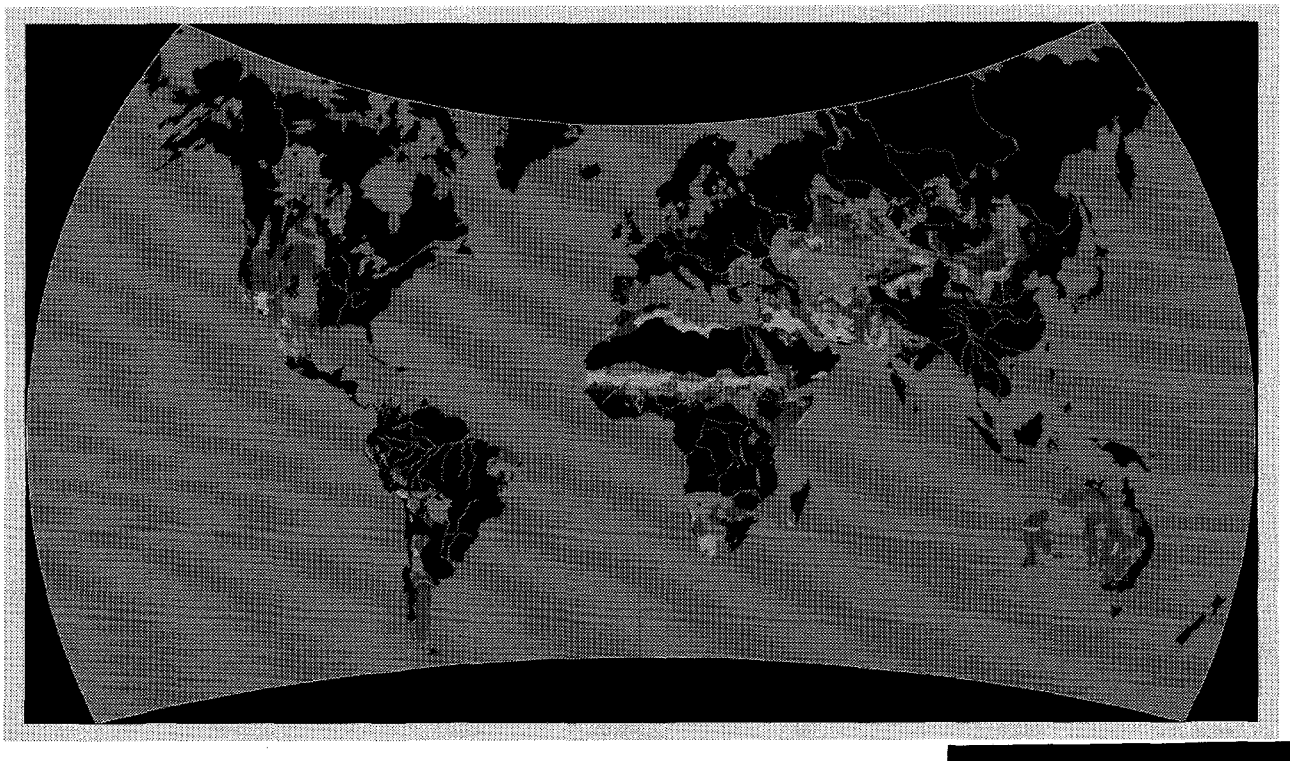
New Opportunities for Development:

The Desertification Convention



United Nations Convention to Combat Desertification

ESSD Environmentally and Socially Sustainable Development

The World Bank

Environment Department

New Opportunities for Development

The Desertification Convention

The World Bank
Washington, D.C.

Printed in the United States of America
First Printing November 1998

This report is a study by World Bank staff, and the judgements made herein do not necessarily reflect the views of the Board of Executive Directors or the governments they represent.

This report is based on a review of efforts to combat desertification in relation to the Desertification Convention, undertaken by Hassan Hassan, John English, and Günter Riethmacher of the Environment Department, World Bank. Many other World Bank staff from the Environment and Rural families contributed to the paper and offered useful suggestions. Assistance from the following individuals is gratefully acknowledged: Enos Esikuri, who assisted in preparing the report, and Jim Cantrell, who desktop published the text and designed the cover.

Cover: Map adapted from the *World Atlas of Desertification*, courtesy of the United Nations Environment Programme.

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"We have embarked upon a revitalized Rural Strategy—in which the links between poverty and land degradation are given special emphasis. We are helping introduce improved agricultural techniques to stem the spread of further desertification, and restore degraded land."

"We offer to assist the Convention to Combat Desertification—in partnership with others—in establishing mechanisms for mobilizing, financing, and coordinating implementation."

— Excerpts from President James D. Wolfensohn's address to the United Nations Special Session "Towards Global Sustainability," June 25th 1997

Desertification, or land degradation in dry land areas, is not just a physical phenomenon, but largely a result of human activity. It reflects the difficulty of managing natural resources in areas with high climatic variability and, therefore, with high production risk, which in turn is often combined with high market risk because of relative remoteness. In addition, the traditional inhabitants of many dryland areas are not well integrated, socially and politically, into the nation states of which they form a part.

The Desertification Convention is one of the three conventions which were the outcome of the United Nations Conference on Environment and Development (UNCED) in 1992. Its negotiation was completed and it was tabled for signature in Paris in 1994, and it came into force in 1996. It has now been ratified by almost 150 countries. In recognition of the special problems faced by African countries due to drought and land degradation in the arid and semi-arid zones, the convention has an article indicating that it gives priority to Africa, and all African countries have now ratified the Convention.

While other international environmental conventions (such as the Montreal Protocol) may be addressed by specific programmatic measures to introduce improved, benign technologies, the Desertification Convention recognizes that resource degradation in drylands cannot be tackled in this way. Efforts to tackle it must be linked to measures fostering broader economic and social change, designed to overcome the conditions which resulted in the degradation. That is, to the process of development itself.

The Convention, therefore, is as much a developmental as an environmental agreement. It requires developing country Parties to: develop an integrated approach to sustainable management of natural resources; ensure that resulting action plans are well integrated into overall development plans; promote effective participatory structures for planning at local, regional and national levels; and develop incentive structures appropriate to achievement of the resource management objectives of action plans. At

the same time, it requires the developed country Parties to: actively support the efforts of the developing country Parties; provide substantial financial resources and other forms of support to them for combating desertification; and develop operational mechanisms, particularly at the national and field levels, to ensure the fullest possible coordination among all the Parties and relevant intergovernmental and nongovernmental organizations, in order to avoid duplication, harmonize interventions and approaches, and maximize the impact of assistance.

The Global Environment Facility (GEF) is requested to provide funding to cover incremental costs of activities to combat desertification which reduce global impacts related to its four focus areas (biodiversity, international waters, climate change and ozone depletion).

The issue now is how to take advantage of the above commitments and the opportunities presented by the Convention to effectively address the problems of desertification and improve the lives of those living in dryland areas, which are now too frequently blighted by poverty, and to develop effective links between measures being taken to mitigate the impact of desertification at the local, national and global levels.

Effective implementation of the Convention will require changes in operational strategies and practices of developing and developed country Parties and other multilateral institutions, including:

- Mainstreaming the relevant natural resource management issues into the process of development planning, funding and implementation, linking with and building upon efforts in environmental action planning, and incorporating environmental assessments at the sectoral and regional level, so that the relevant issues will be taken into account before major projects and programs are selected;
- Placing greater emphasis on longer term strategies for sustainable development, together with more flexible instruments for project and program financing, and appropriate indicators to track progress, since tackling these resource management issues is a long-term endeavor;
- Improving understanding of the links between global environmental objectives and general development objectives and developing mechanisms to utilize synergies between the different international conventions and programs, for example, through trading carbon offsets within the framework of the Kyoto Protocol as a source of funding for land management initiatives in dryland areas (this assumes that land-use activities will be eligible under the Clean Development Mechanism);
- Developing participatory planning procedures in developing country Parties so as to ensure ownership of programs and policies by the broader civil society as well as by government, as outlined in the Convention;
- Developing and fostering partnerships so as to make improved use of existing channels and resources rather than create new ones in an already crowded aid landscape, and to disseminate and apply knowledge of best practice methodologies; and
- Strengthening coordination among external partners to improve effectiveness of development cooperation, and to optimize use of ODA resources. Existing approaches and mechanisms for coordination at the field level, including sector investment programs, Consultative Group meetings and Round tables, need to be refined.

This report outlines the scope of the Convention and indicates the efforts being made by the Bank to direct its lending resources and non-lending activities towards resource management in dryland areas and measures to enhance the effectiveness of these efforts.

Abbreviations and Acronyms

CAS	Country Assistance Strategy
CCD	Convention to Combat Desertification
COP	Conference of Parties
CIA	Collaborative Institutional Arrangement
EDI/LLC	Economic Development Institution/Learning and Leadership Center
FC	Facilitation Committee
GEF	Global Environment Facility
GM	Global Mechanism
NAP	National Action Program
NEAP	National Environmental Action Plan
NGO	Nongovernmental organizations
IDA	International Development Association
IFAD	International Fund for Agricultural Development
UNDP	United Nations Development Programme

CHAPTER 1

Introduction

The 1992 United Nations Conference on Environment and Development (UNCED) marked an unprecedented endorsement of an environmental agenda for the twenty-first century, Agenda 21. This agenda represents a global consensus and political commitment to sustainable development at the highest level of governments.

Building on that consensus and on the directives of Agenda 21, the 47th Session of the UN General Assembly established the Inter-Governmental Negotiating Committee for the Elaboration of an International Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (INCD).

The ratification of the International Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa[1] signifies an historic step that, with effective implementation, will benefit millions of people. Today, more than 900 million people in 100 countries are affected by desertification, a continuous and sometimes irreversible loss in the productivity of land, water and natural habitats. These problems can be addressed to give relief to the 10 million people who, in the last two decades, have become environmental refugees from degraded areas.

The Convention is comprehensive and touches on a number of socioeconomic concerns linked to desertification and the allocation and use of natural resources in general, as well as the management of specific dryland ecosystems. Many of the concerns addressed by the Convention are important to development institutions such as the World Bank.

THE DESERTIFICATION CONVENTION

The Convention was elaborated and tabled for signature in Paris on October 14, 1994. It entered into force on December 27, 1996. As of October, 1998, it had been ratified by almost 150 countries[2] (see Annex 2).

The objectives of the Convention are to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification. These objectives are to be met through effective action at all levels, supported by international cooperation and partnership arrangements, within the framework of an integrated approach consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.[3]

To meet these objectives, the Parties to the Convention[4] are guided by three principles: (a) stakeholder participation, (b) international cooperation, and (c) consideration of the specific needs of affected developing countries. Participation of local communities in the design and implementation of programs to combat desertification reflects the CCD's bottom-

up approach and the growing recognition of the importance of grassroots groups, local communities and NGOs in reaching and mobilizing people who work the land.

The CCD is to be implemented through National Action Programs (NAPs) which promote: (i) preventive measures, (ii) climatologic, meteorological and hydrological capabilities, (iii) institutional-strengthening, (iv) effective stakeholder participation, and (v) regular implementation reviews. The convention is also to be implemented through Subregional and Regional Action Programs (SRAPs) which have the same basic features of the NAPs.

Instead of establishing a new fund for combating desertification, the Convention addressed the need for improved management, mobilization and coordination of existing funds through the establishment of a Global Mechanism (GM). The GM is directed by the Conference of Parties (COP) to (i) identify existing financial resources: (ii) mobilize and channel financial resources from bilateral and multilateral sources to all levels for project and program design and implementation; and (iii) make current and new flows for CCD-relevant issues transparent to the affected countries. The convention also states that affected developing country Parties are to establish and/or strengthen national coordinating mechanisms to ensure the efficient use of all available financial resources.

The first COP (held in Rome between September 29, and October 10, 1997) elected the International Fund for Agricultural Development (IFAD) as the institution to host the GM. The management of the GM is supported on the basis of a Collaborative Institutional Arrangement (CIA) with IFAD, UNDP, and the World Bank. The first meeting of the Facilitation Committee (FC) of the GM was held in Washington in March, 1998. This resulted in a general consensus on the goals and functions of the GM and the commitment to strongly collaborate with other international conventions to create financial synergies in times of shrinking aid budgets. As a step in helping in collaboration, the second FC meeting, held in July, 1998, agreed to expand its membership to include the GEF Secretariat, the CCD Secretariat, and the Regional Development Banks, and that the FC would meet three times per year and be hosted and chaired on a rotational basis by the founding institutions, IFAD, UNDP and the World Bank.

Linkage to other International Environmental Conventions

Agenda 21 recognizes that desertification processes are intimately linked to three major global environmental issues: climate change and global warming, conservation and utilization of biodiversity, and international waters. The GEF was established to give concrete form to the effort to assist low income countries to develop the capacity and generate the resources necessary to participate in efforts to address these three global issues. As a result, the GEF has a central role to play in the development of programs to combat desertification, a fact recognized in the recently agreed membership of its Secretariat in the Facilitation Committee of the Global Mechanism.

The Convention encourages coordination of activities carried out under its auspices and other international agreements, and notes the trend in the commitments of the international community to deal with problems of the environment and development in an integrated manner. Examples include the use of meteorological and hydrological data and information, the promotion of alternative energy sources in place of fuelwood, and efforts to address climatic factors that affect sustainable development. The centrality of these issues to the implementation of the Convention is discussed further below.

Obligations of the Country Parties

The Convention imposes unusually broad obligations on the acceding Parties, which are discussed further in succeeding chapters of this report. It requires the affected country Parties to give priority to combating desertification and mitigating the affects of drought, to address its underlying causes, in particular socio-economic factors, and to work with affected populations through NGOs and other channels to

address them (see Annex 3). At the same time, the developed country Parties undertake to actively support these efforts, to provide substantial support for this purpose. All parties agreed however that they will "implement their obligations—individually or jointly, either through existing or prospective bilateral and multilateral arrangements or a combination thereof, as appropriate, emphasizing the need to coordinate efforts and develop a coherent long-term strategy at all levels" (Article 4). Thus, the thrust of the Convention is to stress that it is not to be seen as initiating a separate program to counter desertification, but that efforts towards this objective should be seen as an element in country's overall development plans. That is, this convention is as much a developmental as an environmental undertaking.

The World Bank's Obligation to Implement the Convention

The Convention creates rights and obligations for State Parties. Although the World Bank is not a signatory to the Convention, as a member of the international development community it is expected to cooperate with the provisions of the Convention. Given the Bank's central remit of supporting development, with a particular focus on poverty alleviation, the goals of the Convention are entirely consistent with the Bank's role. The Bank aims to support the Convention through its various instruments and programs, as a member of the CIA, in addition to its role as one of the implementing agencies for the GEF (Articles 12 and 20).

State Parties are required to (i) promote the mobilization of adequate, timely and predictable financial resources, including new and additional funding from GEF; (ii) rationalize and strengthen the management of resources already allocated for combating desertification, and (iii) give due priority and attention within the governing bodies of multilateral financial institutions, facilities and funds (Article 20). As outlined in Chapter 3, the Bank is taking a series of steps to assist ratifying Parties to fulfill these requirements.

This Report

This brief report first reviews the particular features of desertification, and outlines the initial lessons derived from the experience to date in tackling desertification problems which formed the basis for the unique scope and content of the Convention, and then summarizes the lending effort to date of the Bank addressing desertification and dryland management. It closes by reviewing the ongoing efforts of the Bank to mainstream these efforts into its overall activities, the efforts of the Bank and GEF to increase and improve the focus of global aspects of land degradation in general, and desertification in particular, and outlines the medium-term strategy which the organizations propose to pursue going forward.

Notes

1. The "International Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa" is referred to in this report as simply "the Convention" or the CCD.
2. Although the United States has not yet ratified the CCD, it has pledged to support a range of activities that promote the on-the-ground implementation of the Convention, particularly in Africa.
3. Refer to Annex 3 for a more detailed discussion of the Convention.
4. The parties are the ratifying countries and the European Union which has ratified the Convention in addition to its ratification by the EU's individual member countries.

CHAPTER 2

Combating Desertification

THE CHARACTERISTICS OF DRYLANDS

Desertification is land degradation in arid, semi-arid and dry sub-humid areas (usually collectively known as drylands) caused by human activities and climatic variations.[5] Dry- lands occur on all continents and are estimated to cover just over 40 percent of the earth's land surface, as indicated in the map in Figure 1. The reason for the particular attention being paid to degradation in these areas is that they suffer from a number of constraints which mean that the economic and social processes, through which degradation in more humid areas is usually tackled, are generally absent.

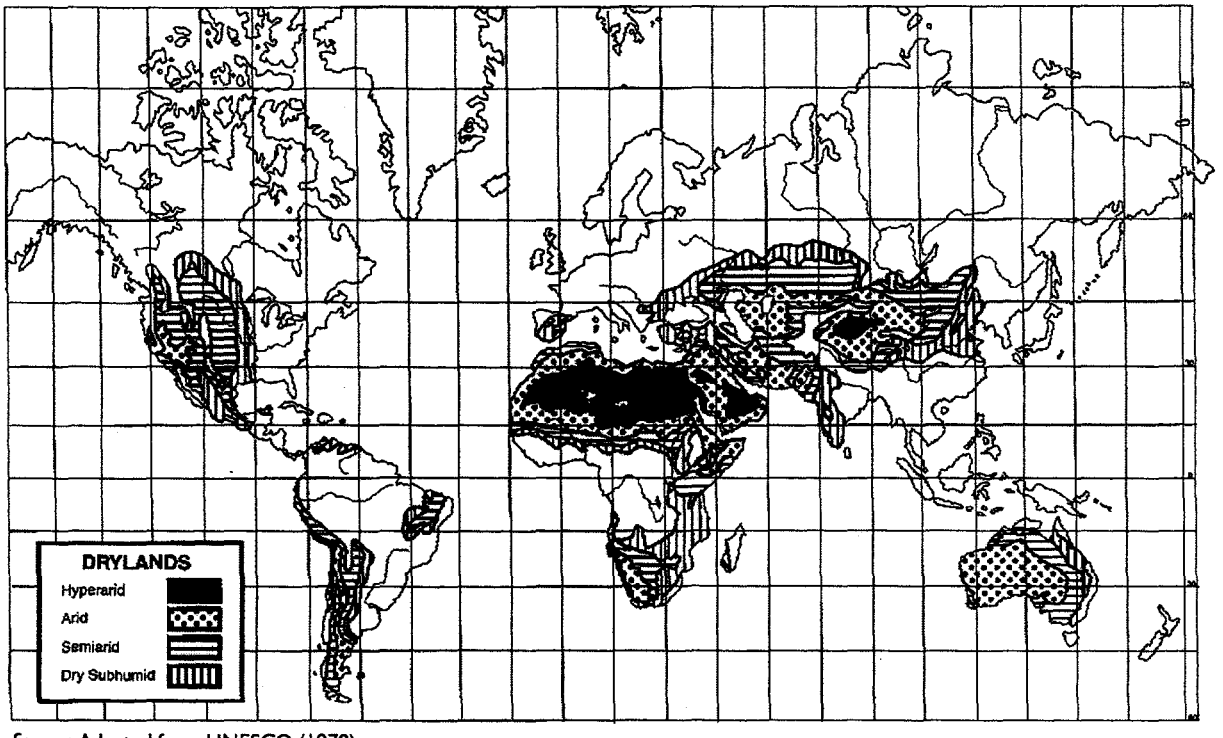
In drylands rainfall is not just low,[6] but generally is unevenly distributed through the year (and often unreliable), and is also highly variable from year to year, usually with a longer term cyclical variation. When cropping is attempted, the risk of crop failure is high. Because of moisture deficits, the density of plants on the soil surface is relatively low and provides incomplete cover from the infrequent heavy rain storms, leading to an increase of erosion and soil loss. The arid and semi-arid subregions are predominantly used for grazing. However, seasonal and inter-year rainfall variability means that the amount of feed available fluctuates widely. Traditional pastoralists have developed seasonal or longer term migration patterns to allow them to adapt to climatic variations.

Low population densities, which have resulted from the inherent low productivity of these areas, have meant that these areas have generally become economically marginal. They contain relatively few large population centers and generally have limited physical and economic infrastructure. For example, transport and marketing systems are poorly developed, and short term increases and declines in production cannot be easily handled without significant variations in prices received or paid by producers. Thus, market risk is added to production risk.

Partly because of these conditions, technology and economic development have advanced more rapidly in more humid regions, while population and economic and political power have also grown in the latter areas. Drylands are often at the periphery of the nation states, and may be occupied by different ethnic groups than the more densely populated regions. Partly because of this, the occupants of dryland areas are often politically marginalized, being poorly represented in the governmental and other power structures.

When the concerns which led to the consideration of desertification as being a distinct environmental issue first arose in the 1970s, the problems were seen as being primarily physical and capable of being addressed through physical works, such as tree planting and measures to reduce surface erosion of soil by

Figure 1 — Map of World's Dryland Areas



Source: Adapted from UNESCO (1979).

water. Programs based on this view were initiated, but had limited impact, because they often did not relate to the priorities of the local population or address the underlying causes of the activities which were giving rise to the observed degradation in the first place. These initial approaches have been modified in subsequent multilateral and bilateral assistance in dryland areas, and several common patterns and determinants of performance have emerged from this experience.

Resource Degradation

The concept of a "resource" only has meaning in the sense that some natural entity, such as land, animals, water, or minerals, is capable of generating value for a user. For example, the benefit obtained from using the plants on land directly or through grazing domesticated animals. Thus, while resource degradation may result from natural forces such as drought and fires, or torrential rains and floods, in general its primary cause is the actions of human users. Users may extract the benefits, but not take steps to ensure that they can be obtained in the future. While it is not possible to identify each and every reason why users may do this, it is clear that the element of "risk" permeates every decision and management system. For the reasons noted above, the risks of agricultural production are high in dryland areas, and land users have few viable alternatives. Farmers and herders are often reluctant to reinvest in the land or other resources for the maintenance of their productivity, particularly if the long-term benefits are not clearly apparent. Risk minimization strategies have often been recommended, with special emphasis on: (a) providing quality information and data for decisionmaking;[7] (b) developing and supporting management systems that are suitable to the ecological region and are compatible with existing circumstances;[8] and (c) establishing the policy and institutional bases for an appropriate incentive system to encourage sustainable use of the natural resource base.[9]

Lessons Learned

Experience has indicated that four major aspects must be taken into account in formulating responses to

these resource management problems: population pressure; human and institutional capital; the approach to project design and implementation; and the policy environment.

Population Pressures

Available data on land degradation have seldom been related to data on population density. This relationship needs urgent attention—particularly in Africa. A series of studies conducted by the World Bank have highlighted the scarcity of information in these areas.[10] Population pressure is central to understanding many human induced environmental degradation processes. In response there is first a shift to the extensive rather than the intensive margin. That is, people move to 'unoccupied' lands or to lands that were traditionally left fallow, rather than try and increase output on land already being used. Either way, traditional practices have to be modified. In addition, 'unoccupied' lands are usually claimed by someone for existing uses and, thus, friction and occasionally violent conflict results. Exceptionally high population growth rates in Africa in recent decades, coupled with weak agricultural development and political instability, have contributed to high rates of internal migration, social tension and land degradation.

Human and Institutional Capital

Projects must emphasize the development of human resources if they are to be successful. A common problem in project performance concerns the inadequacy of management. Capacity building, establishing a knowledge base, research, and extension are activities that require qualified, educated and trained people. As projects increasingly adopt a participatory approach, there is a greater need for research, extension and other services to strengthen and mobilize local and national institutions. The strengthening of farmers' and herders' associations and rural communities is very important for those areas under the threat of desertification, in order to facilitate change and avoid open conflict.

Project Design and Implementation

Factors that improve the quality of project design and the prospects for successful project implementation include the following. First, successful project implementation requires a thorough understanding of the socioeconomic conditions in which projects are implemented, as well as the characteristics and dynamics of the natural resource base. Second, for private individuals to maintain and enhance natural resources, both short- and long-term incentives are needed. Therefore, benefits should be evident, understandable, and likely to materialize quickly. Traditions and beliefs may work with or against market incentives, and they need to be understood before interventions can be planned. Third, projects that try to gain beneficiaries' trust, address their needs, involve them in the evolution of project activities, and indicate clear ownership by the beneficiaries are generally more successful than those that do not. To achieve effective participation may require reform of local and national institutions. Last, a major lesson concerns the need to recognize the intrinsic complexity of property rights, land tenure and use, and the roles played by different actors in the economy.

The Policy Environment

Monetary, fiscal, and trade policies significantly affect the way natural resources are conserved or depleted. Knowledge of policy interactions across sectors that influence land stewardship should form the basis for a dialogue with borrowers on economic policy. Resource degradation should be a major concern of macro and sectoral policies, and environmental considerations should be incorporated into decisionmaking on assistance strategies, adjustment operations and reviews of public investment and expenditure. These lessons are being incorporated effectively into current projects addressing natural resource management (described in Annex 1, Table A1).

Application of these Lessons in the Convention

The Convention takes a broad view of the measures which should be taken to tackle the problems of desertification as a result of the physical, economic, social and institutional conditions common in dryland areas, and the experience outlined above. The major articles are reproduced in Annex 3. Because of the wide gap between economic planning and the implementation of actions for combating desertification, new approaches are needed to prepare well-defined and well-integrated international and national priorities and strategies. Consequently, a "country focus" is essential. In this regard, the Convention explicitly recognizes the need to:

- Integrate strategies to combat desertification with poverty reduction and take into account the relationship between poverty and the environment;
- Develop an integrated approach to sustainable management of natural resources;
- Prepare, make public, and implement national action plans, closely linked to NEAPs, integrated into overall development plans;
- Promote sound policies and strengthen institutional frameworks;
- Establish or strengthen food security systems, including marketing and storage; and
- Establish appropriate financial mechanisms.

Integrated Approach to Natural Resource Management

Approaches are needed which support environmentally sustainable development, natural resource assessments, environmental information systems, and building institutional capacity for better design and implementation of activities. In this respect, the Convention emphasizes that the focus should be on:

- Transparency, participation and cooperation locally, nationally, regionally and internationally;
- Developing a knowledge base and sharing information on best practices;
- Giving attention to preventive measures for lands not yet or only slightly degraded;
- Enhancing national climatological and hydrological capabilities and means to provide early warning of drought;
- Developing irrigation programs and promoting sustainable agricultural practices;
- Increasing the availability of water resources; and
- Ensuring integrated plans for the sustainable management of all natural resources, including agricultural and pastoral land, vegetation cover, wildlife, forests, water, and biological diversity.

Community Participation

Efforts to alleviate desertification should be closely coordinated with the affected communities, promoting their participation at all levels of decisionmaking. Given the strong social dimensions of sustainable development, the Convention has focused on:

- Strengthening regional and subregional organizations;
- Promoting effective participation at local, national and regional levels of NGOs and local populations, including women, farmers, pastoralists and their organizations;
- Encouraging the use of cooperative mechanisms, including NGOs;
- Responding to the specific needs of local populations, promoting traditional and local knowledge, and strengthening extension and dissemination; and
- Giving due consideration to locally identified and designed programs.

Institutions and Incentive Structures for the Poor

The Convention's poverty orientation explicitly reflects the main development challenges facing many

of the signatory countries. Noting that the poor are both agents and victims of desertification, it is necessary that institutional arrangements and incentives be developed to assist the poor in managing natural resources. To eradicate poverty, the Convention proposes measures linked to the development of rural markets, expansion of agricultural diversity, establishment of adequate price and tax policies, promotion of drought-resistant crops, and application of integrated dryland farming systems. The attainment of these aims not only demands a reappraisal of the financial aspects of the development process, resource mobilization and international lending, but also of such institutional aspects as:

- Organizational arrangements for planning and implementation (including training in sustainable management of natural resources);
- Legislation and regulatory arrangements, especially the regulatory frameworks for natural resource management and land tenure security;
- The role of both public and private sectors, including NGOs;
- Incentive structures, including market and nonmarket-based interventions; and
- Managerial structures at the sector and regional levels (for example, increasing the knowledge base about desertification through research and the collection, analysis, and exchange of information).

Thus, experience in development activities in dryland areas over the past quarter century has been incorporated into the Convention, which imposes broad ranging obligations on all Parties. The latter explicitly recognizes and requires a multifaceted and holistic approach to the problems of desertification. In particular, it makes clear that efforts to address desertification, as defined here, cannot be separated from general development activities and that, therefore, affected country Parties undertake to make desertification a centerpiece of their development planning. *Parri passu*, developed country Parties, and international institutions such as the Bank, equally have undertaken to recognize desertification, and measures to tackle it, as central features of their programs of financial and other assistance. The following chapter reviews the current role of the Bank in financing dryland management efforts and is followed by a discussion of efforts being made to mainstream the related environmental issues into the overall lending and support programs of the Bank and the GEF.

Notes

5. Drylands are regions where annual potential evapotranspiration exceeds annual precipitation.
6. Typically less than 800 mm in tropical regions. In more temperate regions, since transpiration is reduced, less rainfall is required for adequate plant growth.
7. For example, through agencies such as the Famine Early Warning System (FEWS) and the Observatoire du Sahel, increasing use is being made of satellite derived data to chart the onset of rains, and predict the risks of short run drought. Extension and other agencies are using this information to advise farmers on appropriate cropping patterns.
8. Work over the past two decades has shown the importance of certain aspects of traditional use systems in supporting continued effective management and use of resources and, for example, have shown the importance of ensuring adequate access to key resources, see Noragric, 1998, "Good Practices in Dryland Management," Chapter 4.
9. For example, traditional systems of land and other resource rights are not recognized in the legal systems of many countries. Thus, pastoralists etc. cannot use the legal system to resolve resource disputes.
10. Cleaver, Kevin M., and Gotz A. Schreiber. 1992. *The Population, Agriculture and Environment Nexus in Sub-Saharan Africa*. Africa Technical Department, World Bank, Washington, D.C.

CHAPTER 3

Financing for Desertification

THE BANK LENDING EFFORT

In this context, the World Bank has for some time been assisting many of its member countries with addressing resource degradation in general and desertification in particular. This assistance, in the form of investments, policy formulation, and institutional development, uses the same approach and procedures applied to other programs geared to attaining environmentally sustainable development.

Table 1 summarizes the nature and scope of World Bank-financed operations approved between 1990 and 1998 to address land degradation in dryland ecosystems (arid, semi-arid and dry sub-humid).[11] These projects vary greatly in the degree to which they address renewable resource problems. Some are wholly directed toward mitigating natural resource degradation, while others only partially so. All of them address to some degree such problems as degraded soils, reduced soil fertility, soil erosion, overuse of land, salinization and waterlogging, low crop yields, loss of biodiversity, and/or deforestation (see Annex 1).

Between 1990 and 1998, the World Bank approved financing for 159 projects directed wholly or in part at natural resource degradation in countries with significant areas of dryland. Direct lending totaled the equivalent of about US$8.9 billion and leveraged about US$9 billion in addition, resulting in a total dryland investment portfolio exceeding US$18 billion. Of this total, 54 of the projects were primarily directed at land degradation, with lending of US$1.8 billion. A regional breakdown shows that the major share (40 percent) of all projects focusing on natural resource management are in Sub-Saharan Africa, 18 percent in Latin America and the Caribbean, 13 percent in Middle East and North Africa, 13 percent South Asia, 9 percent in East Asia, and 7 percent in Europe and Central Asia.

The nature of the projects supported by the Bank has evolved considerably over the past decade or so and significant numbers of these operations do reflect significant aspects of the approach enshrined in the Convention. For example, there is increasing experience with participatory planning and implementation and the use of community-based institutions as a basis for resource management. Experience in the operation of drought recovery programs is also growing.

Local Participatory Organizations

A notable feature of this program has been the increasing involvement of local producer or community organizations in implementation. Several projects have development of such participatory groups and related structures as objectives. Perhaps the most extensive effort, specifically focussing on dryland areas, has been in the natural resource management

Table 1 — Summary of World Bank financial support for projects with components that address natural resource degradation in drylands, fiscal 1990–98

(US$ million)

Bank Region	Category 1		Category 2		Total	
Country	Projects	Credit/Loan	Projects	Credit/Loan	Projects	Credit/Loan
Africa						
Angola	--	--	2	85.6	2	85.6
Benin	2	20.1	3	57.7	5	77.8
Burkina Faso	1	16.5	3	73.0	4	89.5
Cameroon	1	10.0	1	21.0	2	31.0
Central African Republic	1	21.0	1	16.6	2	37.6
Chad			2	5.3	1	5.3
Cote d'Ivoire	2	50.0	2	121.0	4	171.0
Eritrea	1	10.0			1	10.0
Ethiopia	--	--	2	194.3	2	194.3
Gambia	1	2.3	1	12.3	2	14.6
Ghana	2	27.4	3	74.9	5	102.3
Guinea	--	--	2	43.0	2	43.0
Kenya	3	69.2	2	59.1	5	128.3
Lesotho	1	10.0			1	10.0
Madagascar	2	56.0	3	74.9	5	130.9
Malawi	1	12.4			1	12.4
Mali	1	20.4	2	28.6	3	49.0
Mauritania	1	18.0	1	18.2	2	36.2
Mozambique	--	--	2	55.0	2	55.0
Niger	1	26.7	1	18.0	2	44.7
Nigeria	1	25.0	2	120.5	3	145.5
Senegal	--	--	5	185.8	5	185.8
Tanzania	1	18.3	2	57.4	3	75.7
Zambia	1	12.8			1	12.8
Zimbabwe	3	82.0	--	--	3	82.0
Sub-total	**27**	**508.1**	**42**	**1579.6**	**69**	**2087.7**
Middle East & N. Africa						
Algeria	2	82.0	2	65.0	4	147.0
Egypt	1	22.0	2	146.0	3	168.0
Iran	--	--	2	202.0	2	202.0
Jordan	--	--	1	6.6	1	6.6
Lebanon			1	33.5	1	33.5
Morocco	3	59.0	2	150.0	5	209.0
Tunisia	1	69.0	3	202.0	4	271.0
Turkey	1	77.0		--	1	77.0
Yemen	1	32.8	1	14.4	2	47.2
Sub-total	**9**	**341.8**	**14**	**819.5**	**23**	**1161.3**
East Asia and Pacific						
China	2	250.0	7	1206.2	9	1,456.2
Thailand	--	--	2	148.1	2	148.1
Sub-total	**2**	**250.0**	**9**	**1354.3**	**11**	**1,604.3**
South Asia						
India	4	351.4	8	881.7	12	1,233.1
Pakistan	4	126.9	5	449.9	9	576.8
Sri Lanka	1	18.3	1	14.8	2	33.1
Sub-total	**9**	**496.6**	**14**	**1346.4**	**23**	**1,843.0**
Europe and Central Asia						
Albania	1	8.0			1	8.0
Azerbaijan			1	14.7	1	14.7
Kazakhstan			1	80.0	1	80.0
Macedonia			1	12.5	1	12.5
Turkey	1	63.0	3	152.0	4	215.0
Uzbekistan	--	--	1	66.0	1	66.0
Sub-total	**2**	**71.0**	**7**	**325.2**	**9**	**396.2**
Latin America						
Argentina			1	16.0	1	16.0
Bolivia	1	4.8	1	20.4	2	25.2
Brazil	--	--	4	252.0	4	252.0
Chile	--	--	2	106.5	2	106.5
Dominican Republic			1	28.0	1	28.0
Ecuador	1	15.0	1	84.0	2	99.0
El Salvador			1	50.0	1	50.0
Mexico	1	15.0	5	730.5	6	745.5
Paraguay	1	50.0	1	29.0	2	79.0
Venezuela	1	55.0	2	339.0	3	394.0
Sub-total	**5**	**139.8**	**19**	**1655.4**	**24**	**1795.2**
World Bank Total	**54**	**1,807.3**	**105**	**7,080.4**	**159**	**8,887.71020**

Note: Category 1 projects are designed *primarily* to improve natural resource management. Category 2 projects have *components* for improving resource management.

projects in the Sahel. The experience to date has shown that:

- Implementation is slow, complex and costly, at least at the outset;
- Existing procedures and processes make it difficult for local communities to assume responsibility for management; and
- Monitoring and evaluation systems cannot yet produce detailed quantitative information on the impact of investments.

However, despite these problems, it is clear that the approach is having an impact on the ground, even if it is not conventionally measurable. Local communities are developing a greater capacity to plan and negotiate in the context of development, and the process is beginning to change the way the communities behave internally and externally, with the "outside" world[12]. They are increasingly able to articulate their concerns and priorities in ways which help in devising implementable solutions. Inter-village visits have also proved to be very powerful in creating awareness of alternative solutions to problems and in developing networks.

The difficulties involved in developing participatory organizations are illustrated by the experience of the Second Livestock project in Mauritania, which aimed to support Pastoral Associations as a means of promoting improved range productivity and, thereby, improve incomes.[13] Progress achieved under the project was limited but did illustrate the way in which, once initiated, such efforts can develop a dynamic of their own. At the outset of such a program, response to efforts to develop local level organizations is likely to come from the existing local community leadership, and may serve to entrench that leadership. This may, or may not, be conducive to the achievement of broader development goals. Commonly, the process of development is accompanied by, and dependent on, the creation of a broader and more development oriented local leadership than that provided by existing local structures.[14] This process may generate tensions which could slow, or even stop, the development of the local groups. In this case, it also became clear that local priorities were different than those foreseen for the project. Thus, flexibility in implementation is likely to be essential for success.

Drought Recovery

During the 1990s, the Bank has undertaken several Drought Recovery Operations. One of the most ambitious was in Zimbabwe in response to the major 1991 drought, the worst of the century in much of Southern Africa.[15] The main lessons from this experience were (i) to highlight the value of developing a framework for action in advance, clarifying institutional roles, so that time is not lost when the crisis hits; (ii) to emphasize the importance in program design of distinguishing between relief, recovery and mitigation activities, as each has different timing; and (iii) that, in countries subject to significant drought, drought management should feature in donor assistance, as well as government strategies. Similar conclusions were indicated by the implementation experience of the Moldova Emergency Drought Recovery Project.

Level of Impact

Bank operations are usually undertaken through member governments. While the operations have responded to aspects of land degradation problems they clearly do not cover the whole range of activities implied by the Convention. The latter reflects the fact that land degradation, like most environmental issues, is site specific (that is, it occurs in a specific place) but its impacts may be felt at several levels:

- At the *farm* level it may result in reduced productivity of the land affected;
- Within a given watershed, it can result in a range of problems such as flooding (causing physical damage to structures and sedimentation), and reductions in water quality and changes in the timing and quantity of water flows.[16] This itself may, operationally, involve actions at three levels; at the *local* or small area level, where just a

few communities may be involved; at the *national* level (or a sub-national region), which may involve impacts over a wide area impacting on several jurisdictions; or at the *transnational* level, if the watersheds includes parts of more than one country;

- At the *global* level, land degradation may have a more dispersed impact, reducing carbon sequestration and, therefore, contributing to climate change, and through damaging habitat, it may have an adverse impact on biodiversity.

Most of the operations supported by the Bank have focused at the farm or local level. If the incentive structure is right, farmers will usually take action to avoid reduction in the productivity of their own land, and it is often feasible to persuade local groups to collaborate to avoid degradation within a small watershed, for example, to restore the quantity and/or quantity of local stream flow, or the damaging effects of local run-off. Many Bank operations have attempted to support changes of this type. Occasionally they have addressed broader regional and national issues through the subsidization, or direct implementation, of on-farm activities such as tree planting or methods of run-off control (or in some cases through the introduction of legal requirements to comply with such practices). To the extent that they have been tackled in these efforts, global issues have been addressed by default, rather than consciously.

A variety of channels are evolving for addressing global issues, with the largest being the Global Environmental Facility (GEF). This provides grants and concessional funding to meet the agreed incremental costs of measures to achieve agreed global environmental benefits in the areas of biological diversity, climate change, international waters, and ozone layer depletion. Land degradation issues, primarily desertification and deforestation as they relate to the four focal areas, are also eligible for funding by the GEF. However, funding for the latter activities has been minimal to date, as the approaches to addressing 'global' issues are still evolving.

Financing through the GEF

In October 1995, the GEF Council approved the operational strategy for the GEF which guides the preparation of country driven initiatives. According to this strategy, GEF activities aim at maximizing agreed environmental benefits in the four focal areas while taking into consideration land degradation issues, particularly in those countries in Africa experiencing serious drought and/or desertification, consistent with the GEF Instrument. This requires that the problem have a global impact linked to the four focal areas, as opposed to a local or national one being addressed. Unfortunately, the linkages between land degradation and the focal areas are not well known and at the First GEF Assembly, held in New Delhi in April, 1998, it was agreed that further work should be carried out to clarify them.

The GEF Council has approved the following strategies to address land degradation:

- Focusing on maximizing the global benefits arising from the proposed interventions to prevent and control land degradation;
- Encouraging and supporting countries' efforts to integrate programming frameworks for biodiversity, climate change and international waters with land degradation;
- Making land degradation activities an integral part of the implementation of operational strategies for the GEF's focal areas;
- Complementing, not substituting for, ongoing and planned development efforts, concentrating GEF support on areas which do not receive adequate attention, which require coordinated, national, sub-regional and regional effort, and which will focus on global environmental benefits;
- Encouraging and supporting implementing and executing agencies' efforts to integrate in their mainstream programs activities geared to achieving global environmental objectives, based on the strength of their linkages to prevention and control of land degradation; and

- Keeping under review, in collaboration with concerned scientific and technical bodies, the evolution of knowledge in this area, to progressively sharpen the focus of the GEF activities addressing land degradation.

Table 2 provides examples of the types of land degradation interventions that might be financed under the four GEF focal areas. The World Bank, as one of the implementing agencies of the GEF, will seek to develop GEF activities that contribute to the Facility's role as a catalyst, facilitator and selective provider of funds.

Transboundary Financing

Although, the World Bank has traditionally focused its lending programs at local and national levels, projects on regional and trans-national scales are increasingly entering the Bank's lending portfolio. This is particularly true of projects totally or partially financed by the GEF and managed by the Bank. In addressing these regional and trans-boundary environmental problems, an integrated program is designed and coordinated regionally, yet implemented locally and nationally. Typical examples of such programs include the community-based natural resource and wildlife management project in Burkina Faso and Cote d'Ivoire, the village-based natural resource management project in Mali and Burkina Faso, the Aral Sea Basin program, and the Middle East Desertification Initiative.

Notes

11. Refer to Annex 1, Table A1 for project classification and descriptions.
12. See Lewis, Jeffrey. Community-Based Natural Resource Management in West Africa, pp 276-282 in Serageldin, Ismail and David Steeds (eds.) 1997. Rural Well-Being: From Vision to Action, Proceedings of the Fourth Annual World Bank Conference on Environmentally Sustainable Development. Washington, D.C.
13. World Bank "Mauritania: Second Livestock Project—Impact Evaluation Report," Operations Evaluation Department, 1998.
14. See Chapter 9 in Tiffen, M, M. Mortimore and F. Gichuki, 1994 "More People, Less Erosion: Environmental Recovery in Kenya," London, John Wiley, and Sons.
15. World Bank "Zimbabwe: Emergency Drought Recovery and Mitigation Project." Implementation Completion Report, 1995.
16. These effects are not invariably negative in their impact. Perhaps the most well known case is that of Egypt which has relied on sedimentation from the Nile to provide nutrients and the flow to reduce salt water intrusion into the delta. Both of these effects were adversely impacted by the construction of the Aswan Dam.

Table 2 — Activities in the interface between land degradation and GEF focal areas

Land Degradation	*GEF Focal Areas*					
	Climate Change		**Biodiversity**		**International Waters**	
Control	Carbon Emissions Control	Carbon Storage and Sequestration	In-Situ Species Conservation	Ecosystem Conservation	Integrated Watershed Management	Coordination of Regional & Sub-Regional Plans
Land Use Planning	Correspondence between land capability and use	Sustainable management of forests Zoning of land for non-agricultural uses	Protecting endemic species Conserving wetlands and critical habitats in drylands	Integrated , ecosystematic approaches to sustainable use and conservation of dry land biodiversity & livelihoods	Sediment and salt pollution control in shared river basins, lakes, and aquifers	Coordinated programs to protect aquatic ecosystem services and productivity
Farming and Grazing Practices	Alternatives to, and management of, grassland burning and slash-and-burn agric.	Pilot regeneration or upgrading of grassland and woodland for increased biomass	Conserving local varieties of crops and plant/animal species			
Community Forestry and Agroforestry	Plantations and sustainable fuel-wood energy Renewable energy sources and energy efficiency	National or regional program/institutional support for community-based afforestation and reforestation			Protecting hydrological balance and ecosystem services	
Water and Watershed Management			Pollution control for conservation of fresh water & marine biodiversity	Managing water use to protect aquifers and aquatic ecosystems	Pollution control in international watersheds for resource productivity	Exchange of information, monitoring, and coordinated action

Source: GEF Secretariat.
Notes: (1) Entries in boxes are intended for illustrative purposes, with no implication concerning priorities. (2) Activities identified are not necessarily marked for GEF interventions alone; collaboration with development agencies will generally be necessary. (3) Activities shown often yield multiple local benefits.

CHAPTER 4

The Role of the Bank in Combating Desertification

IMPLICATIONS OF THE CONVENTION

As noted in the previous chapter, the Bank and GEF have been broadening their activities in directions consistent with the Convention. However, if the Convention is to be imple- mented, more fundamental changes are likely to be required by both financing agencies and by the state Parties than have occurred so far. For the Bank, in particular, the Convention has implications for country strategies, policy frameworks, development of operational tools, rural development strategies, development of partnerships and synergies, and donor coordination.

Country Strategies

A review of the Bank's approach and performance in natural resource management[17] found that its efforts in this area were spasmodic. The primary focus was on overall economic development, and resource issues came to the fore in particular countries when there were major problems impinging on development, when some or all of the country team had a particular interest in the issue or, alternatively, when they were particularly stressed by the Borrower. In consequence, resource management issues were seldom mainstreamed into the assistance strategy and, when they were, they were likely to be downgraded when attention was drawn elsewhere by a change of circumstances or leadership. The central contribution of the Desertification Convention is that it requires the ratifying country parties to integrate the issue into their overall development strategy and predicates related support on their doing so. At the same time, it places an obligation on bilateral and multinational development institutions to do the same thing.

For the Bank, at the country level, the understanding between the borrowing member country and the Bank on the priorities for assistance is incorporated in the Country Assistance Strategy (CAS) paper, which is updated every one or two years. The level of treatment of environmental issues continues to vary widely, reflecting their salience in the country concerned. The present CAS approach is short term in nature and essentially reactive to events. From the point of view of the Bank-borrower relationship, effectively tackling problems such as desertification will require a longer term perspective. Taking into account the number of parties involved, a clearly articulated consensus will be required. Given the problems in achieving such a consensus, this might aim to cover more than a five year horizon, but be less specific than the earlier type of government five-year economic planning documents. The National Environmental Actions Plans (NEAPs), which were prepared in many IDA borrowing countries, had many of these characteristics. However, in many cases, they have had limited effectiveness, in large

part because they were insufficiently integrated with, and reflective of, the process of national development planning.[18] On the other hand, they did begin a process of participatory planning in environmental and related areas on which further efforts can be built. Several countries (particularly in Sub-Saharan Africa) have indicated an intention of updating the NEAPs prepared in the early 1990s.

Effective implementation of the Convention will require a renewed effort, in which donors could have a catalytic role, to evolve a broad consultative approach to development planning, involving as wide a range of stakeholders as possible and effectively including environmental and social issues. Not withstanding the above limitations, the Bank is working to enhance the treatment of the global environment issues in the CAS process. Initial work is being spearheaded by the Africa region, which has put in place a "CAS greening" program that includes global environment issues. It is hoped to intensify this effort in 5 to 6 countries over the next two years.

Rural Development Strategies

In 1997, the Bank Group elaborated a revised rural development strategy. This increased the emphasis on the sustainability of agricultural production and resource use and recognized the link between rural development and global environment issues. To help build this link into Bank operations, global environmental concerns related to land resource management are being integrated into sector activities through a Sustainable Land and Crop Management Thematic Team. This is giving special attention to issues of land degradation and desertification, and led the effort to prepare land quality indicators (see below) and related work.

To assist in mainstreaming these ideas, and to improve the dialogue among stakeholders, the Dryland Management Program and Thematic Team have been established. This is the Bank focal point for the Convention and represents the Bank on the Facilitation Committee. The Program has created a knowledge node on the World Bank's external web page,[19] as a part of the Bank's overall Knowledge Management System (KM). The Dryland Management node catalogues relevant knowledge subjects and can be easily accessed, searched and downloaded. With the same objective, a series of seminars is being held in collaboration with EDI/LLC both internally for Bank staff and externally.

To further support this effort, a best practice study of Dryland Management[20] has been prepared. This first reviews the economic, social and institutional context in which this problem is most frequently manifested, and which make land degradation in these areas more difficult to address than in more humid areas. It then discusses the evolving nature of pastoralism in arid and semi-arid areas; new thinking in the management of rangeland in these regions; efforts by the Bank and other donors to develop ways of supporting formal, community-based, management of natural resources; the potential for improved technologies in crop production in drylands; and improved measures to mitigate the effects of drought.

Operational Tools and Training

Work on devising projects and programs to tackle many global environmental issues has been handicapped by the scarcity of generally accepted tools for analysis. The Bank has been playing an active role in this area and has been particularly active in the development of "green accounting."[21] A major effort has been made to develop agricultural sector performance indicators, which can be used to provide a broader assessment of project performance and impact than the traditional methods. Specifically relevant to desertification are a set of land quality indicators which have been developed jointly with FAO and bilateral agencies.[22] Further efforts are being made to broaden this effort in relation to environmental concerns. For example, a draft concept guidance paper on "Land Degradation and Global Environmental Impacts" was prepared and is under review. Given that the GEF can only assist in programs to combat desertification to the extent that the problem has a global impact, this is an issue of cen-

tral concern, highlighted in the New Delhi Statement of the First GEF Assembly (April 1998). The GEF in its report to the meeting of Council in October 1998, noted that "representatives of the CCD Secretariat and the GEF Secretariat met in July 1998 to exchange views as to how they could best collaborate to better define such linkages. These discussions are being followed up with a view to preparing a joint paper before the Council Meeting in May 1999."

Building on its concept guidance papers, the Bank has initiated (with assistance from bilateral donors) a Global Overlays Program. This has as its objective of demonstrating, through specific country studies, how global environmental objectives such as reduction of greenhouse gases or desertification, and biodiversity conservation, can be included side-by-side with traditional objectives in sector analysis and planning. To date, the overlay studies have focussed primarily on forest and humid areas, but analyses of dryland areas are anticipated.

In parallel with these initiatives, the Economic Development Institute is undertaking a program of seminars on "Integrating Global Environmental Concerns in National Sustainable Development". This initiative has already piloted policy seminars with senior government officials and other stakeholders on land degradation and intensification in the Middle East and North Africa region, and biodiversity and land use in South Africa and Central America.

Operational Policies

Global environmental concerns have been reflected in the Bank's Operational Policy Statements (OPs) since the Rio Earth Summit in 1992. Policies on Environmental Assessment and Natural Habitats (OPs 4.01 and 4.04) require that national, trans-national, and global environmental issues be taken into account, and preclude Bank support to projects that would damage critical habitats. Bank-wide reviews of experience with environmental assessment (EA)[23] have highlighted the need to move EA upstream to make environment part of the criteria used for strategic choices and policy making. Follow-up action includes the Strategic Environment Assessment (SEA) initiative which responds to country needs for primarily sectoral and regional EAs. This is now being piloted in the Bank's Africa region in the areas of rural development, river basin management, and the mining and transport sectors.

The policy on Economic Evaluation of Investment Projects (OP 10.04) states that global environmental impacts are normally to be identified in sector work and EAs, and that global externalities should be included in the analysis of GEF funded projects, or where the recipient has made a relevant commitment under an international convention or related agreement.

Developing Synergies

This paper has referred on several occasions to the need to develop synergies in order to tackle global and national environmental problems and to do so in ways which provide positive incentives to the various parties involved to participate willingly. To date, the GEF has been most active in identifying possible synergies between land degradation and the global environmental concerns. These overlaps are illustrated in Table 2. The Desertification Convention provides a boost to such efforts, and the Kyoto Protocol on Global Climate Change (currently being negotiated) promises to take this process a stage further, opening up the prospect of allowing developed countries to contribute to the reduction of greenhouse gases through supporting carbon-sequestrating activities in low-income countries through the development of a global carbon market to reduce the overall costs of limiting greenhouse gas emissions.

The Bank has been active in developing such mechanisms. For example, it has developed a preliminary structure for a Prototype Carbon Fund, which would provide Bank client countries with the opportunity to obtain an equitable share of the cost savings generated and to obtain access to environmentally friendly technologies on reasonable terms. In June 1998, the Bank also launched the Carbon Forestry and Land Use Management Action Plan to

evaluate the development benefits of trade in forest and soil based carbon offsets within the framework of the Kyoto Protocol. These could be a significant source of funding for land management initiatives in dryland areas. These efforts are "works-in-progress" and their development will be conditional on further progress in the finalization of the Kyoto Protocol.

Partnerships

A central aspect of the Convention and its application is the development and fostering partnerships as a means of making improved use of existing channels and resources rather than to create new ones in an already crowded landscape. This approach is exemplified by the Global Mechanism (GM) (see Chapter 1), which operates in a collaborative manner. Managed by IFAD, in partnership with UNDP and the World Bank, the GM operates under the Collaborative Institutional Arrangement (CIA) agreed between the parties in October, 1997. The meetings under the CIA resulted in a general consensus on the goals and functions of the GM and on its aim of strongly collaborating with other international conventions to create financial synergies, where at all feasible.

As an element in this effort the Bank has been collaborating with UNDP in assisting member countries of the Convention in developing National Action Plans (NAPs). UNDP/UNSO have now assisted more than 35 African and Latin American countries to initiate their NAP process. This experience has indicated the importance of designating a national focal point for this process with adequate resources and the necessary authority and credibility to ensure participation of all concerned stakeholders, and to develop an effective coordination mechanism among existing ministries and departments.[24] This is also important to ensure that the process maintains momentum and some concrete results can be produced.

At the operational level, the Bank, through the Dryland Management Program, is developing partnerships with NGO's and bilateral activities to develop expanded programs and projects, for example in Brazil. The Program is also partnering with other agencies such as Club du Sahel, NORAD, to undertake research, support conferences and training, and disseminate know-how.

Donor Coordination

In the past, the actions of donors have not always contributed effectively towards the development of coherent economic or development policies. Reflecting their own domestic stakeholders, different donor agencies are likely to have different priorities. On occasion this has led to conflicting advice being given to partner governments. Recognizing this, the Convention provides that "the Parties shall develop operational mechanisms, particularly at the national and field levels, to ensure the fullest possible coordination among developed country Parties, developing country parties and the relevant intergovernmental and nongovernmental organizations, in order to avoid duplication, harmonize interventions and approaches, and maximize the impact of assistance. In affected developing country parties, priority will be given to coordinating activities related to international cooperation..."(Article 14, para. 2).

In addition, the desirability of participative approaches to the development of environmental policies and programs has generally been supported by the donor community. If such approaches are to be feasible and effective, a degree of coordination of external inputs is desirable. Ideally, coordination would be undertaken by the developing country Party. However, the resources required to coordinate the efforts of the many formal and nongovernmental donor agencies, threaten to overwhelm the limited resources available to many of the smaller and poorer recipient countries. In such cases, it would be desirable for one of the donor countries or agencies to act as convenor/coordinator to facilitate this process, for example, through the recognition of a *chef de file*, as has been proposed by OECD/Club du Sahel.[25] In the spirit of the Convention, these efforts should also be effectively coordinated with the overall aid dialogue through the Consultative Group process coordinated

by the Bank, so that environmental/sustainability issues can be brought into the review on a regular basis.

Notes

17. World Bank "Renewable Resource Management in Agriculture," Operations Evaluation Department, 1989
18. See: Speirs M. and H.S. Marcussen, 1998 "Limits to Environmental Planning in a World of Structural Adjustment: The Case of Burkina Faso," IIED, Issue Paper No. 75
19. *www.worldbank.org* Development Topics—Environment —Dryland Management/Combating Desertification.
20. Noragric, "Good Practices in Dryland Management."
21. Hamilton, Kirk, and Ernst Lutz. Green National Accounts: Policy Uses and Empirical Experience. Environment Department Paper No. 39, July 1996. World Bank, Washington, D.C.
22. Herweg, Karl; Kurt Steiner and Joep Slaats, July 1998, "Sustainable land Management—Guidelines for Monitoring—Workbook and Toolkit." Center for Development and Environment, Berne.
23. See Operations Evaluation Department "Environmental Assessments and National Environmental Action Plans," Precis Number 130, December 1996, and Environment Department, "The Impact of Environmental Assessment: Second Environmental Assessment R of Projects Financed by the World Bank, July 1992–June 1995," August 1996.
24. UNDP. National Action Programmes: Early Lessons and Elements for a Revised Approach. New York (undated).
25. This point is also emphasized by UNDP, *op. cit.* p.8.

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Annex 1

Description of World Bank-Supported Projects that Address Land Degradation in Dryland Areas, Fiscal 1990–98

Table A1

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Africa				
Angola: Rehabilitation of Lobito-Benguela Corridor	2	45.6	58.9	Restores water supply and sanitation services to the city of Lobito. Includes components to address storm drainage and erosion control, and to strengthen the environmental monitoring and management capacity of local agencies.
Angola: Agriculture Rehabilitation	2	40.0	40.0	Assists the Ministry of Agriculture to restart the Adaptive Trials Program, initiate extension services, and review the current structure and activities of the Ministry of Agriculture.
Benin: Management of Natural Resources	1	14.1	24.4	Defines and tests pilot programs aimed at stopping and possibly reversing degradation of renewable natural resources, particularly in rural areas. Provides legal framework for land tenure issues and establishes monitoring and evaluation systems.
Benin: Environmental Management	2	8.0	9.3	Develops a national environmental management capacity to conceive, plan and implement policies and programs; monitor and enforce legislation; strengthen coordination mechanisms; and develop information systems to better integrate environmental concerns in development plans.
Benin: National Parks Conservation and Management	1	6.0	6.0	Targets National Parks Conservation including: a) policy and institutional reforms, b) protection activities for the Pendjari and W. National Parks, c) buffer zone wildlife management, and d) environmental monitoring.
Benin: Agriculture Sector Investment	2	40.0	40.0	Covers most of the public sector agriculture program including research, extension, livestock development, rural infrastructure, forestry and natural resource management, and fisheries.
Benin: Community Based Food Security	2	9.7	19.1	Incorporates grassroots initiatives into strategies for promoting food security, watershed management, anti-erosion works, institution building, and training. Focuses on enclave in north characterized by poor soil quality and high erosion rates.
Burkina Faso: Environmental Management	1	16.5	25.2	Seeks to reverse natural resource degradation, secure sustainable agricultural growth, restore biodiversity, and manage forests and wildlife sustainably. Uses village-based innovative participatory approach to design and implement community land management plans.
Burkina Faso: Private Irrigation	2	5.0	5.0	Supports the government's National program for irrigation development by promoting the development of privately built, funded and managed small- and medium scale irrigation schemes and complementary small-scale commercial activities.
Burkina Faso: National Community-Based Rural Development	2	40.0	40.0	Supports priority investments and operations and maintenance arrangements of rural infrastructure in Burkina Faso.

Burkina Faso: Agricultural Sector Adjustment Loan	2	28.0	70.0	Supports the government's sectoral adjustment program to promote sustainable growth in the agricultural sector. Includes a component that addresses natural resource management and land tenure issues.
Cameroon: Agriculture Extension Training	2	21.0	31.1	Assists the government in implementing a national agriculture extension strategy. Extension recommendations focus on improved cultivation techniques, planting density, seed germination, and tillage -- all of which are expected to expand vegetative cover and/or improve soil fertility and structure.
Cameroon: Forestry and Environment Project	1	10.0	10.0	Assists the government to establish and implement a National Resource Management and Forestry Conservation Strategy.
Central African Republic: Natural Resources Management	2	21.0	34.3	Strengthens institutional capacity for protecting and managing forest and wildlife resources by improving the legislative framework, implementing incentives for sound forestry and wildlife management, and conducting forestry research. Project is directed toward humid areas more than the dry sub-humid northern fringe of the country.
Central African Republic: Livestock Development and Rangeland Management	2	16.6	32.0	Facilitates policy and legislative reforms in the livestock sector; strengthens existing institutions to develop, manage and improve agro-pastoral and wildlife management areas; and provides credit for private and public sector investments. Aims to increase livestock productivity, improve land management, and minimize land-use conflicts.
Chad: Household Energy	2	5.3	5.3	Aims to increase the sustainable supply of woodfuels, improve the efficiency of household fuels use in urban centers, and to enhance the role of the private sector in the household energy sector.
Cote d'Ivoire: Forestry Sector	2	80.0	146.8	Facilitates implementation of the government's Emergency Action Program to halt rainforest destruction, ensure sustainable production of industrial timber, improve domestic processing efficiency, protect national parks, and coordinate agriculture and forestry land-uses. Components include establishing new plantations and research in natural forest management, agro-forestry, regeneration of vegetative cover, prevention of bush fires, and the effects of deforestation on the climate and secondary forest products, among others.
Côte d'Ivoire: 2nd Forestry Sector	1	40.0	40.0	Extends activities undertaken under the first project to priority forests in the Savannah region, i.e. implementing policy reforms and forest management plans for natural forests and plantations. Includes rehabilitation measures and provisions for controlling encroachment on 3.5 million ha of gazetted forests
Côte d'Ivoire: Rural Land Management and Community Infrastructure Development	2	41.0	41.0	Implements a community-based program for the development and management of natural resources and rural infrastructure; creates planning, decision-making, supervisory and monitoring capabilities at the local level; and improves the legislative framework for participatory development. Includes component to strengthen land tenure security.
Côte d'Ivoire: National Environment Program	1	10.0	10.0	This is a Program of Actions to support National Environmental Agenda Actions.

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Eritrea: Environment	1	10.0	10.0	Provides support for implementing the National Environmental Management Plan.
Ethiopia: Calub Energy Development	2	74.3	136.0	Mitigates the negative environmental impacts of rapidly depleting peri-urban forests by inducing replacement of woodfuels with LPG and kerosene in urban households.
Ethiopia: National Fertilizer	2	120.0	230.4	Improves soil fertility, food security, and institutional capacity.
Gambia: Agricultural Services	2	12.3	17.2	Addresses deterioration of soil fertility by improving research and extension services for agriculture, livestock husbandry, and natural resource management.
Gambia: Environmental Management Capacity Building	1	2.3	3.0	Builds capacity within the National Environment Agency for environmental management and planning. Components include institutional strengthening, policy formulation, environmental education and public awareness, monitoring of environmental quality, information management, and contingency planning and disaster preparedness.
Ghana: Agricultural Research	2	22.0	29.5	Revitalizes agricultural research system to better addresses farmers' needs and promote sustainable use of natural resources.
Ghana: Agriculture Extension	2	30.4	40.0	Streamlines and strengthens agricultural extension system.
Ghana: Environmental Resource Management	1	18.1	35.9	Strengthens capacity of government and people to manage environmental resources. Components include staff training, public awareness, and establishment of systems for environmental management and early warning of environmental pollution or degradation. Also promotes improved land management practices through community involvement in planning and implementation of measures to minimize degradation.
Ghana: Livestock	2	22.5	41.0	Includes a component to improve rangeland utilization and resource management.
Ghana: Natural Resource Management Project	1	9.3	18.0	The project seeks to protect, rehabilitate, and sustainably manage land, forest, and wildlife resources and to sustainably increase the income of rural communities who own theses resources.
Guinea: Forestry and Fishery Management	2	8.0	23.0	Establishes institutions for managing forests and fisheries, particularly in ecologically sensitive areas. Includes a pilot program to strengthen farmers' land rights near protected areas. Much or most of the project is directed toward humid parts of the country.
Guinea: National Agricultural Services	2	35.0	35.0	Improves delivery of agricultural services to farmers by coordinating donor interventions in the areas of agricultural research, extension, and livestock services. Components focus on policy and institutional improvements, investments in research, dissemination of technologies to increase productivity and promote natural resource conservation, and animal production and health services.
Kenya: Agricultural National Extension II	2	24.9	50.0	One component expands extension services to six new areas and develops two pilot programs in arid and semi-arid areas.
Kenya: Forestry Development	1	19.9	64.6	Conserves and protects indigenous forest resources as well as soil and water on farms and rangelands by alleviating fuelwood shortages. Supports tree farming, extension services to smallholder and rural communities; strengthens institutional capacity; upgrades forestry research and education; and

Kenya: Drought Recovery	1	27.25	2.3	Alleviates drought impacts through measures to regenerate productive capacity in agriculture and livestock production, improve road access to arid districts, and enhance institutional capacity at the district level to deal with drought. Over the long-run, seeks to address underlying causes that make populations increasingly vulnerable to drought.
Kenya: Agricultural Sector Management I	2	19.4	16.0	Two components address natural resource issues: strengthening the government's capacity to conduct surveys and remote sensing (including GIS), and developing capacity to prepare and implement a National Environmental Action Plan.
Kenya: Arid Lands	1	22.0	25.1	Expands long-term drought mitigation measures to avoid the need for emergency interventions. Other activities include: support for resource management, livestock marketing initiatives, and community projects to improve livelihoods of arid land populations.
Kenya: National Agriculture Research II	2	39.70	60.0	Ensures adequate technology for farmers to increase agricultural growth, to provide incremental employment in agriculture, and to conserve the productive potential of the natural resource base.
Lesotho: Maluti/Drakensberg Transfrontier Conservation Area	1	10.0	10.0	Supports the creation of a Transfrontier Conservation and Development Area in the Maluti/Drakensberg Mountain.
Madagascar: Environment Program	1	26.0	85.5	Promotes conservation of biodiversity, soils, and other natural resources by facilitating community participation in resource management, strengthening the legal framework and related institutions and policies, and improving land tenure security. Much or most of the area affected by the project is in humid parts of the country.
Madagascar: Pilot Extension	2	3.7	5.4	Tests a strategy to provide extension services in 5 districts. Extension recommendations are expected to convey environmentally sensitive farming techniques, including crop rotations, continuous land cover, agro-forestry, anti-erosion measures, alley-cropping, contour planting, zero-tilling, composting, and proper use of pesticides and chemical fertilizers.
Madagascar: 2nd Environment Program	1	30.0	120.0	Seeks to reverse current environmental degradation trends and to promote sustainable use of natural resources, including soil, water, forest cover and biodiversity. Also aims to integrate environmental considerations into macroeconomic and sectoral planning processes.
Madagascar: Agriculture Extension	2	25.2	39.0	Extends extension services developed during the pilot project to a broader range of farmers, with the aim of improving agriculture productivity and environmental management.
Madagascar: Energy Sector Development Program	2	46.0	132.5	Includes an objective to alleviate deforestation problems by reducing the impact of woodfuel utilization. The energy efficiency program concentrates on woodfuels that will reduce deforestation. Only the extreme southern and southeastern part of the country is dry sub-humid.
Malawi: Environmental Management	1	12.4	12.4	Supports the formulation and implementation of enhanced environmental policies, institutional arrangements, and priority investments which integrate environmental strategies in the formulation and implementation of Malawi Socio-Economic Development Plan.

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Mali: Agricultural Services	2	24.4	27.1	Improves crop, livestock, and forestry extension services to address food security and environmental management issues.
Mali: Irrigation Promotiom	2	4.2	4.2	Provides technical and institutional support to private investment in sustainable irrigated agriculture.
Mali: Natural Resource Management	1	20.4	32.1	Introduces a rational land use system to reverse degradation of natural resources. Facilitates community participation, develops an environmental information system, and strengthens the national natural resource management strategy.
Mauritania: Agriculture Services	2	18.2	19.8	Strengthens links between extension, research, and agricultural training to increase agricultural productivity in an environmentally sustainable manner.
Mauritania: Natural Resource Management	1	18.0	20.0	Seeks to halt soil degradation by facilitating natural revegetation processes in rangelands and forests and fostering greater community-based biodiversity conservation at the village level. Supports increased community participation in the management of the land, water and vegetation; research; extension; and dune anchoring.
Mozambique: Agriculture Services Rehabilitation	2	35.0	41.0	One component addresses land use and management services, including collection of basic date on land tenure, land use, and conservation needs.
Mozambique: Rural Rehabilitation	2	20.0	23.0	One component provides information on land use patterns to assist in planning and facilitating resettlement of returnees and developing land policies that provide greater tenure security for smallholders.
Niger: Agriculture Services	2	18.0	19.8	Supports extension services for agricultural, livestock and environmental protection programs.
Niger: Natural Resources Management	1	26.70	36.9	Seeks to reverse the process of land and natural resource degradation by assisting 380 rural communities in the design and implementation of natural resource management activities and by strengthening the government's capacity for natural resource management initiatives.
Nigeria: Agriculture Research	2	78.0	104.0	Revitalizes agriculture research system and strengthens links with extension activities.
Nigeria: Agriculture Technology	2	42.5	60.0	Provides technical support for Bauchi, Kano and Sokoto states. Addresses livestock, agro-forestry, and soil and water conservation.
Nigeria: Environmental Management	1	25.0	37.7	Strengthens environmental organizations; establishes a data collection system to track changes in environment quality over time; and conducts studies to address existing degradation.
Senegal: Agriculture Research II	2	18.5	38.9	Develops an applied research program to target technical problems in natural resource management, focusing on priority agricultural zones.
Senegal: Agriculture Services	2	17.1	20.2	Improves crop and livestock extension services.

Senegal: Agriculture Sector Adjustment Loan	2	45.0	50.0	Includes a component to reform existing legislation to better facilitate participatory natural resource management.
Senegal: Energy Sector Adjustment	2	100.0	100.0	Supports a comprehensive program of reforms in the energy sector including liberalization of petroleum sector, private sector participation in the power sector, and the transfer to local communities of responsibilities for use and management of forest resources.
Senegal: Sustainable and Participatory Energy Management	2	5.2	9.9	Seeks to meet demand for household fuels without loss of forest cover or biodiversity, by implementing and monitoring 300,000 ha of community-managed, environmentally sustainable forest resource systems; promoting private sector inter-fuel substitution and improved stove initiatives; and institutional strengthening. The project also aims to reduce the loss of carbon sequestration capacity.
Tanzania: Forest Resources Management	1	18.3	25.5	Builds institutional capacity for land-use planning, forestry management, and strengthening property rights. Supports social forestry and protection of 400,000 hectares of woodland.
Tanzania: River Basin Management and Smallholder Irrigation Improvement	2	26.3	30.0	Strengthens the government's capacity to manage water allocation and address environmental concerns, upgrades irrigation infrastructure, and improves stakeholder participation in basin management and irrigation scheme operation in the Rufiji and Pangani river basins. Includes component to conduct studies on soil degradation and sediment flows to determine appropriate in-stream flows and operating rules.
Tanzania: National Agriculture Extension II	2	31.1	32.9	Improves the delivery of extension services to smallholders to enhance farm productivity and incomes. Encourages water conservation, contour planting, minimum tillage, composting, agro-forestry and better integration of crops and livestock in order to maintain or enhance soil fertility and decrease erosion.
Zambia: Environment Support Program	1	12.8	12.8	Supports implementation of the NEAP to provide an integrated inter-sectoral approach to financing environmental improvements. Addresses environmental policy, legislation and planning reform; institution building; water, forest, wildlife and range management; and land administration. Only the southern border of Zambia is in a designated dryland area.
Zimbabwe: Forest Resource Management and Development	1	14.5	64.1	Supports conservation of indigenous forests and the environment, including the creation of 64,000 hectares of wildlife buffer zones. Improves fuelwood production, forest management and control, and community participation.
Zimbabwe: Biodiversity Conservation	1	5.0	5.0	Strengthens biodiversity conservation in Gonarezhou National Park and the Southeast Lowveld through, among other things, support for community-based projects, promotion of sustainable wildlife utilization and other forms of land use that are compatible with biodiversity conservation.
Zimbabwe: Park Rehabilitation and Conservation Project	1	62.5	62.5	Provides institutional support and infrastructure rehabilitation and expansion to conserve wildlife resources and to protect and increase the economic productivity of the wildlife/tourism/fisheries sectors.

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Middle East and North Africa				
Algeria: Sahara Development	1	57.0	93.2	Strengthens institutional capacity to monitor water use and soil quality, conduct applied research, provide extension services, and conduct environmental assessments on future investments in the sector. Develops drainage and irrigation infrastructure and promotes rehabilitation of oases.
Algeria: Pilot Forestry and Watershed Management	1	25.0	37.4	Develops a long-term action program to improve protection and management of natural resources, specifically forests, watersheds, and protected areas. Strengthens institutions and develops the policy and technical basis for replication of suitable project components in a national resource management program. Supports studies, reforestation, and rehabilitation of 10,000 hectares of degraded land.
Algeria: Cadastre	2	33.0	96.0	Creates the legal and institutional framework to ensure a functioning land market.
Algeria: Research and Extension	2	32.0	74.9	Promotes more efficient use of land and water resources. Tests a series of improved cultivation practices to reduce soil erosion and loss of fertility. Conveys results of research in contour ploughing, bench terracing, tree planting, crop rotations, and reduced-impact farm machinery.
Egypt: Matruh Resource Management	1	22.0	30.8	Supports research and extension activities which focus on dryland farming, livestock production, and range management. Includes components for project coordination (aimed at strengthening community participation and facilitating dialogue with other institutions), as well as rural finance.
Egypt: Agriculture Modernization	2	121.0	244.0	Provides for an office of environmental advisor; supports training initiatives; and strengthens capacity for environmental analysis of subprojects.
Egypt: Sohag Rural Development	2	25.0	50.0	Strengthens local institutions' capacity in planning and managing natural resources, improves rural infrastructure, and provides rural credit services to the poor and women.
Iran: Sistan Irrigation and Drainage	2	45.0	70.0	Supports government efforts to reduce environmental degradation. Components include institutional strengthening, on-farm improvements, extension services, research, training, and promotion of women in development.
Iran: Irrigation Improvement	2	157.0	293.0	Rehabilitates and improves irrigation and drainage systems in four subprojects; upgrades research and extension to increase crop output and farm incomes; and improves the institutional capacity for planning and implementation within the sector. The project is expected to improve water use efficiency and protect soil from water logging and salinization in existing irrigation areas.
Jordan: Technical Assistance for Agriculture	2	6.6	13.3	Facilitates agriculture policy reforms and improves services to farmers and livestock producers. Includes measures to protect and optimize use of water resources and build capacity for research and extension. Addresses industrial pollution of water supply used for irrigation and salinity associated with overdrafting.
Lebanon: Agricultural Infrastructure and Institutional Development	2	33.5	50.0	Implements the first portion of the government's program to rehabilitate the agriculture sector, which aims to conserve and develop soil and water resources, increase agriculture production and incomes, and improve access to rural areas. The natural resource management component includes demand-driven activities in land terracing and reclamation, and construction of small hill ponds to conserve water runoff.
Morocco: 2nd Forestry Development	1	49.0	100.0	Prepares and tests components of a national watershed management program to address soil erosion; strengthens forestry planning and policies; and assists in maintaining and improving forest resources. Promotes range management, stabilization of sand dunes, nature conservation, research, and training.

Morocco: Agricultural Sectoral Investment Loan II	2	50.0	300.0	Facilitates policy reforms, institutional capacity-building, irrigation services, crop diversification, forest management plans, plantation establishment, rangeland rehabilitation, and improved cultivation techniques. Represents 1991-92 portion of government's $640-million agriculture investment program.
Morocco: Environmental Management	1	6.0	10.8	Strengthens institutional and regulatory framework for environmental management.
Morocco: Lakhdar Watershed Management Pilot	1	4.0	4.0	Tests a participatory approach to improve land use and natural resources management in mountainous area. Components include a) natural resources management and erosion control, b) community investments, and support for institutional strengthening.
Morocco: Emergency Drought Recovery	2	100.0	333.0	Alleviates impacts of current drought through measures to regenerate productive capacity of agriculture and livestock sectors. Improves rural infrastructure, develops an early warning system and alternative cropping strategies for drought conditions, and strengthens capacity to monitor the agricultural and environmental impacts of drought.
Tunisia: Research and Extension	2	17.0	34.5	Improves institutional and organizational framework to increase extension effectiveness. Supports soil conservation and other efforts to address problems in arid zones, a pilot extension program for women, and improves policy makers' access to information.
Tunisia: Forestry Development II	1	69.0	148.1	Addresses growing demand for wood products, over-grazing, and other environmental pressures by promoting community-based forest and rangeland management.
Tunisia: Agriculture Sector Investment Loan	2	120.0	383.6	Finances priority investments in water mobilization and efficient utilization, natural resource conservation, and animal health, as well as land consolidation to achieve sufficient economies of scale in land management. Resource management component focuses on soil erosion control and agro-pastoral improvement of rangeland.
Tunisia: National Rural Finance	2	65.0	420.0	Includes a component to develop a climatic risk management strategy.
Turkey: E. Anatolia Watershed	1	77.0	121.0	Supports watershed rehabilitation activities in 54 microcatchments. Addresses rural poverty and natural resource degradation by restoring fertility and reducing erosion in upland areas. Focuses on improving fuelwood, fodder, and agricultural production through provision of rural extension services.
Yemen: Land and Water Conservation	1	32.8	47.6	Promotes conservation of key indigenous forest areas, tree planting, soil and water conservation, watershed management, and terrace stabilization.
Yemen: National Agricultural Sector Management Support	2	14.4	22.0	Develops capacity in agricultural research, technical training, and field extension services.

(continued)

Table A1 *(continued)*
Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
East Asia and Pacific				
China: Henan Agricultural Development	2	110.0	196.0	Improves agricultural productivity; includes a component to alleviate soil salinity and waterlogging.
China: Tarim Basin Irrigation	2	125.0	212.1	Increases agricultural and livestock production; includes component to restore natural vegetation along desert fringes to halt expansion and maintain the environmental integrity of Tarim Basin oases.
China: Loess Plateau	2	150.0	259.0	Increases agricultural production and incomes. Includes component to reduce sediment inflows to Yellow River by focusing project activities in areas of the basin undergoing severe soil erosion.
China: Loess Plateau Watershed Rehabilitation Project II	2	150.0	250.0	Creates sustainable crop production on high-yielding level farmland thereby replacing the areas devoted to crops on erodible slope lands of the Yellow Plateau. The project plants the slope lands to a range of trees, shrubs and grasses for land stabilization and the production of fuel, timber and fodder. This will reduce sediment runoff from slope lands and gullies.
China: Environment Technical Assistance	1	50.0	70.0	Strengthens NEPA and CAS, national environmental institutions focusing on industrial pollution control and natural resource management. Components include coordination of environmental monitoring and ecological research, among others. CAS implements the Chinese Ecosystem Research Network and the Biodiversity Research and Information Management Program.
China: Irrigation Agriculture Intensification	2	335.0	593.0	Expands irrigation schemes to increase agricultural productivity in the provinces of Anhui, Jiangsu and Shandong, the latter of which encompasses some dryland areas. Irrigation and drainage systems are expected to mitigate drought, waterlogging, soil salinity and flooding.
China: Forest Resource Development	1	200.0	353.0	Addresses resource management issues in timber plantations, watershed protection forests, and nature reserves. The Nature Reserves Management component is funded in part by a $17.9 million GEF grant.
China: Songliao Plain Agriculture Development	2	205.0	382.3	Seeks to expand the productive land area by improving irrigation and drainage facilities and identifying appropriate uses for wastelands, intertidal areas, and marginal lands (i.e. aquaculture and fruit orchards). Addresses problems of waterlogging and soil erosion.
China: Key Studies Development	2	131.2	238.6	Improves national capacity for scientific research and Training. Environmental issues are the focus of 17 of the 133 research laboratories supported by the project. Of these, three laboratories conduct research on natural disasters and two study soil erosion and agriculture development of arid regions.
Thailand: Land Titling II	2	30.0	73.0	Extends secure, documented land tenure to rural landholders, thereby facilitating their access to institutional credit, encouraging greater investment in land management, and increasing agricultural productivity and farm incomes. Drylands exist in only a small portion of the project area.
Thailand: Land Titling III	2	118.1	206.5	Improves land tenure. Drylands exist in only a small portion of the project area.

South Asia				
India: Integrated Watershed Development – Plains	1	62.0	91.8	Seeks to reverse ecological degradation in rainfed and dryland areas of Gujarat, Orissa and Rajasthan. Emphasizes vegetative soil and moisture conservation measures, such as planting vetiver grass, improving ground cover, and encouraging land use according to people's needs and resource constraints.
India: Integrated Watershed Development – Hills	1	88.0	125.6	Seeks to reduce environmental degradation and flooding through appropriate soil and moisture conservation methods. Strengthens management of non-arable lands.
India: Punjab Irrigation and Drainage	2	165.0	246.0	Improves agricultural productivity. Includes studies to address drainage problems and construction of drainage infrastructure.
India: Maharashtra Forestry	1	124.0	142.0	Seeks to reduce environmental degradation, maintain or improve biodiversity, increase productivity of forest lands, and develop wastelands. Promotes community participation and investments for land treatments, particularly on degraded land.
India: Uttar Pradesh Sodic Lands Reclamation	2	54.7	80.2	Develops models for environmental protection and improved agricultural production through large-scale reclamation of sodic lands. Supports institutional development.
India: Renewable Resource Development	2	190.0	440.0	Includes an objective to promote environmentally sound investment consistent with maintaining India's limited forest resources.
India: Andhra Pradesh Forestry	1	77.4	89.0	Increases forest productivity and quality, and streamlines and strengthens sector policies to reverse the process of forest degradation.
India: Forestry Research Education	2	47.0	56.7	Strengthens capacity of national and state institutions to plan and undertake research programs, forestry education and research, extension, policy analysis, project preparation, statistical reports on forest resource use, and conservation of biological resources in protected areas.
India: Assam Rural Infrastructure	2	126.0	146.6	Improves extension services for horticulture, fisheries, and livestock to poor rural communities; strengthens institutions for seed production and land administration; facilitates provision of small-scale irrigation and rural roads; and supports studies to improve water and soil management.
India: Madhya Pradesh Forestry	2	58.0	67.3	Strengthens institutional capacity to conduct policy analysis, complete land-use plans, and facilitate participation of forest communities in resource management. Promotes natural forest regeneration through enrichment planting, improved silvicultural practices, and forest floor management. Provides infrastructure and facilities for extension and research programs. Supports biodiversity conservation through improved management of 12 high-priority Protected Areas.
India: Bihar Plateau	2	117.0	132.2	Alleviates poverty of tribal people in the southern plateau of Bihar state. Invests in infrastructure; strengthens planning, coordination and monitoring of local institutions; facilitates community participation; and promotes environmentally sustainable activities. Includes components to strengthen capacity for applied research and technology transfer, aimed in part at reducing soil erosion and increasing the productivity of dryland farming.
Pakistan: Agricultural Research II	2	57.3	81.9	Strengthens research capabilities at the province-level and improves links with extension services, focusing on farmers' most critical productivity problems (i.e. livestock and soil management).

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Pakistan: Environmental Protection and Resource Conservation	1	29.2	57.2	Strengthens federal and provincial environmental protection institutions, legislation, policies and programs, and professional education in natural resource management. Includes components to rehabilitate, protect, develop and manage degraded agro-ecological resources (i.e. watersheds, rangelands, forest and wildlife resources).
Pakistan: Northern Resource Management	1	28.8	40.3	Improves the policy framework and institutional capacity for land management (strengthens land use planning unit and adds social forestry wing). Implements a pilot program to encourage community participation in planning, implementing, and financing natural resource management plans.
Pakistan: Fordwah East Sadiqia Irrigation & Drainage	1	54.2	70.6	Seeks to increase productivity in an area characterized by severe degradation and waterlogging.
Pakistan: Forest Sector Development	2	24.9	33.8	Improves the productivity of Punjab's forestry sector through expansion of farm forestry and plantations, and community-based rehabilitation and management of scrub forests and rangelands. Includes a small component to conduct biodiversity inventories in existing plantations.
Pakistan: Balochistan Natural Resource Management	1	14.7	17.8	Strengthens institutions responsible for environmental protection and natural resource management Improves policy-making, increases public awareness of environmental impacts, and strengthens research capabilities. Sub-projects focus on pressing natural resource degradation problems, including the need for sand dune stabilization, rangeland and watershed rehabilitation, and forest conservation.
Pakistan: Balochistan Community Irrigation Agriculture	2	26.7	38.5	Develops sustainable farmers' organizations to maintain and operate irrigation systems, enhances farmer participation in planning and construction of irrigation works, and addresses drainage, flood protection and soil erosion.
Pakistan: Private Sector Ground Water	2	56.0	104.8	Seeks self-sustainability of the irrigation and drainage systems in Punjab through disinvestment of scarp tubewells, improvement of irrigation conveyance facilities, prevention of saline groundwater intrusion in fresh aquifers, and project monitoring and evaluation.
Pakistan: National Drainage Program	2	285.0	785.0	Seeks to prevent loss of agricultural land due to poor drainage by improving land management practices, strengthening institutions, and initiating changes in the legal and regulatory framework. Addresses problems of waterlogging and salinity.
Sri Lanka: Environmental Action 1	2	14.8	20.7	Assists the government in strengthening the institutional and policy framework within which the World Bank and other donors provide environmental assistance. Supports participatory approaches to environmental management.
Sri Lanka: Agriculture Extension II	1	18.3	14.3	Facilitates participation of the private sector, local communities, NGOs, and the donor community in implementing the National Environmental Action Plan. Supports capacity-building, policy reforms, and studies aimed at sustaining land productivity.

Europe and Central Asia				
Albania: Forestry	1	8.0	21.6	Restores degraded State-owned forest and pasture areas and promotes their sustainable use, promotes conservation of natural forest ecosystems, and has a component which targets reforestation of sensitive areas.
Azerbaijan: Farm Privatization Pilot	2	14.7	28.8	Assists the government to implement a pilot privatization program of representative state and collective farms; improve support services to the agriculture sector; provide financing for on and off-farm infrastructure, and strengthen institutions involved in land privatization and farm restructuring. Private land ownership is expected to increase the incentives for resource management.
Kazakhstan: Irrigation and Drainage Improvement	2	80.0	118.0	Rehabilitates irrigation and drainage infrastructure to mitigate environmental impacts; develops environmental management capacity in irrigation management institutions; implements environmental protection measures; and strengthens institutions. Addresses waterlogging and salinization.
Macedonia: Irrigation Rehabilitation	2	12.5	32.46	Enables farmers to fully regain the potential of the irrigated agriculture through rehabilitation of the three deteriorated irrigation schemes with high priorities, and enhances the sustainability and efficiency of the irrigation schemes by introducing participatory management.
Turkey: Agricultural Extension II	1	63.0	145.4	Strengthens extension service in 19 provinces, supports 14 research institutes, initiates pilot programs to train women in agriculture, and establishes veterinary clinics. Based on research findings, conveys recommendations to farmers on measures to halt degradation of environmental and agricultural resources.
Turkey: Agricultural Research	2	55.0	77.6	Promotes research aimed at improving the productivity and sustainability of agriculture, livestock, forestry and fisheries (including soil conservation and fertility). Strengthens institutional capacity for research coordination, monitoring and evaluation, and policy analysis.
Turkey: Eastern Anatolia Watershed Rehabilitation	2	77.0	121.0	Restores soil fertility and reduces erosion in 54 micro-catchments by promoting improved tillage practices, rehabilitation of range and forest lands, and the establishment of conservation areas to protect genetic resources. Emphasizes community based resource management.
Turkey: Privatization of Irrigation	2	20.0	58.78	Assists water user organizations (WUOs) in the sustainable use and management of irrigation systems hence contributing to improved agricultural productivity.
Uzbekistan: Cotton Improvement	2	66.0	84.6	Supports liberalization of the cotton sector to expand exports and improve efficiency. Includes a component to encourage research, development, and adoption of technologies to raise land productivity and mitigate environmental damage, such as improved drainage systems and integrated pest management techniques.

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Latin America and the Caribbean				
Argentina: Forestry Development	2	16.0	26.2	Promotes efficient and sustainable growth of forest plantations and timber processing industries, and conducts a comprehensive study on measures to prevent soil erosion and habitat destruction in the Patagonia Region.
Bolivia: Environmental Technical Assistance	1	4.8	5.3	Strengthens the capacity of environmental institutions to formulate policies and promote sustainable resource management. Includes human resources development, legal and regulatory reform, and environmental education.
Bolivia: Land Administration	2	20.4	27.2	Improves the legislative and policy framework for facilitating sustainable land management. Creates a more efficient and transparent land administration and titling system and strengthens capacity to implement land-use regulations.
Brazil: Land Management II	2	33.0	71.6	Strengthens capacity to conduct land-use mapping, planning and monitoring, and extension services aimed at soil conservation, commercial forestry development and natural resource protection. Supports research and increases public awareness of soil conservation issues. Much if not most of the project components are directed toward humid areas of the country.
Brazil: Agriculture Research III	2	47.0	97.8	Research focuses on crops, livestock, forestry, soil biology, soil survey and conservation, agricultural extension, and environmental issues. Project is directed to both the dry northeast and Amazon regions.
Brazil: National Environment	2	117.0	166.4	Strengthens the National System of Conservation Units. Supports protection of ecosystems and institutional development. Much or most of this project is directed to humid portions of the country.
Brazil: Land Management III	2	55.0	123.0	Seeks to mitigate soil erosion by expanding vegetative cover and improving soil structure and drainage through reduced tillage, green manuring, crop rotation and other improved cultivation techniques. Activities will be concentrated in micro-catchments which have been identified as high priority in view of existing rates of soil degradation, farm incomes, and farmer's responsiveness to the earlier pilot program.
Chile: Environmental Institutions Development	2	11.5	32.8	Establishes the institutional framework to manage environmental protection and conserve natural resources. Components include national training programs, community-based workshops on environmental issues, environmental studies, forest and natural vegetation mapping, and a native forest cadastre.
Chile: Small Farmer Services	2	95.0	236.0	Extends land-titling and a range of other services to smallholders.
Dominican Republic: Irrigated Land and Watershed Management	2	28.0	43.24	Improves small-farmer income in project areas and develops methodologies that can be replicated nationwide both for efficient production support services, water management, and operation and maintenance of irrigation systems and for sustainable and environmentally sound watershed management.
Ecuador: Rural Development	2	84.0	112.7	Promotes rehabilitation of irrigation schemes, technology transfer to small farms, forestation, and land tenure regularization. Establishes an environmental unit strengthens capacity to evaluate actual and potential land uses.

Ecuador: Environmental Management	1	15.0	20.0	Supports implementation of the national environmental management strategy by assisting in the preparation of a new Environmental Management Law, and the related design and creation of an appropriate institutional framework for the coordination and implementation of environmental policy. Focuses on three priority areas: urban centers, the Gulf of Guayaquil, and the Amazon -- only a small portion of which encompass drylands.
El Salvador: Land Administration	2	50.0	70.0	Seeks to create a cadastral system for mapping and land registration and subsequently register an estimated 1.6 million parcels of rural and urban land.
Mexico: Forestry Development	2	45.5	91.1	Supports environmental protection by preparing an environmental baseline study (including research on endangered species of flora and fauna) and promoting the participation of Amerindian communities in natural resource management.
Mexico: Agricultural Technology	2	150.0	300.0	Strengthens capacity for research and extension in the agriculture sector. Includes components that address natural resource management issues (i.e. conservation of soil, water, and genetic resources).
Mexico: Irrigation Sector	2	400.0	1,250.0	Is the government's investment program for irrigation and drainage, fiscal 1991-94, totaling $1.2 billion. Rehabilitation, modernization, and transfer to users of 21 irrigation districts. Includes environmental studies and actions and institutional development.
Mexico: Environment/ Natural Resources	2	50.0	126.6	Supports the government's ability to carry out environmental protection and NRM. Strengthens institutional and policy framework. Conserving biodiversity accounts for 44% of the loan.
Mexico: Rainfed Areas Development	2	85.0	375.0	Raises agricultural productivity in selected rainfed areas (with annual rainfall less than 1,000 mm). Invests in small-scale irrigation to increase crop productivity and encourage crop diversification (away from corn). Assists farmers in adopting improved soil and water conservation measures.
Mexico: Community Forestry	1	15.0	50.0	Supports implementation of the government's redefined natural resource management strategy. Seeks to improve natural resource management, reduce deforestation, and improve the welfare of forest-dependent communities. Strengthens the capacity of communities to manage their forest resources; promotes private sector initiatives to provide forestry services to communities; designs strategies to promote timber, non-timber and non-traditional products from community forests; and strengthens federal and state institutions working in forestry conservation and development.
Paraguay: Land Use Rationalization	2	29.0	41.1	Multipurpose rural cadastre includes GIS as basis for land use classification. Studies aimed at land use rationalization, analysis of government policies affecting land use policies, analysis of legal framework and drafting of environmental legislation and regulations. Study of the role of indigenous people in NRM.
Paraguay: Natural Resources Management	1	50.0	79.1	Promotes sound NRM practices, developing a consensus on their importance and value within the rural community. Will assist small farmers in diversifying agricultural production systems and natural resource conservation. Will seek direct public participation in implementing project activities; stimulate cooperatives, local government and institutions. Aims to slow and reverse degradation of natural resources, regularize land tenancy, agro-ecological land use zoning, and strengthen institutions.
Venezuela: Agriculture Extension	2	39.0	105.0	Improves agricultural extension services to some 90,000 small farmers throughout the country. The project also promotes location-specific sustainable production technologies.
Venezuela: National Parks Management (INPARQUES)	1	55.0	96.0	Strengthens the management of national and urban parks, natural monuments, and wildlife refuges; promotes environmental research and education; and improves the financial sustainability of parks and protected areas.

(continued)

Table A1 *(continued)*

Description of World Bank-supported projects that address land degradation in dryland areas, fiscal 1990–98

Country/Project	Project Category	($ Millions) Loan/Credit	Total Cost	Project Description
Venezuela: Agriculture Sector Investment	2	300.0	900.0	Promotes policy reforms, institutional strengthening, and an investment strategy aimed at rationalizing the agriculture sector. Environmental components address land titling and tenancy issues and encourage reform of existing policies that promote poor land management practices (i.e., under-priced water and forest resources, subsidized credit for livestock and land-clearing, and subsidies for fertilizers and pesticides.

ANNEX 2

United Nations Convention to Combat Desertification—Dates of Ratification by Parties

(= Accession)*

AFRICA

Angola	30/6/97	Liberia*	2/3/98
Benin	29/8/96	Madagascar	25/6/97
Botswana	11/9/96	Mali	3/10/95
Burkina Faso	26/1/96	Malawi	13/6/96
Burundi	6/1/97	Mauritania	7/8/96
Cape Verde	8/5/95	Mauritius	23/1/96
Cameroon	29/5/97	Mozambique	13/3/97
Central African Republic	5/9/96	Namibia	16/5/97
Chad	27/9/96	Niger	19/1/96
Congo , DRC	12/9/97	Nigeria	8/7/97
Comoros	3/3/98	Sao Tome & Principe	8/7/98
Cote d'Ivoire	4/3/97	Senegal	26/7/95
Djibouti	12/6/97	Seychelles	26/6/97
Equatorial Guinea	26/6/97	Sierra Leone	25/9/97
Eritrea	14/8/96	South Africa	30/9/97
Ethiopia	27/6/97	Sudan	24/11/95
Gabon*	6/9/96	Swaziland	7/10/96
Gambia	11/6/96	United Republic of Tanzania	19/6/97
Ghana	27/12/96	Togo	4/10/95
Guinea	23/6/97	Uganda	25/6/97
Guinea-Bissau	2710/95	Zambia	19/9/96
Kenya	24/6/97	Zimbabwe	23/9/97
Lesotho	12/9/95		

EAST ASIA AND PACIFIC

Cambodia	18/8/97	Malaysia	25/6/97
China	18/2/97	Mongolia	3/9/96
Indonesia	31/8/98	Myanmar*	2/1/97
Lao (PDR)	20/9/96	Vietnam*	25/8/98

EUROPE AND CENTRAL ASIA

Armenia	2/7/97	Turkey	31/3/98
Azerbaïjan*	10/8/98	Turkmenistan	18/9/96
Kazakhstan	9/7/97	Kyrgyzstan*	19/9/97
Romania*	19/8/98	Uzbekistan	31/10/95
Tadjikistan	16/7/97		

LATIN AMERICA AND THE CARIBBEAN

Antigua and Barbuda	6/6/97	Guatemala*	10/09/98
Argentina	6/1/97	Guyana*	26/6/97
Barbados*	14/5/97	Haiti	25/9/96
Belize*	23/7/98	Honduras	25/6/97
Bolivia	1/8/96	Jamaica*	12/11/97
Brazil	25/6/97	Mexico	3/4/95
Chile	11/11/97	Nicaragua	17/2/98
Costa Rica	8/1/98	Panama	4/4/96
Cuba	13/3/97	Paraguay	15/1/97
Dominica*	8/12/97	Peru	9/11/95
Dominican Republic*	26/6/97	St Kitts and Nevis*	30/6/97
Ecuador	6/9/95	Saint Lucia*	2/7/97
El Salvador*	27/6/97	Saint Vincent and the Grenadines	16/3/98
Grenada*	28/5/97	Venezuela*	29/6/98

MIDDLE EAST AND NORTH AFRICA

Algeria[1]	22/5/96	Libya	22/7/96
Bahrain*	14/7/97	Malta	30/1/98
Egypt	7/7/95	Morocco	7/11/96
Islamic Republic of Iran	29/4/97	Oman*	23/7/96
Israel	26/3/96	Saudi Arabia*	25/6/97
Jordan	21/10/96	Syrian Arab Republic	10/6/97
Kuwait	27/6/97	Tunisia	11/10/95
Lebanon	16/5/96	Yemen*	14/1/97

SOUTH ASIA

Afghanistan*	1/11/95	Nepal	15/10/96
Bangladesh	26/1/96	Pakistan	24/2/97
India	17/12/96		

OTHERS

Canada	1/12/95	Fiji*	26/8/98
Cook Islands*	21/8/98	Iceland*	3/6/97
European Community	26/3/98	Japan	11/09/98
Austria*	2/6/97	Kiribati*	08/09/98
Belgium*	30/6/97	Marshall Islands*	2/6/98
Denmark	22/12/95	Micronesia	25/3/96
Finland	20/9/95	Nauru*	22/09/98
France	12/6/97	Niue*	12/8/98
Germany	10/7/96	Norway	30/8/96
Greece	5/5/97	Samoa*	21/8/98
Ireland	31/7/97	Switzerland	19/1/96
Italy	23/6/97	Tonga*	25/09/98
Luxembourg	4/2/97	Tuvalu*	14/09/98
Netherlands[2]	27/6/95		
Portugal	1/4/96		
Spain	30/1/96		
Sweden	12/12/95		
UK[3]	18/10/96		

Notes

1/ Algeria

The instrument of ratification by the Government of Algeria was accompanied by the following declarations:

"The People's Democratic Republic of Algeria does not consider itself bound by the provisions of article 28, paragraph 2, of the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, to the effect that any dispute must be submitted to the International Court of Justice.

The People's Democratic Republic of Algeria declares that for a dispute submitted to the International Court of Justice, the consent of both parties will be necessary in each case."

2/ Netherlands

The instrument of ratification by the Government of the Netherlands was accompanied by the following declaration:

"The Kingdom of the Netherlands declares, in accordance with paragraph 2 of article 28 of the United Nations Convention to Combat Desertification in those Countries experiencing serious Drought and/or Desertification, particularly in Africa, that it accepts both means of dispute settlement referred to in that paragraph as compulsory in relation to any Party accepting one or both of these means of settlement."

3/ United Kingdom

The instrument of ratification of the government of the United Kingdom and Northern Ireland extends to the following territories: for the United Kingdom of Great Britain and Northern Ireland, the British Virgin Islands, St. Helena and Ascension Island (18 October 1996).

Notification was subsequently received to the effect that the (above) Convention shall extend to Montserrat for whose international relations the Government of the United Kingdom is responsible. (24 December 1996).

Annex 3

Convention to Combat Desertification: Part II General Provisions

Article 4
General Obligations

1. The Parties shall implement their obligations under this Convention, individually or jointly, either through existing or prospective bilateral and multilateral arrangements or a combination thereof, as appropriate, emphasizing the need to coordinate efforts and develop a coherent long-term strategy at all levels.

2. In pursuing the objective of this Convention, the Parties shall:

(a) adopt an integrated approach addressing the physical, biological and socioeconomic aspects of the processes of desertification and drought;

(b) give due attention, within the relevant international and regional bodies, to the situation of affected developing country Parties with regard to international trade, marketing arrangements and debt with a view to establishing an enabling international economic environment conducive to the promotion of sustainable development;

(c) integrate strategies for poverty eradication into efforts to combat desertification and mitigate the effects of drought;

(d) promote cooperation among affected country Parties in the fields of environmental protection and the conservation of land and water resources, as they relate to desertification and drought;

(e) strengthen subregional, regional and international cooperation;

(f) cooperate within relevant intergovernmental organizations;

(g) determine institutional mechanisms, if appropriate, keeping in mind the need to avoid duplication; and

(h) promote the use of existing bilateral and multilateral financial mechanisms and arrangements that mobilize and channel substantial financial resources to affected developing country Parties in combating desertification and mitigating the effects of drought.

3. Affected developing country Parties are eligible for assistance in the implementation of the Convention.

Article 5
Obligations of Affected Country Parties

In addition to their obligations pursuant to article 4, affected country Parties undertake to:

(a) give due priority to combating desertification and mitigating the effects of drought, and allocate adequate resources in accordance with their circumstances and capabilities;

(b) establish strategies and priorities, within the framework of sustainable development plans and/or policies, to combat desertification and mitigate the effects of drought;

(c) address the underlying causes of desertification and pay special attention to the socio-economic factors contributing to desertification processes;

(d) promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of nongovernmental organizations, in efforts to combat desertification and mitigate the effects of drought; and

(e) provide an enabling environment by strengthening, as appropriate, relevant existing legislation and, where they do not exist, enacting new laws and establishing long-term policies and action programs.

Article 6
Obligations of Developed Country Parties

In addition to their general obligations pursuant to article 4, developed country Parties undertake to:

(a) actively support, as agreed, individually or jointly, the efforts of affected developing country Parties, particularly those in Africa, and the least developed countries, to combat desertification and mitigate the effects of drought;

(b) provide substantial financial resources and other forms of support to assist affected developing country Parties, particularly those in Africa, effectively to develop and implement their own long-term plans and strategies to combat desertification and mitigate the effects of drought;

(c) promote the mobilization of new and additional funding pursuant to article 20, paragraph 2 (b);

(d) encourage the mobilization of funding from the private sector and other nongovernmental sources; and

(e) promote and facilitate access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know-how.