dialogue: iv, vii, viii, ix, xv, xix, xx,	ADTAs, project loans, program loan covenants
Environmental sustainability is crucial for poverty reduction ...many important environmental issues are addressed through projects with other development aims	Medium-term Action Plans	Environment as a crosscutting theme: Secs. 8-9	COS, CAPs, Project and program loans: environment assessment and implementation requirements; Capacity building ADTAs

Revised: 24 October 2000

Environmental Operations of the ADB, 1995-1999**Treaty Related Environmental Themes:**

- A21 – Agenda 21
- BD – Biodiversity
- CC – Climate Change
- DES – Desertification
- MP – MP
- THW – Toxic and Hazardous Waste
- WL – Wetlands

Table 1: ADB's Environment Oriented Technical Assistance (1995-1999)

Year	TA No.	Country	Title	Type	Amount (US\$)	Treaty Related Environmental Themes
1995	2403	IND	Energy Environmental Management of the Industrial Development ADB of India	A&O	585,000	A21, CC
	2474	IND	Environmental Improvement and Sustainable Development of the Agra-Mathura-Ferozabad Trapezium in Uttar Pradesh	PP	600,000	A21, CC
	2296	IND	Strengthening EIA Capacity and Environmental Legislation	A&O	500,000	A21
	2366	KAZ	Rehabilitation and Environmental Improvement of the Almaty No.1 Heat and Power Station	PP	556,000	A21, CC
	2397	KGZ	Strengthening Environmental Institutions and Improving Procedures for EIA	A&O	556,000	A21
	2329	LAO	Strengthening Environmental Planning & EIA Capability	A&O	599,000	A21
	2425	MAL	EIA of the Kalaka-Saribas Integrated Agricultural Development-Phase II	PP	87,000	A21
	2299	MAL	Strengthening the Institutional Framework for Sustainable Development	A&O	142,000	A21
	2350	MON	Energy Conservation	PP	100,000	A21, CC
	2458	MON	Strengthening Land Use Policies	A&O	580,000	A21, DES
	2385	PHI	Environmental Evaluation of Swamps and Marshlands	A&O	100,000	A21, WL
	2407	PRC	Capacity Building for Soil and Water Conservation	A&O	590,000	A21, DES
	2337	PRC	Coastal Environmental Protection and Institutional Assessment	A&O	98,500	A21
	2434	PRC	Establishing a Center for the Transfer of Environmentally Sound Technology	A&O	550,000	A21
	2298	PRC	Improving Coal Efficiency and Reducing Environmental Pollution	A&O	570,000	A21, CC
	2398	PRC	Improving Environmental Monitoring and Enforcement in Henan Province	A&O	90,000	A21
	2394	PRC	Jianfengling Park Management and Biodiversity Conservation	A&O	600,000	BD
	2408	PRC	Land Use and Land Tenure Policy in Fujian Province	A&O	600,000	A21
	2456	PRC	Pilot Environmental Plans for Selected Medium Size Cities	A&O	537,000	A21
	2494	PRC	Sound Safety and Environmental Practices for Offshore Oil and Gas Production	A&O	600,000	A21, CC
	2505	PRC	Strengthening Environmental Standards and Enforcement Policies	A&O	600,000	A21
	2445	PRC	Xian-Xianyang-Tongchuan Environment Improvement	PP	500,000	A21, CC
	2511	PRC	Zhejiang-Shanxi Water Conservancy	PP	1,000,000	A21
	2303	THA	Bangkok Metropolitan Region Wastewater Management Action Plan and Feasibility Study	PP	600,000	A21

Year	TA No.	Country	Title	Type	Amount (US\$)	Treaty Related Environmental Themes
	2369	THA	Solid Waste Management Sector Plan	PP	400,000	A21, THW
	2351	THA	Strengthening EIA Review Process	A&O	600,000	A21
	2378	THA	Strengthening the Environmental Unit of the Department of Highways	A&O	200,000	A21
	2319	TUV	Urban Planning and Environmental Management	A&O	310,000	A21
	2411	VIE	Forestry Sector and Watershed Management	PP	598,000	A21, BD
	5658	REG	Capacity Building for Environmental Law Training in the Asia and Pacific Region	Training	600,000	A21
	5622	REG	Subregional Cooperation on Environmental Monitoring Information System	Study	1,000,000	A21
1996	2724	BAN	Biodiversity Conservation in Sunderbans Forests	PP	500,000	BD
	2531	BHU	Strengthening EIA Capabilities & Preparation of Environmental Guidelines	A&O	350,000	A21
	2723	CAM	Institutional Strengthening and Expanding EIA Capacity	A&O	400,000	A21
	2535	INO	Coral Reef Rehabilitation and Management	PP	600,000	A21, BD
	2665	INO	Institutional Strengthening of the Forestry & Soil Conservation Services in the Segara Anakan Basin	A&O	250,000	A21
	2641	KIR	Environmental Improvement	A&O	72,500	A21
	2734	LAO	Nam Ngum River Basin Management	A&O	1,200,000	A21
	2613	NEP	Institutional Strengthening of NEA's Environment Division	A&O	534,000	A21
	2563	PAK	Forestry Sector	A&O	14,145,000	A21, BD
	2623	PHI	Evaluation of Environmental Standards for Selected Industry Subsectors	A&O	400,000	A21
	2735	PRC	Capacity Building for Natural Resources Legislation	A&O	800,000	A21
	2695	PRC	Coastal Resources Conservation and Environmental Improvement	A&O	810,000	A21, BD
	2693	PRC	Formulation of an Integral Environmental Management Plan for the Chao Lake Basin	A&O	800,000	A21, BD
	2729	PRC	Industrial Pollution Investigation & Assessment of TVEs	A&O	600,000	A21, THW
	2675	PRC	Market Based Energy Conservation and Environment Improvement	PP	597,000	A21, CC
	2619	SRI	Upper Watershed Management	PP	600,000	A21
	2704	VIE	Hazardous Waste Management	A&O	600,000	THW
	5702	REG	Acid Rain and Emission Reduction for Asia, Phase II	Others	600,000	A21
	5669	REG	Capacity Building in Environmental Economics	Training	598,000	A21
	5712	REG	Coastal & Marine Environmental Management in the South China Sea, Phase II	Study	2,700,000	A21, BD
	5695	REG	Environmental Cooperation in Northeast Asia	Training	495,000	A21
	5684	REG	Subregional Environmental Training and Institutional Strengthening in the GMS	Training	1,665,000	A21
1997	2806	IND	Karnataka Coastal Environmental Management and Urban Development	PP	800,000	A21
	2936	IND	Urban and Environmental Infrastructure Fund	PP	400,000	A21
	2805	INO	Strengthening of Urban Waste Management Policies and Strategies	A&O	600,000	A21, THW
	2822	INO	National Biodiversity Information Network	PP	700,000	BD
	2958	INO	Marine Resources Evaluation Management and Planning	PP	600,000	A21, BD
	2934	KGZ	Environmental Monitoring and Management Capacity Building	A&O	598,000	A21
	2856	MAL	Industrial Pollution Control Management	PP	588,000	THW
	2458	MON	Strengthening Land Use Policies (Suppl.)	A&O	244,000	A21, DES
	2808	NEP	Implementation of the Pesticides Regulatory Framework	A&O	100,000	THW
	2847	NEP	Institutional Strengthening of the Ministry of Population and Environment	A&O	600,000	A21
	2928	PAK	Quetta Water Supply and Environmental Improvement	PP	900,000	A21
	2803	PHI	Pasig River Environmental Management and Rehabilitation	PP	800,000	A21

Year	TA No.	Country	Title	Type	Amount (US\$)	Treaty Related Environmental Themes
	2835	PHI	Metro Manila Air Quality Improvement	PP	150,000	A21, CC
	2751	PRC	Capacity Building of Wastewater Treatment Operations in Anhui Province	A&O	400,000	A21
	2770	PRC	Fuzhou Water Supply and Wastewater Treatment	PP	598,000	A21
	2792	PRC	Study on Clean Coal Integrated Gasification Combined Cycle Technology	A&O	500,000	A21, CC
	2837	PRC	Improvement of Environmental Management in Shaanxi Province	A&O	935,000	A21
	2870	PRC	Capacity Building for Energy Conservation	PP	78,000	A21, CC
	2900	PRC	Financing Mechanism for Energy Efficiency Investment	PP	150,000	A21, CC
	2901	PRC	Shanxi Environment Improvement	PP	590,000	A21, CC
	2951	PRC	Promotion of Market-Based Instruments for Environmental Management	A&O	697,000	A21
	2854	RMI	Fisheries Management	A&O	598,000	A21, BD
	2942	SRI	Biodiversity Conservation	PP	800,000	BD
	2820	THA	Capacity Building for Waste Management Program Administration	A&O	300,000	A21, THW
	2859	UZB	Strengthening of Institutions Engaged in Environmental Protection	PP	675,000	A21
	2790	VIE	Ho Chi Minh City Environmental Improvement	PP	600,000	A21
	2852	VIE	Forestry Sector	A&O	7,000,000	A21, BD
	2871	VIE	Red River Basin Water Resources Management	A&O	1,150,000	A21
	5595	REG	Regional Community Forestry Training Center in Kasetsart University (Suppl.)	Training	1,400,000	A21, BD
	5727	REG	Multilateral Financial Institutions Environmental Group Meeting	Conference	52,000	A21
1998	3152	CAM	Sustainable Forest Management	PP	980,000	A21, BD
	3089	IND	Calcutta Environmental Improvement	PP	1,000,000	A21
	3133	LAO	Strengthening Social and Environmental Management	A&O	950,000	A21
	3121	NEP	Watershed Rehabilitation and Management	PP	600,000	A21
	3018	PNG	Social and Environmental Studies	PP	150,000	A21
	3123	PRC	Provincial Legislation on Environmental Protection and Natural Resources Conservation	A&O	300,000	A21
	3095	PRC	Hai River Basin Wastewater Management and Pollution Control	A&O	570,000	A21
	3079	PRC	TA Cluster to the PRC for the Promotion of Clean Technology	A&O	3,500,000	A21, CC, THW
	3069	PRC	Soil and Water Conservation in the Upper Yangtze River Basin	A&O	99,000	A21
	2675	PRC	Market-Based Energy Conservation & Environmental Improvement (Suppl.)	PP	150,000	A21, CC
	3039	PRC	Yunnan Road Environmental and Social Analysis	PP	150,000	A21
	3036	PRC	Power Rehabilitation and Environmental Improvement	PP	1,000,000	A21, CC
	3025	PRC	Suzhou Creek Environmental Rehabilitation	PP	965,000	A21
	3047	SRI	Forest Resource Management	PP	800,000	A21, BD
	3013	THA	Promotion of Market-Based Instruments for Environmental Management	A&O	605,000	A21
	5772	REG	Regional Training Course on Solid Waste Management in DMCs	Training	75,000	THW, A21
	5778	REG	Strengthening the Capacity of the ASEAN to Prevent and Mitigate Transboundary Atmospheric Pollution	Others	1,000,000	A21
	5783	REG	Strategic Environmental Framework for the Greater Mekong Subregion	Study	1,600,000	A21
	5784	REG	Appropriate Technology for Soil-Conserving Farming Systems (Phase I)	Research	600,000	A21
	5797	REG	Training of Journalists in Management of Environmental Information Resources	Training	40,000	A21
	5800	REG	Measurement of Environmental Performance	Study	441,000	A21

Year	TA No.	Country	Title	Type	Amount (US\$)	Treaty Related Environmental Themes
	5816	REG	Mayors' Asia-Pacific Environmental Summit	Conference	85,000	A21
	5822	REG	Protection and Management of Critical Wetlands in the Lower Mekong Basin	Study	1,650,000	WL, A21
	5826	REG	Asian Environmental Outlook	Others	900,000	A21
1999	3297	BAN	Urban Transport and Environment Improvement Study	AO	645,000	A21, CC
	3300	BAN	Sundarbans Biodiversity Conservation	AO	3,500,000	A21, BD
	3324	IND	Community Participation in Urban Environmental Improvement	AO	150,000	A21
	3252	INO	Capacity Building for Decentralization of the Environmental Impact Assessment Process	AO	420,000	A21
	3234	INO	Natural Resources and Environmental Management Sector	PP	380,000	A21
	3350	KAZ	Strengthening Environmental Management	AO	700,000	A21
	3364	NEP	Urban Environmental Improvement	PP	750,000	A21
	3383	PAK	Integrated Pest Management	AO	500,000	A21
	3282	PHI	Community-Based Forest Resources Management	PP	840,000	A21, BD
	3211	PRC	Improving Environmental Management in Suzhou Creek	AO	840,000	A21, BD
	3216	PRC	Tianjin Wastewater Treatment and Water Resources Protection	PP	800,000	A21
	3290	PRC	Capacity Building in Ministerial Status Responsibilities in the SEPA	AO	810,000	A21
	3325	PRC	Shanxi Air Quality Improvement	AO	700,000	A21, CC
	3372	PRC	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	PP	1,332,000	A21, BD
	3376	PRC	Songhua River Flood, Wetland, and Biodiversity Management	PP	1,545,000	A21, BD
	3271	SRI	Sustainable Natural Resource Management for Development	AO	800,000	A21, BD
	3273	SRI	Protected Area Development and Wildlife	PP	330,000	A21, BD
	3277	SOL	Marine Biodiversity Conservation	PP	150,000	A21, BD
	3255	VIE	Study on the Policy and Institutional Framework for Forest Resources Management	AO	470,000	A21, BD
	5840	REG	Promotion of Cleaner Production Policies and Practices in Selected DMCs	Study	600,000	A21, THW
	5844	REG	Promoting Sustainable Development Agenda in Asia: Ministerial Conference 2000	Conference	600,000	A21
	5860	REG	Institutional Strengthening and Collection of Environment Statistics	Research	500,000	A21
	5861	REG	Capacity Building for Implementation of the Kyoto Protocol and the Clean Development Mechanism	Others	200,000	CC
	5865	REG	Transboundary Environmental Cooperation in Northeast Asia	Study	350,000	A21
	5866	REG	Fourth Agriculture and Natural Resources Research at CGIAR Centers	Research	5,600,000	A21, BD
	5867	REG	Water Resources Management in Southeast Asia (Phase 2)	Conference	250,000	A21
	5888	REG	Third ADB-NGO Consultative Meeting on Environment and Sustainable Development	Conference	150,000	A21
	5896	REG	Strengthening the Live Reef Fish Trade Management in the PDMCs	Study	215,000	A21, BD
	5899	REG	Subregional Environmental Monitoring and Information System (Phase II)	Others	600,000	A21
	5900	REG	Regional Study on Forest Policy and Institutional Reforms	Study	595,000	A21, BD

Table 2: ADB's Loan Projects with Environmental Objectives (1995-1999)

Country	Project Title	SDO Classification		Loan Amount	Treaty Related Environmental Themes
		Primary	Secondary		
1999					
PRC	Suzhou Creek Rehabilitation			300.00	A21, BD
PRC	Shanxi Environment Improvement			102.00	A21, CC
SRI	Coastal Resource Management			40.00	A21, BD
VIE	Ho Chi Minh City Environmental Improvement			70.00	A21
CAM	Provincial Towns Improvement			20.00	A21
IND	Karnataka Urban Development and Coastal Environmental Management			175.00	A21, BD
IND	Urban and Environmental Infrastructure Facility Housing and Urban Development Corporation Limited			90.00	A21
IND	Urban and Environmental Infrastructure Facility ICICI Limited			80.00	A21
IND	Urban and Environmental Infrastructure Facility Infrastructure Development Finance Company			30.00	A21
LAO	Shifting Cultivation Stabilization			5.60	A21
MLD	Regional Development			8.00	A21
PAK	Punjab Farmer Managed Irrigation			7.80	A21
RMI	Ebeye Health and Infrastructure			9.25	A21
1998					
BAN	Sundarbans Biodiversity Conservation	ENV	POV	37.00	BD, WL
INO	Central Sulawesi Integrated Area Development and Conservation	ENV	POV	32.00	A21
PHI	Metro Manila Air Quality Improvement Sector Development Program	ENV		200.00	A21, CC
PHI	Metro Manila Air Quality Improvement (Air Pollution Control Facility)	ENV		25.00	A21, CC
PHI	Metro Manila Air Quality Improvement (Investment Loan)	ENV		71.00	A21, CC
THA	Samut Prakarn Wastewater Management (Supplementary)	ENV	HRD	80.00	A21
IND	Rajasthan Urban Infrastructure Development	HRD	ENV	250.00	A21
KIR	Sanitation, Public Health, and Environment Improvement	HRD	ENV	10.24	A21
PRC	Fuzhou Water Supply and Wastewater Treatment			102.00	
SRI	Tea Development	GRO	ENV	35.00	A21
1997					
INO	Coastal Community Development & Fisheries Resources Management	ENV	POV	41.00	A21
LAO	Secondary Towns Urban Development	ENV	HRD	27.00	A21
PAK	Korangi Sewerage & Wastewater Management	ENV	HRD	70.00	A21
PHI	Fisheries Resource Management	ENV		35.20	A21, WL
PRC	Xi'an-Xianyang Tongchuan Environment Improvement	ENV		156.00	A21, CC
SRI	Upper Watershed Management	ENV	POV	16.60	A21
VIE	Forestry Sector	ENV		33.00	A21, BD
IND	Chennai Port	GRO	ENV	15.20	A21
IND	Mumbai Port	GRO	ENV	97.80	A21
VIE	2nd Provincial Towns Water Supply	HRD	ENV	69.00	A21

Country	Project Title	SDO Classification		Loan Amount	Treaty Related Environmental Themes
		Primary	Secondary		
1996					
BAN	Forestry Sector	ENV	POV	50.00	A21, BD
INO	Segara Anakan Conservation & Development	ENV		45.60	A21
INO	BAPEDAL Regional Network	ENV	HRD	45.00	A21
INO	Integrated Pest Management for Smallholder Estates Crops	ENV		44.00	A21, THW
MAL	Klang River Flood Mitigation & Environmental Management	ENV		26.30	A21, WL
NEP	2nd Tourism Infrastructure Development	ENV		17.20	A21
PRC	Anhui Environmental Improvement-Industry	ENV		112.00	CC, A21
PRC	Anhui Environmental Improvement - Water	ENV		28.00	A21
CAM	Phnom Pehn Urban Water Supply and Drainage	HD	ENV	20.00	A21
IND	Renewable Energy Development	GRO	ENV	100.00	CC
PRC	2nd Industrial Energy Efficiency & Environment Improvement	GRO	ENV	178.00	CC, A21
PRC	North China Marine Culture & Natural Resources Management	GRO	ENV	70.00	A21, BD
1995					
BAN	Coastal Greenbelt	ENV	POV	23.40	A21, BD
LAO	Vientiane Integrated Urban Development	ENV	HD	20.00	A21
PAK	Forestry Sector Loan	ENV		42.60	A21, BD
PAK	National Drainage Sector	ENV		140.00	A21, DES
THA	Samut Prakarn Wastewater Management	ENV	HD	150.00	A21
INO	Sulawesi Rainfed Agriculture Development	GRO	POV/ENV	30.30	A21, BD
PRC	Hainan Agriculture and Natural Resources Development	GRO	ENV/POV	53.00	A21, BD, WL
SRI	Plantation Reform Project	GRO	ENV	60.00	A21
VIE	Provincial Towns Water Supply and Sanitation	HD	ENV	66.00	A21

Outline Provisions of Key International Environmental Agreements

83. In this Appendix, we briefly introduce the main features of the identified key international environmental agreements.

1. The Rio Declaration and Agenda 21

84. These two non-binding agreements were adopted at the Earth Summit at Rio de Janeiro in July 1992, and embody the current international consensus on the principles and content of what is meant by “sustainable development”. While the Rio Declaration sets forth Principles to guide actions towards sustainable development, Agenda 21 provides a concrete program covering the themes of social and economic dimensions, conservation and management of resources for development, strengthening the role of major groups, and means of implementation. The Preamble links these diverse themes, and expresses the international political consensus on approaches to the specific sectoral programs. While stressing that successful implementation of Agenda 21 is “first and foremost” the responsibility of governments, the Preamble also states unambiguously that international cooperation should “support and supplement” rather than seek to supplant, national efforts. The Preamble also affirms that to achieve the objectives of Agenda 21, developing countries will require a substantial flow of “new and additional” financial resources to cover the incremental costs of their actions to deal with global environmental problems and accelerate sustainable development.

85. Agenda 21 represents a serious attempt at harmonizing current understanding of the development process and environmental protection, with political perceptions and priorities. These could change over time, and accordingly Agenda 21 is designed as a dynamic document. Apart from questions of provision of financial resources and technology, a crucial element in effective implementation is technology transfer. The building up of technical skills, administrative capacity, policymaking skills, and institutional design is a major focus of the proposals, in which there exists considerable scope for multilateral cooperation involving many players and sectors.

2. UN Framework Convention on Climate Change Convention, (UNFCCC) 1992, and Kyoto Protocol (1997)

86. The Framework Convention and the Kyoto Protocol negotiated within this Framework seek to address the problem of dangerous human interference with the climate, believed to be caused by emissions of Greenhouse Gases (GHG) from diverse economic activities. Several Asian countries, notably small island countries such as the Pacific Islands and the Maldives, and densely populated deltaic countries such as Bangladesh, are concerned that rise in the mean sea-level may inundate their coastal areas, leading to loss of livelihoods, agricultural land, infrastructure, and homes. On the other hand, several industrializing developing countries dependent on fossil fuel resources, for example, PRC, India, and Indonesia, are apprehensive that their economic growth would be adversely affected by restrictions on emissions of GHG. Climate change may also have a number of other serious impacts in the region on agriculture, forests, and natural ecosystems, primarily through changes in precipitation patterns and temperature. The GEF²⁵ is identified as the

²⁵ The GEF was restructured in 1994 after its pilot phase. It has three Implementing Agencies: the UNDP, the World Bank, and the UNEP. Contributions to the GEF Trust Fund for its operations during 1994-97 total US\$2,022.52 million.0

financial mechanism for channeling financial and technological support to developing countries to adopt climate change response strategies.²⁶

87. The Kyoto Protocol (1997) strengthened the commitments of 38 industrialized countries and the EC ("Annex B" Parties) in respect of reduction of their GHG emissions. In the "first commitment period" 2008-2012, these countries are required to reduce their annual GHG emissions by specified percentages from their 1990 levels, averaging 5.2. Developing countries ("non-Annex I") still have no GHG reduction commitments. The Protocol also sets up certain mechanisms enabling cooperative implementation of these commitments. These include Emissions Trading (ET), Joint Implementation (JI), and the Clean Development Mechanism (CDM).²⁷ The first two mechanisms (ET and JI) apply only between countries with actual GHG reduction commitments, and are to be available from 2008. CDM, on the other hand, applies between Annex B and partner non-Annex I countries, and is expected to be operational in January 2001.²⁸

88. Under the CDM, a firm or other entity in a non-Annex I country may undertake a project which reduces GHG emissions from a baseline ("what would be expected to happen in the absence of the project"), transfer these reductions (reckoned from the baseline) to another firm or entity in a Annex B country, obtaining monetary or in-kind payments for transferring the GHG credits. Additionally, CDM projects must promote sustainable development in the non-Annex I host country, while a share of the proceeds of CDM projects are to be realized by an international regulatory body for climate change adaptation in vulnerable developing countries, and for meeting administrative costs of the mechanism.²⁹

89. The CDM is perceived as having considerable potential for facilitating transfers of finance and technology to developing countries willing to cooperate with Annex B countries in enabling the latter meet their GHG reduction commitments under the Protocol. A major attraction of the CDM is that, unlike the GEF, or other ODA or multilateral funding, it is not dependent on donor support or preferences. In particular, it may facilitate private sector investment in GHG abatement projects in non-Annex I countries, involving both financing and technology transfers.

3. Convention on Biological Diversity (CBD), 1992

90. The CBD addresses international concerns that human activities are rapidly altering natural habitats, resulting in loss of genetic, species, and ecosystem diversity at rates far exceeding background levels.³⁰ Developing countries, including several from Asia, are among the world's megadiversity areas. The CBD accepted the principle of state sovereignty over these resources, affirming at the same time that its conservation "is a common concern of humankind".

²⁶ The GEF has four focal areas. Apart from climate change, these include biodiversity, international waters, and ozone layer depletion, and also address land degradation in relation to these focal areas.

²⁷ Additionally, "Joint Fulfillment" enables countries to reallocate their GHG reduction commitments among themselves ensuring that the aggregate required reductions do not decrease.

²⁸ Credits (of GHG reductions) secured under the CDM between 2001 and 2008 may be counted by Annex B countries towards their reduction targets in 2008 – 2012.

²⁹ The COP has not yet resolved the difficult questions of design of institutional arrangements for the three cooperative implementation mechanisms. At COP-4 at Buenos Aires (November 1998) a "Plan of Action" was adopted, setting a deadline of COP-6 (end 2000) for completing negotiations on these issues. However, COP 6 was inconclusive, and negotiations are to resume in 2001.

³⁰ One estimate of extinction rates over geological time as 1 mammal species in 400 years and 1 bird species in 200 years. Recorded rates over historical time (400 years) are 58 mammal species, and 115 bird species. In 1990, about 12 percent of mammal species and 11 percent of bird species were classified as threatened. Of course, concern over species loss extends to the entire range of flora and fauna.

91. The CBD requires each country to develop national strategies, plans, or programs for the conservation and sustainable use of biodiversity. A financial mechanism is set up for *in-situ* conservation, identified on an interim basis as the GEF. Special measures for *ex-situ* conservation have also been spelled out. The crux of the CBD is, however, its provisions for sharing of benefits of conservation. These provisions seek to translate into certain mandatory elements of access agreements, the sovereign rights of states over these resources, which clearly includes the right of regulating access. These are, first, that "prior informed consent" of the state granting access is necessary. Second, while such access should be on "mutually agreed terms", certain minimum conditions are prescribed as to the content of such terms. These include the requirements that (i) the relevant research should, as far as possible, be carried out in the country providing the resource, and in any case with the full participation of that country; (ii) the products resulting from R&D using such genetic resources should be shared equitably with the country providing the resources; (iii) the profits of commercial use of genetic resources should be similarly shared; and (iv) the resulting technology should be transferred to the country providing these resources.

4. The Ramsar Convention on Wetlands (Ramsar, 1971)

92. Wetlands have major ecological functions, as regulators of water regimes and as habitats supporting often-rich biodiversity, and are considered a resource of great economic, cultural, scientific, and recreational value. The Convention seeks to promote the conservation and "wise use" of wetlands throughout the world by national and international action, and remains the only global Convention focussed on a specific ecosystem. The rationale for the treaty is that progressive encroachment on, and loss of wetlands constitute serious and sometimes irreparable environmental damage that must be avoided. Accordingly, wetlands should be conserved by ensuring their "wise use". The treaty defines "wise use" as "*sustainable utilization for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem*"; while "sustainable use" is understood as "*human use of a wetland so that it may yield the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations*". "Wise use" may also require strict protection (i.e., no harvesting).

93. There are four main Commitments of Parties under the Convention. These include: designating at least one site that meets the Ramsar criteria for inclusion in the *List of Wetlands of International importance (the "Ramsar List")*, and ensure the maintenance of the ecological character of each Ramsar site.; including wetland conservation within their national land-use planning, so as to promote the "wise use" of all their wetlands (and not only those included in the List); establishing nature reserves on wetlands, and promote training in wetland research, management, and wardening; and consulting with other Parties on the implementation of the Convention, in particular regarding transfrontier wetlands, shared water systems, shared species, and development projects affecting wetlands.

94. The Ramsar Small Grants Fund (SGF) established under the Convention provides small grants (maximum SF 40,000 per project) for projects in developing and transition countries. Multilateral and bilateral agencies have also assisted projects for wetlands conservation.

5. The Convention on Desertification (CCD)

95. The CCD was adopted in response to developing country that desertification should count as a global environmental problem. Asia has 1,949 million hectares of drylands. This

constitutes almost 50% of Asia's surface area, and 30% of the world's total land area.³¹ Data on desertification trends is notoriously unreliable. However, according to a UNEP assessment,³² desertification affects 1,341 million hectares of productive drylands in Asia, which are estimated to be about 70% of total global drylands area.

96. The CCD defines "desertification" to be "land degradation in arid, semi-arid, and dry sub-humid areas³³ resulting from various factors, including climatic variations and human activities". The objective of the Convention is to "...through effective actions at all levels, supported international co-operation and partnership arrangements, ... with a view to contributing to the achievement of sustainable development in affected areas.

97. To meet Convention objectives, Parties are guided by three principles. The first commits Parties to "ensure that decisions on the design and implementation of programs... are taken with the participation of populations and local communities, and that an enabling environment is created at higher levels to facilitate action at national and local levels." The second emphasizes the need for "international partnership and coordination to overcome traditional donor driven and uncoordinated responses to dryland development". The third states that "Parties should take into full consideration the special needs and circumstances of affected developing country Parties, particularly the least developed among them." The CCD also emphasizes the need for programs to be conceived and implemented as integrated parts of development policies, particularly with "strategies for poverty eradication".

98. Affected developing country Parties take on obligations to: (i) give due priority to combating desertification and allocate adequate resources for this purpose; (ii) establish strategies and priorities for desertification control, within the framework of national sustainable development plans; (iii) address underlying causes of desertification, paying special attention to socioeconomic factors and poverty; (iv) promote awareness and facilitate full participation of affected communities; and (v) provide an enabling macro-economic, institutional, and legislative environment for improved dryland management.

99. Obligations of developed country Parties include the responsibility to: (i) actively support the efforts of affected developing country Parties; (ii) provide substantial financial resources and other forms of support to implement strategies and programs; (iii) promote the mobilization of new and additional resources; (iv) promote and facilitate access to appropriate technology.

100. The Convention is to be implemented through National Action Programs (NAPs), which are to be complemented by sub-regional and regional action programs (SRAPs and RAPs). The NAPs are intended to include action to: (i) promote preventive measures; (ii) strengthen climatologic, meteorological and hydrological capacities; (iii) build institutional capacities; (iv) ensure mechanisms for stakeholder participation; (v) allow review and updating over time. The SRAPs and RAPs are intended to harmonize NAPs within a region or sub-region, address transboundary and common issues, and facilitate sharing of knowledge and approaches across countries.

³¹ CERES 1998. Inventory Study for the Interim Secretariat of the CCD.

³² UNEP/GRID 1991.

³³ Arid areas are defined as areas that receive a mean annual precipitation between 200-300mm, with interannual variation of 50-100%. Semi-arid areas have mean annual values of 500-800mm, with interannual variation of 25-50%. Dry sub-humid areas have less than 25% interannual rainfall variability. In the CCD, "Arid, semi-arid, and dry sub-humid areas" means areas, other than polar and sub-polar regions, in which the ratio of annual precipitation to potential evapotranspiration of 0.05 and 0.65.

101. The CCD embodies a multi-source, multi-channel approach to finance, including domestic resource mobilization, various bilateral and multilateral channels, and the private sector. The CCD established a Global Mechanism (GM) to “increase the effectiveness and efficiency of existing financial mechanisms”, and “promote actions leading to the mobilization and channeling of substantial financial resources, including for the transfer of technology, on a grant basis, and/or on concessional and other terms, to affected developing countries”. The CCD also provides the GEF with a supporting role as one of the relevant channels for convention finance.

6. The Basel Convention

102. The Basel Convention reflects the international community’s concerns about the risk to human health and the environment posed by the uncontrolled movement and disposal of hazardous wastes.³⁴ Developing countries were particularly concerned because their territories were often used for dumping wastes that other countries exported. Another of their concerns is that some imported wastes are recycled into usable materials in their countries (e.g., scrap iron into steel), and where the wastes are not hazardous, these recycling industries should not be denied their material inputs. *The overarching objective* of the Convention is to further sustainable development by minimizing the generation of hazardous waste.

103. The three main objectives of the Convention are: (i) to reduce and control transboundary movements of HW; (ii) to ensure that HW are treated and disposed off as close as possible to their source of generation; and (iii) to reduce generation of hazardous and toxic wastes. To achieve these objectives, the Basel Convention regulates the transboundary movements of HW to ensure environmentally sound management and disposal. The Convention demonstrates new norms and procedures to manage the movement and disposal of HW at the international as well as the national levels.

104. Important commitments of the Parties include: (i) to ensure that the generation of hazardous wastes is minimized, taking account of social, technological, and economic considerations; (ii) ensure environmentally sound management and safe disposal of hazardous wastes; (iii) prevent pollution and risk to human health and the environment from hazardous waste management; (iv) minimize transboundary movement of hazardous waste and ensure that any such movement does not pose risk to human health and the environment; (v) prevent export of hazardous waste to Parties, in particular developing countries, which have prohibited such imports; (vi) provide sufficient information about transboundary movements of hazardous wastes; and (vii) cooperate with other Parties and international organizations to improve environmentally sound management of such wastes and prevent illegal traffic. Specific areas of cooperation identified in the Convention, in particular to enable developing countries meet their commitments include: (i) monitoring effects of management of HW on human health and the environment; (ii) development and implementation of low-waste technologies; (iii) transfer of technology and management systems for HW and developing technical capacity; and (l) development of appropriate technical guidelines and codes of practice.

105. Subsequent to its adoption, the COP has agreed to ban the export of HW from developed to developing countries; prevent illegal traffic in HW; created an emergency fund, and adopted a Protocol on liability and compensation.

³⁴ It is estimated that over 400 million tonnes of hazardous wastes are generated every year, and a significant fraction of it is subject to transboundary movement.

Specialized Financial Mechanisms under Various International Environmental Agreements

Several mechanisms which have been created, or have special roles with respect to, the suite of key international environmental agreements identified above, are described below:

1. Global Environment Facility (GEF): The GEF³⁵ is identified as the financial mechanism for channeling financial and technological support to developing countries to adopt climate change response strategies.³⁶ Its operations are organized in the categories of: Operational Programs, which are an organizing framework for country-driven projects; Enabling Activities, which are means of fulfilling the requirements of national communications to a relevant Convention, or provide a basic level of information for policy making and planning; and Short-term Response Measures, which refer to projects which do not fall in either category, but would yield short-term global environmental benefits at low cost.

In climate change, the initial GEF financed activities include:

- (a) Operational programs embodying long-term measures with the objectives of removing implementation barriers for technologies and reducing the cost of promising technologies. Three initial operational programs are (i) removing barriers to energy conservation and energy efficiency; (ii) promoting the adoption of renewable energy by removing barriers and reducing implementation cost; and (iii) reducing the long-term costs of low GHG emitting energy technologies. Within this operational program initial activities will be developed for solar-thermal power generation, advanced biomass power and fuel systems, fuel cells, and advanced fossil fuel technology.
- (b) Enabling activities include those activities directly related to countries' obligations concerning national communications to the UNFCCC, while Stage I adaptation activities are intended to identify countries and regions that are particularly vulnerable to climate change.
- (c) Short-term projects, whose rationale for GHG support are primarily the expected GHG reduction, and may include carbon sink protection, enhancement and restoration of carbon storage in biomass and soils, and standard fossil fuel projects that result in lower GHG emissions.

2. Mechanisms under the Kyoto Protocol

The Protocol also sets up certain mechanisms enabling cooperative implementation of these commitments. These potentially market based approaches include Emissions Trading (ET), Joint Implementation (JI), and the Clean Development Mechanism (CDM).³⁷ The first two mechanisms (ET and JI) apply only between countries with actual GHG reduction commitments, and are to be available from 2008. CDM, on the other hand, applies between Annex B and partner

³⁵ The GEF was restructured in 1994 after its pilot phase. It has three Implementing Agencies: the UNDP, the World Bank, and the UNEP. Contributions to the GEF Trust Fund for its operations during 1994-97 total US\$2,022.52 million.

³⁶ The GEF has four focal areas. Apart from climate change, these include biodiversity, international waters, and ozone layer depletion, and also address land degradation in relation to these focal areas.

³⁷ Additionally, "Joint Fulfillment" enables countries to reallocate their GHG reduction commitments among themselves ensuring that the aggregate required reductions do not decrease.

non-Annex I countries, and is expected to be operational in January 2001. Credits (of GHG reductions) secured under the CDM between 2001 and 2008 may be counted by Annex B countries towards their reduction targets in 2008 – 2012.

Under Emissions Trading, Annex B countries which overfulfill their GHG reduction commitments may (voluntarily) transfer the excess credits to other Annex B countries which fall short, receiving negotiated monetary or in-kind benefits from the recipient country. This mechanism thus relates to GHG accounts at national aggregate levels. Under JI, on the other hand, a firm in a Annex B country may undertake a project which reduces GHG emissions from a baseline (“what would be expected to happen in the absence of the project”), transfer these reductions (reckoned from the baseline) to another firm in another (or the same) Annex B country, obtaining monetary or in-kind payments for transferring the GHG credits. CDM is similar to JI, except that the project must be located in a non-Annex I country. Additionally, CDM projects must promote sustainable development in the non-Annex I host country, while a share of the proceeds of CDM projects are required to be realized by an international regulatory body for climate change adaptation in vulnerable developing countries, and for meeting administrative costs of the mechanism.

The COP has not yet resolved the difficult questions of design of institutional arrangements for the three cooperative implementation mechanisms. At COP-4 at Buenos Aires (November 1998) a “Plan of Action” was adopted, listing 106 different questions for resolution, and setting a deadline of COP-6 (end 2000) for completing negotiations on these issues. The Plan requires that although only the CDM will be operational in 2001, while ET and JI will not operate till 2008, the institutional features of all three must be negotiated simultaneously by the deadline.

The CDM is perceived as having considerable potential for facilitating transfers of finance and technology to developing countries willing to cooperate with Annex B countries in enabling the latter meet their GHG reduction commitments under the Kyoto Protocol. However, a number of difficult issues need to be resolved at the COP, including linkages between the three mechanisms, before CDM can start to function. A major attraction of the CDM is that, unlike the GEF, or other ODA or multilateral funding, it is not dependent on donor support or preferences. In particular, it will facilitate private sector investment in GHG abatement projects in non-Annex I countries, involving both financing and technology transfers.

3. Mechanisms under the Basle Convention

Financial provisions under the Basle Convention include: (i) A Trust Fund for the Convention from contributions made by the Parties to the Convention, other governmental and intergovernmental organizations, and other sources; and (ii) the Convention requires a revolving fund for emergency situations, particularly for damage caused by accidents in transboundary movements of HW.

4. Mechanisms under the Convention on Desertification

Unlike the other Rio Conventions which depend on a single financial instrument, the CCD embodies a “multi-source, multi-channel approach to finance. Financing is to come from domestic resource mobilization, various bilateral and multilateral channels, and private sector. Article 21 of the CCD on Financial Mechanisms establishes a Global Mechanism (GM) to “increase the effectiveness and efficiency of existing financial mechanisms”, and “promote actions leading to the mobilization and channeling of substantial financial resources, including for the transfer of technology”, on a grant basis, and/or on concessional and other terms, to affected developing countries”. The GM functions under the authority and guidance of the COP

and is accountable to it. The International Fund for Agricultural Development (IFAD) was selected to house the GM. These three agencies form the nucleus of a Facilitation Committee (FC) for the GM, which has now been extended to include the regional development banks, and the GEF.

The CCD also provides the GEF with a supporting role as one of the relevant channels for convention finance. Article 20 of the Convention on Financial Resources calls upon developed country Parties to promote new and additional funding from the GEF among other sources. This role is, however, circumscribed by the terms of *the Instrument Establishing the Restructured Global Environment Facility (GEF)*, whereby the agreed incremental costs of activities concerning land degradation, primarily desertification and deforestation, are eligible for funding (CCD Art. I, para 2) but only as they relate to the four focal areas of the GEF (climate change, biodiversity, ozone depletion, and international waters)³⁸.

5. Mechanisms under the Ramsar Convention

The RAMSAR Small Grants Fund (SGF) established under the Convention provides small grants (maximum SF 40,000 per project) for projects in developing and transition countries. Since 1990, some 113 projects have been funded, totaling SF 3.82 million. The COP has established a target of \$1 million per year.

³⁸ Land degradation is now fully integrated into the GEF Operational Strategy (GEF, 1996).

ADB and Global Environment Facility (GEF) Update on Collaboration

The Global Environment Facility (GEF) provides grant financing to cover the agreed incremental costs of achieving global environmental objectives in four focal areas: biodiversity; climate change; international waters; and ozone depletion. Activities to address land degradation, as it relates to these focal areas, are also eligible. The GEF was recently replenished at a level of US\$ 2.75 billion. Considerable scope exists to blend ADB finance for sustainable development with GEF grant resources for global environmental objectives.

The ADB has been working closely with the Secretariat of the GEF and the three GEF Implementing Agencies (World Bank, UNDP, and UNEP) to explore the possibility of an enhanced role for regional development banks in GEF operations. As an outcome of these discussions, the GEF Council at its 13th meeting on 5-7 May, 1999 approved decision document GEF 13/C.13/3 entitled "Expanded Opportunities for Executing Agencies: Recent Efforts and Current Proposals to Expand Opportunities for Regional Development Banks". The full decision is reproduced below:

"The Council reviewed document GEF/C.13/3, Expanded Opportunities for Executing Agencies. The Council notes the efforts being made to expand opportunities for Regional Development Banks and considers the proposals contained in the document as an important step forward. The Council approves the proposed approach for the participation of Regional Development Banks in preparing and executing GEF projects and their access to PDF-B resources. The Council urges the Implementing Agencies to make a greater effort to diversify and cooperate with a wider range of executing agencies, including in the implementation of the strategic partnerships. The Council requests the Secretariat to provide a report on progress made at its May/June 2000 meeting."

The Expanded Opportunities decision has three main operational features: (i) direct eligibility rulings; (ii) direct transfer of GEF project preparatory grants to RDB; (iii) "shared implementation" responsibilities between RDB and IA. In addition, the decision covers a number of supporting measures such as enhanced training of staff, streamlining of procedures, participation of RDBs in GEF country dialogue exercises, etc. The purpose of these measures is to reduce operational uncertainty in RDB/GEF operations, and provide a more level playing field for ADB and RDBs to collaborate with GEF. It is expected that enhanced opportunities for RDBs would expand the GEF delivery capacity while leveraging additional resources for the global environment, introduce new and innovate project ideas, and promote healthy competition in meeting global environmental objectives.

Seven ADB project proposals have entered the formal GEF pipeline since May 1999. For the ADB/GEF projects in the pipeline, six GEF project preparatory grant proposals have been approved. It is expected that the ensuing projects for GEF Council approval will result in grant co-financing in the amount of about \$80-90 million. Three GEF training and awareness building activities were conducted at ADB Headquarters by UNDP, World Bank and GEF Secretariat in February, April and July 1999 respectively. A Board Seminar on GEF was presented in August 1999. Additional training opportunities have taken place in January (GEF Sec) and February 2000 (UNDP/GEF), and will continue on twice yearly basis.

A “Financial Procedures” agreement is being finalized with the GEF Trustee (World Bank in its capacity as Trustee) and a “Substantive Accountability” agreement is being concluded with the GEF Secretariat for the direct transfer of GEF preparatory grants to ADB. As an interim measure, a Memorandum of Agreement has been finalized with the World Bank (acting in its capacity as GEF Implementing Agency) for transfer of GEF project preparatory grants through the World Bank. Arrangements for transfer through UNDP are already in place.

An additional batch of nine ADB project concepts for possible GEF pipeline entry is currently being discussed with DMCs and the GEF Secretariat. In addition, structured pipeline development exercises are being carried out for 2000 and beyond, with the first review completed for PRC in January 2000. Beginning in 2000, GEF opportunities will be targeted explicitly in country programming missions, and all GEF country operational focal points in Asia have been informed of opportunities to collaborate with ADB in GEF implementation.

Based on the GEF Corporate Business Plan (2000-2003) and consultations with the GEF Secretariat in this regard, it is anticipated that GEF grant co-financing in the range of \$80-100 million annually could in principle be secured in 2000-2001, with possible increase thereafter as the ADB's role in GEF matures. Such co-financing would be available for eligible components of projects that are designed to respond specifically to GEF criteria and operational programs in the focal areas of biodiversity, climate change, international waters, and ozone depletion. In addition to opportunities for introducing biodiversity conservation in agriculture, rural development and natural resource projects, a largely untapped opportunity exists for ADB energy and transport sector projects that address climate change objectives.

ADB/GEF Projects Accepted into GEF Formal Pipeline 1999-2000¹
(as of 18/2/00)

Project Title	Status
PRC: Wind Power Development (IEEN)	Approved for pipeline entry by GEFSec. No PDFB requested. Expected Project Grant: \$15 million ¹ .
Sri Lanka: Protected Area Management and Wildlife Conservation (AWFN)	Approved for pipeline entry by GEFSec. CEO endorsement of PDFB grant of \$330,000. Expected Project Grant: \$5-10 Million.
PRC: Songhua River Flood and Wetland Management Project (AEFN)	Approved for pipeline entry by GEFSec. CEO endorsement of PDFB of \$330,000. Expected project grant: \$15-20 million.
Solomon Islands: Fisheries Management and Marine Biodiversity Conservation Project (OPO)	Approved for pipeline entry by GEFSec. CEO endorsement of PDFB grant of \$150,000. Expected Project Grant: \$3 million.
PRC: Yunnan Comprehensive Agricultural Development and Biodiversity Protection Project (AEAR)	Approved for pipeline entry by GEFSec. CEO endorsement of Block B proposal of \$350,000. Expected Project Grant: \$10-15 Million.
CAM: Integrated Resource Management and Development in the Tonle SAP (AWFN)	Approved for pipeline entry and approval of PDFB grant of \$350,000 on 9/2/00. Expected Project Grant: \$ 8-10 million.
PHI: Integrated Coastal Zone Management (AEFN)	Approved for pipeline entry and approval of PDFB grant of \$350,000 on 9/2/00). Expected Project Grant: \$10-15 million.

Recommendations of the *Study on Environmental Compliance During Project Implementation*

Environment Division, ADB, December 1999.

1. First and Immediate Step

- (a) Detailed review of environmental aspects of the Environment Category A projects needs to be carried out once a year with a view to ensuring that the borrower/EA is implementing all the EMMs and also acting in compliance with the required environmental regulations and guidelines of the borrower and ADB during project implementation. This review could be done simultaneously by a review mission of the Project Division concerned including an environment specialist or separately by ENVD. All mid-term review missions for Category A projects should always include an expert with appropriate environmental expertise. In order to fulfill the above requirements, more staff time should be available from ENVD for assistance in implementation of environmentally sensitive projects for environmental issues.
- (b) All review missions for environmentally sensitive projects with major ELCs should invariably include one section on environmental aspects and/or issues in their BTORs. The compliance status of environmental covenants also needs to be mentioned in BTORs.
- (c) To help review missions, a one-page checklist for Environment Categories A and B projects should be made a part of the SEIA and SIEE. This checklist should be included in the PAM for use by loan review missions. When the PAM is drafted, detailed provisions for environmental management and monitoring need to be made invariably with the assistance of an environment specialist, instead of copying the Environment Section in the RRP.
- (d) The PCR and project performance audit report (PPAR) for Environment Category A and environmentally sensitive Category B projects will also reinforce the section on environment by referring to the facts mentioned in the corresponding BTORs, among other things.
- (e) More specific, explicit, and substantive covenants on environmental aspects with reference to SEIA or SIEE reports should be reflected in LAs and PAs. Also, specific requirement for submission of environmental reports for Categories A and B projects should be made in the Schedule of LAs and/or PAs. Afterwards, the compliance status of environmental covenants should be included in Project Performance Reports (PPRs) (already under implementation from July 1999) and in the review mission's BTORs.
- (f) Annual training of mission leaders, PAU heads and project administration staff, and Resident Mission project implementation staff on environmental awareness and monitoring techniques should be organized and carried out as early as possible by ENVD. A detailed training program including training reference materials needs to be prepared by ENVD in due course.

- (g) In LAs and PAs, it is normally mentioned that the borrower/EA will submit to ADB monthly or quarterly reports on environmental management and monitoring. However, it would be sufficient if the borrower/EA submits such reports on a quarterly basis but without failure. This should be reflected in the LA/PA accordingly. Standard formats of the quarterly report suitable for several sectors will be developed by ENVD to be attached to the relevant PAI, ADB environmental guidelines, and PAM.
- (h) Considering the rather weak institutional capabilities of most DFIs in environmental management and supervision, for potentially environmentally sensitive projects ADB should require such DFIs to utilize the retainer services of reputable environmental consultants or consulting firms in the country. This should be expanded to all EAs of Environment Categories A and B (sensitive) projects.
- (i) To implement EMMs, funds are needed in most cases. In case such costs are substantial, they should be reflected in the project cost estimate during project appraisal as one separate item. The bill of quantity should be properly computed in the case of civil works, taking into account the costs needed for EMMs.

2. Second Step

- (a) If the above recommendations are approved by the Management, the relevant PAIs, including PAI 5.01 (Functions of Project Administration Missions), should be revised. The revision should be initiated by Central Operations Services Office (COSO) and the Office of Environment and Social Development (OESD) in consultation with the Projects/Programs Departments and other Offices concerned. The proposed revision could be done in conjunction with the environment policy and guidelines being revised. The OM, OP, and GP may be thoroughly reviewed at this stage with a view to finding any revision needed to improve ADB's environmental monitoring system. For this purpose, a working group needs to be formed within ENVD.
- (b) When tender documents are drafted, the requirements for environmental protection and mitigation measures should be reflected in the tender documents. In this context, it is recommended that the relevant provision on environmental measures in the sample bidding documents be revised as appropriate in due course. And also, the cost for such purpose should be reflected in the project cost estimates and subsequently in the tender documents.
- (c) **To help effectively carry out the environmental management and related coordination work during implementation, the need for establishing an environment-monitoring unit at ENVD will be further studied.**

THEMES FOR POLICY DIALOGUE

The following 21 Themes for Policy Dialogue embody several of the Program Priorities and are intended to furnish a menu of approaches to policy dialogue. They will be pursued by the ADB in its policy-related work in relation to TA and loan operations. Of course, it is not the case that all 21 Themes are meaningful for all DMCs. It may also be necessary to modify them in particular contexts. Where relevant, they may also be the subject of (sub)regional and national policy studies, capacity building, and collaboration with other bi-/multilateral development agencies.

1. Institutional

- (i) *Hierarchies of integrated economic and environmental (E-c-E) plans should be established covering global, regional, national, sub-national and local levels, with each level linked vertically.* Such plans should be based on bioregions (such as river basins, islands, or specific ecosystems), fully recognizing that these may lie within or cross-administrative boundaries, including national borders. These plans should be developed using participatory approaches, and endorsed at the appropriate political level. E-c-E plans should identify priority economic development, environmental management, and social support strategies and specific projects, as well as conducting strategic environmental assessments for policies, programs, and projects.
- (ii) *Decentralization of environmental responsibility to the appropriate lowest level should only be undertaken when there is adequate capacity, empowerment and local governance.* In order to accelerate meeting these conditions, coalitions/partnerships should be developed between government officials, NGOs, and the private sector. Devolution of responsibilities should ensure a corresponding devolution of revenue entitlements.
- (iii) *DMC governments should base their budget allocation decisions on anticipated outcomes.* These performance-based criteria budgeting (including zero-based) should include environmental performance. Budgets should be based on the outcomes of those allocations rather than the outputs, and the extent to which sectors/agencies are able to implement environmental objectives.
- (iv) *DMCs should develop ecolabelling, ISO 14000 and EMS certification regimes, and should incorporate requirements of these certification practices in their procurement guidelines.* If such certification schemes were developed nationally or regionally by DMCs on firm, scientific considerations, they may significantly enhance demand for their products by environmentally conscious buyers. Further, where DMC governments are significant buyers for certain products, requiring such certification in their procurement processes may rapidly accelerate the adoption of sound environmental management in a range of industries.
- (v) *A premium (say, 10% of design cost) should be placed on capital improvement budgets to finance adequate baseline information collection and monitoring, of which one-half should be allocated for baseline collection and the other half placed in escrow for contracting monitoring services after commissioning.* Baseline and monitoring should focus on outcome. Costs should be internalized and measured as component of economic rate of return. Investment decision-making due to better information, and

economic performance and outcome resulting from enhanced ability to anticipate problems and respond to changes in original projections, should be improved. National information base should also be strengthened.

- (vi) *DMCs should consider adopting Environment and Natural Resource Accounting (ENRA) in national planning, initially through satellite accounts.* Using ENRA allows sustainable growth management, and could be the basis for correcting and prioritizing policies, apart from serving as an indicator of the state of the environment and natural resources. An important policy use is that ENRA data can show that natural resource conservation, if an economic valuation of environmental impacts is made, is economically feasible. ENRA can be viewed as part of governance, since it promotes transparency and accountability.

2. Urban and Industrial

- (i) *Capital costs for urban environmental improvement should be financed by targeted taxes and surcharges.* National budget should not be allocated to a city for financing such capital cost; however, sovereign guarantees for loans and bond issues may be provided. Taxes and surcharges should be city specific. Surcharge on water supply should finance construction of centralized wastewater collection and treatment facilities. Vehicle registration surcharge, proportional to vehicle value, or fuel tax, should finance air quality improvement capital costs (such as inspection and maintenance facilities or bike paths). Consumer tax (or a proportion of VAT) should finance the upgrading of dumps to controlled sanitary landfills and new landfills. Urban development plans should identify and schedule priority capital improvements. Direct beneficiaries should pay O&M of such improvements.
- (ii) *An integrated urban/industrial development plan (say, 20-year) should be prepared for every urban area expected to have a population of over 500,000 by 2020.* Plan preparation should be the responsibility of municipal authorities (not national/state) based on national guidelines. Plans should recognize/anticipate slum growth and incorporate slum networking principles in utilities provision in coordination with industrial development. Plans should address improvements in municipal management and finance.
- (iii) *Environmentally sound practices should be integrated into the industrial development policy of DMCs.* Environmentally sound policies such as the use of best available technology, cleaner production, and demand side management should result in lower pollution load to the environment, and at the same time promote better product quality at a more competitive prices in the world market. In many cases, environmentally sound technology and practices have very high economic benefit-cost ratios (with positive safety and environment impacts) particularly in SMEs.
- (iv) *Energy and water prices should be adjusted to reflect total impacts consistent with efforts to improve efficiency of energy and water systems.* While implementing required supportive policies in capacity building, and in increasing access to technology to encourage competition, tariff setting responsibility would be de-politicized.
- (v) *Public /private sector collaboration in enforcement, pollution control inspection services and monitoring (with community-based monitoring) should be strengthened.* Inspection and monitoring should be under different service contracts.

3. Water Resources

- (i) *River basin development planning should be adopted at the national, regional, and local levels, integrating economic and social sectors together with the sustainable development and conservation of water and other biological resources.* Each country should prepare a national river basin resource profile and inventory, followed by preparation of a national policy to provide the framework for basin and sub-basin development plans. National and basin-level institutional mechanisms should be created to achieve integrated development of major river basins, including the capability to allocate water among users, demand-side water management, flood control, as well as socioeconomic development and environmental protection. Each major basin should have a long-term (approximately 25-year) development plan that integrates sector development. Databases should be created and maintained on social, economic, physical, and biological characteristics for all major basins. Heavily regulated rivers should institute computerized, real-time monitoring of water use.
- (ii) *All users should pay for true cost of water resources that would include the environmental and social costs.* These costs would cover both the cost of providing the water but also would include the disposal of wastewater. There should be cross subsidies (for basic domestic water use) for the poor.
- (iii) *Legal rights over subsurface water should be transferred to communities/users, while rights to deep aquifers should remain with DMC governments.* Groundwater policy should be integrated with general water resource policy, and institutional reforms undertaken in accordance with such policies. Energy use for extraction should not be subsidized. Deep aquifers should be conserved for use only during prolonged drought.
- (iv) *Governments should adopt integrated coastal zone management (ICZM) as the means to achieve sustainable development in coastal areas.* The foremost impact should be protection of local resource use rights, especially among poor coastal communities, so that development and conservation benefits are maintained within the local communities.
- (v) *Privatization of water supply and wastewater management services in major urban centers and industrial zones should be encouraged only with proper pricing reforms in place, and should include both water supply and wastewater services.* Public-private partnerships can be a source of financing.
- (vi) *Regional cooperation for contingency planning and control of episodic oil spills (this is also applicable to environmental emergencies) should be promoted.* While the private sector and potential polluter is responsible for control of oil spills, the equipment and personnel required to control a major oil spill is often beyond the capacity of one company or industry even in developed countries. Regional cooperation should be promoted and DMC governments should facilitate the movement in and out of their national boundaries, equipment and personnel required to control an oil spill.

4. Living Natural Resources

- (i) *Countries should rationalize their national protected area systems by preparing or updating and implementing national protected area system development plans with a view to achieving national and regional representative coverage for conservation and*

protection of all major ecosystems. The national protected area system development plans should help to ensure that all sites of highest national and international importance achieve adequate protection and continue to provide maximum services to society (soil and water conservation, recreation, etc.). The plans will make most efficient use of limited human and financial resources and inject equity considerations into protected area management. The plans should not only fully take into account the rights and needs of the poor, including the rights and needs of women, indigenous people, and local communities, but also address unsustainable consumption and production patterns, which are the main cause of impoverishment and erosion of biodiversity.

- (ii) *Flow of benefits to local communities from useful traditional knowledge should be facilitated.* Knowledge possessed by traditional communities in relation to the conservation and sustainable use of their biological resources is now recognized to have immense potential to provide benefits for mankind in medicine, agriculture, and other fields. However, fairness requires that the communities, which possess such useful knowledge should themselves share equitably in the benefits derived therefrom. For this to happen, it is necessary to develop and adopt new categories of intellectual property rights (IPRs).
- (iii) *DMCs should give priority to protecting and reclaiming degraded lands specifically for poverty alleviation.* While several technologies have been developed for reclamation of various types of degraded land, they often need comparatively higher investments per unit of land, and may have longer gestation periods. Accordingly, they are not very attractive for farmers and local community to adopt readily. On the other hand, degradation itself may result from unsound practices, such as inadequate drainage of irrigated lands, and overgrazing, in turn related to faulty assignments of land rights. The Convention on Desertification (CCD) is one of the instruments that provides for implementation of protection and reclamation measures through national, subregional and regional Actions Plans, and should be tapped in addressing these concerns. Program options include community based participatory reforestation and land rehabilitation programs, use of short-rotation tree crops and adoption of labor-intensive techniques for reclamation and rehabilitation to generate employment and ensure early returns, and provision of incentives in the form of easily accessible credit, quality seeds, seedlings, market facilities, and information to facilitate active participation by local communities.
- (iv) *Downstream beneficiaries (such as irrigation farmers, flood plain residents, estuarine fishermen and aquaculture farms etc.) should be required to pay upstream watershed managers, who undertake legally binding watershed protection activities and forego more profitable but damaging activities.* Enormous damage is created by upstream landholders seeking economic gain from destructive land management practices and transferring the externalities to downstream resource users. By internalizing these externalities and creating a market for their recognition and resolution, both upstream and downstream users benefit, and the environment is improved as well – a clear case of a win-win solution. The transfer payment should be based on locally appropriate mechanisms but could include land tax premiums; increased water tariffs, or direct contractual arrangements.