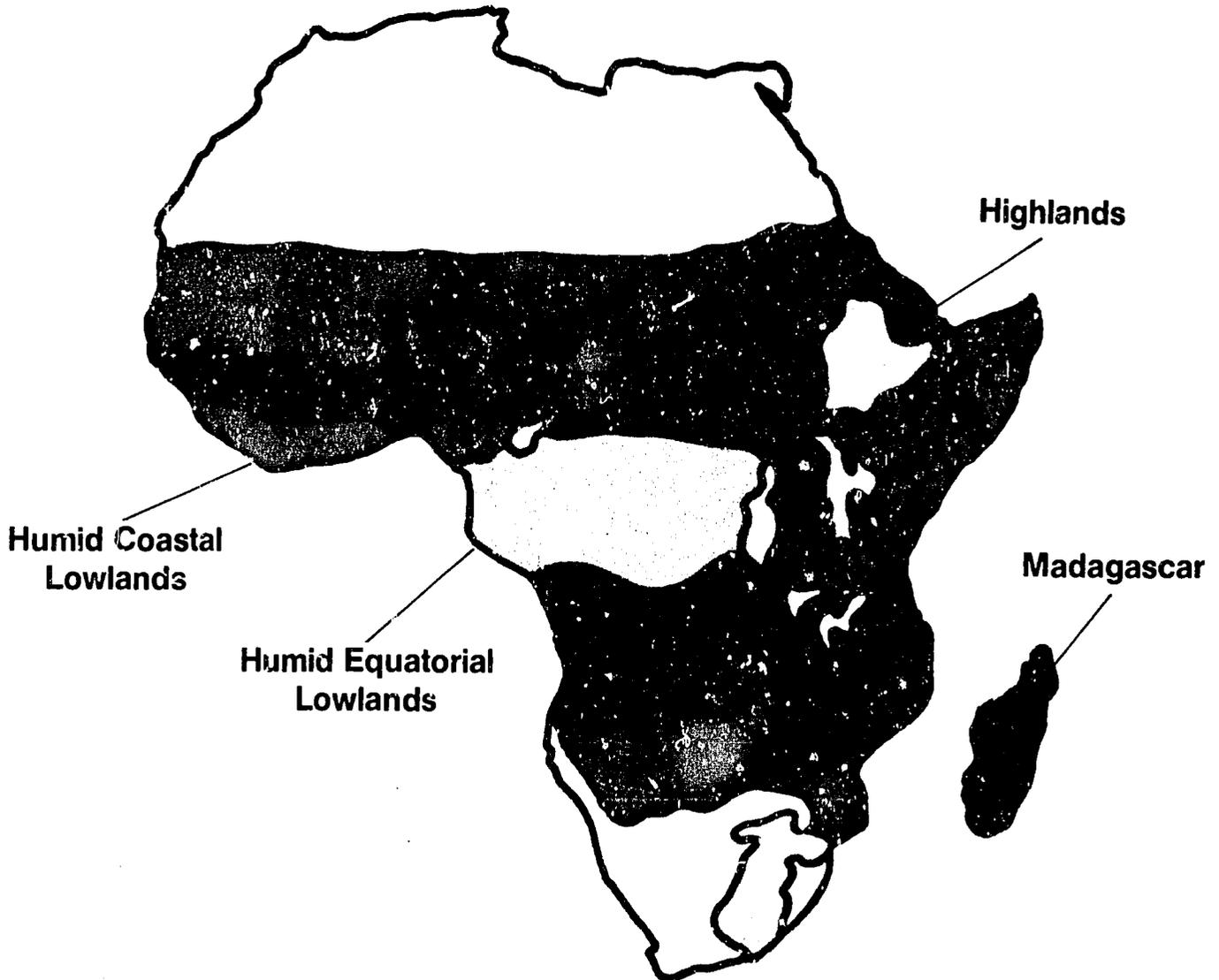


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Africa Bureau Sector Strategy

**Plan for Supporting Natural Resources
Management in Sub-Saharan Africa**



**Office of Technical Resources
Bureau for Africa
Agency for International Development
Washington, D.C. 20523**

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**PLAN FOR SUPPORTING NATURAL RESOURCES MANAGEMENT
IN SUB-SAHARAN AFRICA**

**Agency for International Development
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PREFACE

The complexity, severity and uniqueness of Sub-Saharan Africa's developmental and environmental situation defies ready comprehension. The visible link, however, between human suffering and environmental degradation is clearly evident. The spectre of African "environmental refugees" fleeing from the ravages of drought and desertification triggered a massive outpouring of U.S. humanitarian assistance to the continent. Those concerned with African development have reconfirmed their determination to reduce the region's vulnerability to these and similar disasters.

The U.S. Agency for International Development (A.I.D.) has been a major donor supporting environmental and natural resources programs in Africa for the last ten years. Much has been learned during this time, and modest achievements have been recorded. Africa's environmental problems, however, remain a difficult challenge and its natural resources development potential, a seemingly forgotten and as yet unfulfilled promise. Recognizing this, A.I.D. intends to maintain a long-term commitment to improved natural resources management in Africa, building upon sound lessons emerging in the past decade of involvement.

A need to better articulate and coordinate A.I.D.'s approach to Sub-Saharan Africa's environmental problems--desertification, deforestation, soil degradation, loss of biological diversity--with its strategic goal of increased agricultural productivity, led to the approval of this Plan for Supporting Natural Resources Management in Sub-Saharan Africa. The Plan has been prepared to guide the Agency, its Bureaus and Missions in analyzing, choosing and integrating natural resources programs and activities as key elements of the broad-gauged development strategy for the Region. It is intended as a companion to two closely related policy documents of the Bureau for Africa--the Plan for Supporting Agricultural Research and Faculties of Agriculture in Africa (A.I.D. 1985a), and the A.I.D. Africa Bureau Energy Strategy (A.I.D., 1985b).

The Plan grows out of a series of analyses and reviews carried out by and under the auspices of an Intra-Agency Working Group on Environment and Natural Resources in Africa. Much of this background work is recorded in the technical analysis volume (Freeman, 1986) which was a basic tool for the overall planning process. At appropriate intervals, the Working Group sought the advice and guidance of a wide range of external experts familiar with natural resource issues in Africa. An earlier draft of this Plan was reviewed by A.I.D. staff in Washington and this version incorporates the comments and suggestions received. A critique by A.I.D. Africa Missions staff has also been taken into account in preparing this final draft.

PLAN FOR SUPPORTING NATURAL RESOURCES MANAGEMENT IN SUB-SAHARAN AFRICA

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PLAN FOR SUPPORTING NATURAL RESOURCES MANAGEMENT
IN SUB-SAHARAN AFRICA

SUMMARY

The Plan

The Plan for Supporting Natural Resources Management in Sub-Saharan Africa guides A.I.D. efforts to improve natural resources management by (1) making natural resources management an important component of A.I.D.'s overall development strategy for Africa; (2) establishing priorities to facilitate the best use of limited resources. The technical priorities are: vegetation loss or degradation, soil erosion and fertility decline, and declines in biological diversity--all areas in which the U.S. has a comparative advantage. The sub-regions targeted are: arid and semi-arid tropics, tropical highlands, and the country of Madagascar.

Background

Environmental problems threaten Africa's future. Vegetation loss is accelerating, contributing to increased soil erosion, the loss of soil fertility and declines in biological diversity. Inappropriate use of water resources affects the quality of human life and the sustainability of agricultural production. The degradation of coastal resources is reducing ecological stability and limiting development potential.

Urgent actions are needed to reverse this decline and to foster environmental stability. Improvements in natural resources management are essential to increase agricultural productivity and sustain agricultural development.

The Plan evolved from a series of analyses involving both A.I.D. staff and external experts. The Plan responds to the 1986 amendments to Sections 118 and 119 of the Foreign Assistance Act dealing with tropical forest conservation and the maintenance of biological diversity.

Program Development

The Plan builds on existing efforts to integrate natural resources management into A.I.D. programs. Missions will examine the role of natural resources in regularly-scheduled Country Development Strategy Statements (CDSS), foster awareness of natural resource issues in policy dialogue, incorporate natural resource input into ongoing project implementation, and strengthen the information base to improve planning capability.

Given the Plan's technical and sub-regional priorities, some countries will implement a comprehensive program of projects and activities while others will focus on specific natural resource priorities or long-term training and institutional strengthening.

Comprehensive programs will review the following elements:

- o Policy dialogue to build improved national awareness and develop appropriate policies and programs;
- o Development of administrative, legislative and institutional frameworks for a multidisciplinary approach to natural resources management;
- o Compilation of socioeconomic and qualitative information to improve national planning capability;
- o Collection and analysis of baseline data on soils, water and biomass resource use;
- o Environmental assessments and incorporation of natural resources issues into identification, design and implementation of agricultural and rural development projects;
- o Affirmative action to assist host governments to foster greater involvement of farmers, herdsman and villagers in natural resources planning and management;
- o Development of appropriate human resources;
- o Support to PVOs and NGOs for accelerated programs in tree planting, agroforestry, soil and water conservation and maintenance of biological diversity.
- o Support for research on natural resources issues.

Implementation

To establish priorities in the task of integrating natural resource program elements into Mission portfolios, the Plan divides African countries into three groups. Group I countries are The Gambia, Guinea, Madagascar, Mali, Niger, Rwanda, Senegal, and Sudan. These countries will institute natural resources assessments for comprehensive programs in natural resources. Group II countries are Botswana, Burundi, Cameroon, Ghana, Kenya, Malawi, Somalia, Tanzania, and Uganda. These countries may undertake a natural resources assessment to develop a natural resources program concentrating on one or more technical priorities. Group III countries will integrate natural resources concerns into their agriculture portfolio and support institution strengthening through training in natural resources. The implementation and evaluation chapter of the Plan will be reviewed in FY 89.

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I. INTRODUCTION

A. A Brief Overview

As famine struck in 1984/85 after several years of drought, ten million people in 20 African countries were forced to abandon their land and seek relief. The combined effects of the drought and desertification were devastating to people in vast areas of Africa. The sparse rainfall fell on highly degraded areas--stripped of vegetation by land clearing, overgrazing and fuelwood collections, with soils eroded by wind and water and depleted of organic matter and nutrients by continued cropping with inappropriate agricultural practices.

Desertification is perhaps the most visible of Africa's environmental problems. There are many others, slower, less dramatic, and more pervasive, inexorably eating away at the fabric of the ecological balance on which Africa's destiny must be built. Population pressure leads to small farms, reduced fallow and substantial erosion; the promise and potential of East Africa's highlands, where soil quality and favorable climatic conditions mean good productivity, are already severely undermined. In Africa's major watershed areas, too many people practicing poor land husbandry are directly affecting development potential. Semi-arid Africa's precious water resources present complex management problems. Three of the major rivers of West Africa, the Senegal, the Niger and the Gambia, which represent a significant portion of this subregion's future irrigation potential, rise in the Fouta Djallon Plateau of central Guinea. Yet this area, with its fragile soils, is only one watershed area victimized by population pressure. In many areas, upstream and downstream negative impacts are directly affecting development potential.

The problems affecting Africa's natural resource endowment are also visible in the rapid decimation of its magnificent wildlife heritage. If indeed natural areas with their flora and fauna must give way to accommodate man and his needs, this must take place without endangering the biological diversity which underpins the world's common gene pool and its evolutionary survival.

The productivity and well-being of Africa's agrarian and pastoral peoples is directly linked to the wise use and conservation of the natural resource base. While there is broad agreement among those concerned with development in Africa that agriculture should be the primary "engine of growth", it is also clear that agricultural development must give special attention to restoring and maintaining environmental stability. This can only be accomplished by strengthening the linkages between natural resources management and agriculture and rural development, and by fostering a participatory approach which builds on the inputs (land, labor, capital, technology) available to rural people. Only the farmers and herders--planting

1/ Natural Resources are defined as the physical and biological systems associated with agricultural lands, forests, range and water.

trees, controlling erosion, nurturing soil and water resources, managing woodlands and rangelands with a view to direct economic benefits for their families--can begin to make the substantial impact required to reverse the decline and realize the full potential of the natural resource base.

These measures cannot overcome the consequences of excessive drought or unmanageable population pressure. They can, however, if systematically pursued, increase the area of sustainable agriculture and buy time for the full spectrum of longer-term economic development efforts needed for individual and national growth.

B. Purpose of this Plan

This Plan for Supporting Natural Resources Management in Sub-Saharan Africa serves four purposes.

First, the Plan is a major benchmark in the evolution of A.I.D.'s natural resources programs in Africa. The Plan has been prepared as many of A.I.D.'s earlier generation of project activities are drawing to a close. Based on a comprehensive review of this experience, the Plan presents a framework that A.I.D. will rely on to guide the course of future investments in improved natural resources management in Africa.

Second, the Plan reflects the concern of both A.I.D and Congress for the broader issues of natural resources management, particularly recent amendments to Sections 118 and 119 of the Foreign Assistance Act dealing with tropical forest conservation and the maintenance of biological and genetic diversity.

Third, the Plan develops seven important themes that will orient A.I.D.'s future assistance in this area:

-- fuller integration of natural resource concerns within A.I.D.'s overall program, particularly with respect to policy dialogue and agricultural development;

-- the fostering of African capacity to manage natural resources at all appropriate institutional levels, from the national to the community;

-- strong support for farmer-oriented participatory approaches, including those which facilitate the involvement of women;

-- commitment to addressing natural resources concerns within a long-term frame of reference;

-- concentration of effort on priority problem areas where there is a good fit between the nature of the problem and U.S. experience and expertise;

-- increased involvement of private voluntary organizations (PVO) and non-governmental organizations (NGO) in program implementation; and;

-- continued attention to supporting collaborative efforts among host countries and improving coordination with other donors.

Fourth, the Plan lays out A.I.D.'s firm conviction that efforts to improve natural resources management must also include addressing the fundamental causes of environmental degradation in Africa: population growth, economic stagnation and poverty, and declining agricultural productivity.

Finally, the Plan presents a select set of major natural resource concerns, and describes a number of priority program elements that, taken together, constitute a balanced A.I.D. program in support of improved natural resources management in Africa.

II. CAUSES OF ENVIRONMENTAL DEGRADATION IN AFRICA AND ACTIONS NEEDED

The causes of natural resources mismanagement in Africa are found in the same set of fundamental problems that lie at the heart of Africa's development crisis: rapid population growth, enduring economic stagnation and poverty, and declining agricultural productivity. A.I.D.'s program to improve natural resources management in Africa seeks progress at the level of both cause and consequence. The Agency's Africa strategy directly addresses the three fundamental problems while at the same time, assisting African nations in managing the consequences. Action on both fronts will be needed if the closely related cycle of cause and effect is to be effectively broken. The three fundamental problems are discussed below. The consequences of natural resources mismanagement are discussed in Section III.

A. Population Growth

The population of Sub-Saharan Africa is growing faster than that of any other continent--over 3 percent per year on the average. Africa's population of about 360 million in 1980 will double by the year 2000 and will be over one billion by 2020. Population growth of this magnitude places enormous stress on the natural resource base as agriculture is extended into marginal lands and forests, and as cultivation is intensified on fragile soils with inappropriate technologies. In the face of such pressures, most African nations will find it difficult to make the improvements in natural resources management required for continued, sustainable agricultural productivity. This unavoidable fact underlines the need for continued progress in the area of family planning. A.I.D.'s investment in family planning improvement in Africa (about \$30 million per year in 40 countries) is an indispensable element in the overall effort to improve natural resources management in Africa.

B. Economic Stagnation and Poverty

Africa has many macro-economic development problems, including: accelerating declines in per capita output, growing debt servicing problems, continued low returns on private investment, and increasingly ineffective public services. Such problems have a direct impact on sustainable livelihoods at the grassroots level. Coping with natural resources rehabilitation and management, whether by African nations or individual Africans, will not be accomplished without parallel improvements in the overall development picture.

At the national level, it takes significant commitments of money and trained personnel to evolve sustainable, effective programs of natural resources management. African governments will also have to undertake serious macro-economic analyses and policy review to find answers to questions such as overall funding levels for the natural resources sector, the costs of affirmative action now versus rehabilitation later, and the incentives to farmer productivity and resources conservation.

For individual farmers, improved natural resources management and conservation can pose additional pressure and apparent risks on limited family resources (land, labor, capital and technology) now dedicated to sustenance and survival. Returns on farm labor in many parts of Africa have declined dramatically to the point where the urban/rural income ratio is now 5:1 (as compared with 2:1 in India). Despite this, many African farmers have already embraced natural resources management activities such as tree-planting or soil and water conservation practices.

Real progress, however, in controlling and reversing environmental degradation will only come as participatory, farmer-driven programs begin to achieve exponential impact. For this to take place, over time and on an escalating scale, farm families will require greater economic stability so as to be able to reinvest in the stewardship of their basic resources. They will need sound advice and support in choosing appropriate natural resources interventions which provide earlier, tangible benefits for the household economy. Peasant farmers will also need government action in obtaining relief from the wide range of social and economic policies and institutional factors which presently militate against sustainable use and resource conservation. Land tenure, tree rights and the role of women in decision making are examples of key areas where policy change is frequently needed.

African nations must restructure their economies and institutions to establish an environment within which public and private investment in long-term natural resources management is recognized as an essential element in long-term economic growth. A.I.D. currently spends about \$430 million per year in support of economic stabilization and policy reform. As African nations undertake necessary economic reforms, the policy dialogue agenda should be expanded to include natural resources management issues.

C. Declining Agricultural Productivity

In the 1980's Africa's farmers must produce food and export crops for rapidly growing rural and urban populations with production technologies that are essentially unchanged from those available in the 1960's. Agricultural research in Africa, with a few exceptions, has not produced the technologies needed to increase the productivity of labor and land. Farmers often do not have access to intensive food production technologies or inputs that might help them cope with increasing pressure on the land, nor do they have access to up-to-date technologies or credit for money-earning commercial crops. Only recently have the soil and water conservation, agroforestry, and low input agriculture technologies critical to sustainable productivity begun to receive the attention they merit in African farming systems research.

The profound weakness in African agricultural research is only partly a problem of money and staff; there are more basic problems associated with a lack of focus, continuity, and relevance. A.I.D. has taken a leadership role in improving the effectiveness of agricultural research in Africa, spending \$60-80 million per year to strengthen national research programs, to assist

appropriate International Agriculture Research Centers, and to establish meaningful linkages between researchers and farmers. A.I.D.'s strong commitment to agricultural research in Africa will contribute significantly to improved natural resources management.

While a large part of A.I.D.'s program in Africa is designed to assist African nations in their efforts to make progress on these three basic problems (population, economic stagnation, and declining agricultural productivity), there is a need to support programs that grapple with the immediate consequences of natural resources mismanagement and to accelerate the long-term process of building recognition of the fundamental role of natural resources in sustainable development. The section below assesses issues and options in supporting natural resources management in Africa.

III. CONSEQUENCES OF NATURAL RESOURCES MISMANAGEMENT AND ACTIONS NEEDED

The decline in the overall stability and productivity of Africa's natural resource base is the result of a complex and interrelated series of resource degradation processes. For example, loss of vegetative cover in critical watersheds may lead to increased soil erosion, declines in water availability, loss of biological diversity, and decreased productivity downstream and in coastal estuaries. Natural resources management programs must be conceived in a way that responds to these complex interrelationships and to the country and site-specific social, economic and institutional circumstances surrounding them. For the sake of clarity, however, this paper analyzes environmental issues by identifying five broad problem areas:

- Soil erosion and soil fertility decline;
- Loss of vegetative cover;
- Surface and groundwater degradation;
- Failure to manage coastal resource; and
- Loss of biological diversity.

These problem areas are reviewed individually below, in terms of the existing understanding of the problem, known practices or solutions, and experience with development assistance. The responses which the Agency may choose to address these problems, however, will and must vary widely across Africa due to both ecological and socioeconomic diversity. To better assess these variations and provide a geographic screen for identifying a selective Agency program for natural resources management, Sub-Saharan Africa has been analyzed on the basis of a number of agro-ecological sub-regions. These divisions are also useful in defining the basis for sub-regional activities and/or networking in the sector. For the purpose of this Plan, the sub-regions have been drawn up on the basis of the Food and Agriculture Organization's (FAO) Agro-ecological Zonation Map for Africa (FAO, 1978), with modifications to account for human population density and species endemism. The sub-regions are as follows:

-Arid and Semi-Arid Tropics: growing period 0 - 180 days, no cultivation below 350 mm rainfall, 1975 population - 82 million.

-Sub-Humid Tropical Uplands: 180 - 270 day growing season, elevations 100 - 300 meters above sea level north of the equator and up to 1000 meters above sea level south of the equator. One rainy period, except Ethiopia and Somalia have two. 1975 population - 104 million.

-Humid Equatorial Lowlands: 270 to 365 day growing season, light population.

-Humid Coastal Lowlands: 270 to 365 day growing season, 1975 population - 82 million.

-Tropical and Subtropical Highlands: variable growing season, elevations generally above 1500 meters, 1975 population - 11 million.

-Madagascar and Indian Ocean Islands: distinguished by species endemism and insularity, Madagascar's population 1975 - 7.7 million and 1985 - 9.0 million.

These agro-ecological sub-regions are presented in Figure 1.

A. Soil Erosion and Declining Soil Fertility

Soil erosion and declining soil fertility together are Africa's most serious environmental and economic problem. The FAO has estimated that 16 percent of Africa's rainfed farmlands may be lost to erosion by the year 2000.

Erosion of productive topsoil is a major concern affecting the fertility of farmland in all sub-regions. Rates of soil erosion measured in Lesotho and Ethiopia at 152-224 tons/hectare/year mean that as much as three centimeters of topsoil may be lost each year. Even in the gently sloping lowlands of West Africa's Sahelo-Sudanian region, soil losses of 12.5 tons/hectare/year from fields with only two percent slope have been observed. Downslope siltation can undermine major productive investments such as irrigation works and water storage and use facilities. The soil erosion problem knows no boundaries, ranging in scale from parts of fields to whole watersheds. Although most attention has focussed on water-related erosion, wind is also a problem; the dust storms and moving sand dunes of dry Africa are evidence of severe erosion.

Declining soil fertility is a less dramatic but equally widespread problem. Loss of soil organic matter, leaching of nutrients, formation of ironstone from lateritic soils, increasing soil acidity, loss of cation exchange capacity, salinization and water-logging, all are part of the soil fertility loss problem. Maintaining soil fertility is especially difficult in Africa. Overall, natural fertility is inherently low. High soil temperatures cause a rapid oxidation of organic matter, and seasonally intensive rainfall accelerates nutrient leaching and mineralization. Soil management techniques based on fallowing, crop rotations, intercropping, and the use of crop residues and animal manures are used by people throughout the continent, but the effectiveness of these low-resource approaches is threatened by the population growth of the increasingly disenfranchised, poor rural sector. A complicating factor is Africa's low rate of fertilizer use, lowest of any of the continents.

The principal causes of soil erosion and soil fertility loss are: the extension of cultivation into marginal areas; inappropriate agricultural practices (shortened fallow periods, uncontrolled burning, crop monocultures, inappropriate mechanization, inadequate investment in soil conservation); and localized overgrazing. The underlying problem is population growth and



Agro-Ecological Sub-Regions of Sub-Saharan Africa

-  Arid and Semi-Arid Tropics
-  Subhumid Tropical Uplands
-  Humid Equatorial Lowlands
-  Humid Coastal Lowlands
-  Highlands
-  Madagascar and Indian Ocean Islands

Figure 1.

increasing pressure on the land, which induces increasingly intensified use of the fragile land resource.

A number of social, economic, and institutional factors have made it difficult for Africa's people to develop effective responses to these problems. The uncertainty associated with changing systems of land and tree tenure has altered traditional management systems and sometimes inhibited long-term investments; in many countries centralization of political power has eroded the capacity of local communities and local governments to manage their resources effectively; agricultural research systems have not generated improved crop production technologies that are relevant to small farmers; and weak economies, often biased against agriculture, have made it difficult for Africa's farmers to earn the money they need to invest in their land. Progress in all these areas is needed to effectively address the problems of soil erosion and soil fertility loss in Africa. A similar set of social, economic and institutional factors impact on the natural resources problem areas discussed below; the discussion, however, will not be repeated below for the sake of brevity.

B. Loss of Vegetative Cover

Estimates suggest that Africa's forests have been reduced by half during this century and that the rate of deforestation is still accelerating despite relatively impressive efforts at reforestation. The closed forest formations of Africa, which account for roughly 18 percent of the world's total closed forest area, have been disappearing at the rate of 1.3 million hectares annually (FAO, 1981). The World Resources Institute estimates that another 2.3 million hectares of Africa's open savannah woodlands have been deforested during each of the last five years.

Africa's rangelands which include portions of the savannah woodlands are also being stressed. Although expert opinion is divided, it is clear that severe overgrazing takes place near urban market centers and boreholes. A study of twenty African nations concluded that all but one showed some deterioration of rangelands, while nine nations evidenced a significant increase in rangeland deterioration (Berry 1984).

The loss of vegetative cover associated with deforestation and rangeland deterioration has severe impacts on agriculture, exposing the land to unrelenting climatic extremes and breaking down the thin mantle of topsoil on which productivity depends. Deforestation contributes to watershed degradation, increased soil erosion, loss of wildlife habitat and declines in biological diversity, and is also a major factor in the desertification process expanding across the drylands of Africa.

The primary reason for deforestation is the expansion of extensive agriculture. Fuelwood and charcoal harvesting to supply domestic energy needs is also a significant contributing factor. In some areas, uncontrolled and frequent fires take a further toll. Encroachment of the farming frontier into

humid rangeland areas, which are important as dry season grazing reserves, has exacerbated the overall problem of managing the range resource.

Laudable efforts to contain the pace of deforestation have been launched throughout Africa over the last 15 years, but the approach has often been too narrowly focussed on fuelwood, forestry, and foresters. In areas undergoing degradation, many components of the rural production system are under stress, which argues for a broader, more integrated approach to the problem of maintaining vegetative cover. Thus, vegetation management efforts must be multi-purpose in nature, addressing people's production needs as well as environmental protection. Future activities should be based on the ameliorating soil and water conservation effects of vegetative cover in sustaining agricultural and livestock productivity while enhancing natural resources stability and preserving biological diversity. Livestock production activities must incorporate range rehabilitation and management practices more compatible with traditional herder methods and biological systems that have evolved under the very high variability of forage and water which characterizes Africa's rangelands. This all means working with farmers and herders to promote and facilitate tree planting and vegetation management in ways which build on indigenous production systems.

C. Surface and Groundwater Degradation

Water resources (rivers, lakes and groundwater) present significant development opportunities. The continent is characterized by large river systems, in many cases traversing several nations. The Nile, the Zaire and the Niger rank among the world's great rivers; an additional twenty others are of regional significance. Many of these rivers rise in more humid areas and flow through dry zones, thus providing the potential for irrigation, although irrigation has been hampered by a number of interrelated technical, economic and institutional difficulties. Hydropower potential is also great but largely untapped. Africa's lakes, both natural and man-made, offer substantial fisheries development opportunities to help feed the region's burgeoning populations. Wetlands are important to both sustained agricultural production and maintenance of biological diversity. Africa's villages still largely depend on wells and streams for potable water.

Environmental degradation associated with misuse of water resources, as well as poor management of catchment areas, may curtail this development potential. The most common problems are: disrupted seasonal streamflows with high sediment loads and consequent siltation in rivers, reservoirs and irrigation canals; increased incidence of water-borne diseases (schistosomiasis and malaria); pollution from agricultural chemicals, and to some extent from urban and industrial wastes; declines in the quantity and quality of fishery offtakes; and falling sub-surface water tables and water quality losses due to impaired groundwater recharge. Each of these problems directly threatens the quality of human life and the sustainability of agricultural production in Africa.

Water resources management in Africa has been slowed by a general lack of basic information, and has been further hampered because the responsible institutions at national, regional, and local levels are often too new, too weak, or too lacking in political authority to play an effective management role. This argues for an initial focus on training and research, coupled with effective institutional development at all relevant levels from local communities and water users associations to national and regional organizations.

D. Failure to Manage Coastal Resources

Seafood is an important component of the diet in many countries of Africa. In coastal areas, as much as 40 percent of total animal protein intake may come from the seas. In the majority of these countries, the fish harvest comes from nearshore marine fisheries and coastal estuarine areas. The coastal environment plays a vital role in sustaining the food chain and life cycles of many species of fish, crustaceans and plants which are either themselves harvested or have a direct function in the complex web of life along the shores of Africa. On a continent preoccupied with food security, coastal waters provide abundant food resources which countries can ill afford to forego.

Estuaries are also the site of Africa's six million hectares of mangrove forests. These forests are exploited for fuelwood, charcoal, and building poles; in addition to domestic consumption, considerable quantities are exported annually from Africa's east coast to the Middle East. Finally, coastal resources are also important as tourist attractions. Several West and East African nations and Indian Ocean states derive substantial foreign exchange earnings from seaside tourism.

At the present time little is being done to maintain the environmental integrity and long-term productivity of coastal resources. Perhaps the most critical issue is the disruption of seasonal freshwater inflows which are necessary for ecological stability. Dams, upstream diversion of water for irrigation, and salt-water intrusion barriers--combined with long-term drought in many areas--are reducing freshwater runoff to coastal estuaries and lagoons. This may be exacerbated by pollutants transported by rivers flowing out of heavily populated catchment areas. These processes lead to a number of problems affecting estuarine and marine life and intertidal mangrove forests.

Perhaps the most serious constraint to effective coastal resources management in Africa is that the institutional responsibilities are often unclear, falling in an undefined area between marine and inland waters management. Lack of good basic data further inhibits problem diagnosis. Although there is general agreement that the problems discussed above are of growing significance, information about the extent or seriousness of coastal resource degradation is insufficient in any but a few local settings.

E. Loss of Biological Diversity

Throughout Africa the dependency of local people on undomesticated plant and animal resources is a fact of life. Wild plant and animal products provide food, fuel, fiber, shelter and medicine, particularly among the poorest and most rural populations. At the same time, natural resources are a major source of foreign exchange: timber from West and Central African countries, gum arabic in the Sudan, and wildlife-related tourism in East Africa. Finally, sustained biological and genetic diversity provides insurance for the future. Wild plant and animal species or wild varieties of domesticated species are important sources of genetic material needed to make improvements in Africa's staple food crops and livestock, particularly in developing resistance to disease and drought.

Although Africa's biological and genetic resources have great potential to benefit both these countries and mankind generally, this potential is threatened by unmanaged exploitation. By the year 2000, all but small remnants of the tropical forests of Nigeria, Ivory Coast, Rwanda and Burundi may be lost. In arid and semi-arid lands, wild strains of millet, sorghum and pigeon pea may be lost before they can be identified and collected. Conversion of a few hectares of forest to cropland in Madagascar can lead to the extinction of plant and animal species.

A general failure to recognize the ties between conservation, basic human needs and sustainable development has led to a continuing loss in biological and genetic diversity. On one hand, past conservation practices have often neglected the needs of local people, and the income generated by parks and protected areas has rarely been used to improve living conditions of surrounding populations. On the other, Western-oriented development planning has not taken advantage of the in-depth knowledge Africans have of their environment and effective resources management approaches which have evolved through the centuries. Some of these concerns can be addressed through a more integrated approach, using the environmental assessment process, which could be more widely used as a design tool, for blending biological systems management with development.

IV. AFRICAN POLICIES AND PROGRAMS

In the last fifteen years awareness and understanding of Africa's environmental problems have improved greatly. African governments, assisted by the donor community, have sharply increased their efforts to improve natural resources management. There have been modest achievements, but much remains to be done; environmental degradation is still a serious threat to long-term African development.

Since the late 1960's and early 1970's, many countries in Africa have either strengthened or established national-level organizations to plan and administer forestry and other natural resources management and environmental programs. A core operational capability now exists in most countries. This capability, however, can best be characterized as emerging. Well-trained, field-oriented staff are still lacking, as is adequate budget support. Key organizations in many African nations possess only rudimentary planning skills. Too many projects focus narrowly on technical goals without attention to the policy, administrative, legislative and institutional framework which is necessary to facilitate greater farmer and private sector involvement. Most approaches to environmental management are too centralized, aimed at achieving conservation through control rather than through service to farmers. Natural resource activities and environmental assessment have been inadequately integrated into the mainstream of agriculture and rural development. Many African governments have relied heavily on donor support for initial project support, and must now cope with problems of absorptive capacity and recurrent costs.

This somber assessment should not mask the positive achievements taking place in Africa today. At the First African Environmental Ministers Conference in 1985, the delegates recognized that the continent faces an environmental crisis related to overpopulation, and that resolution of these problems is primarily the responsibility of Africans, with assistance but not reliance on the donor community. Similar sentiments were included in the resolutions adopted at the 1986 United Nations General Assembly Special Session on the Critical Economic Situation in Africa.

African governments have increasingly given their support to community-based, participatory action programs for tree planting, soil and water conservation, agroforestry, low resource agriculture and environmental rehabilitation. Small-scale pilot demonstration efforts are found in many countries. In some, local non-governmental organizations have brought natural resources issues to national attention through community action programs. Comprehensive plans and strategies to improve program planning and implementation are also getting more attention. Natural resources assessments, national conservation strategies, and sector master plans are under preparation or recently published for a significant number of countries. The Club du Sahel/Interstate Committee for the Fight Against Drought in the Sahel (CILSS) mechanism, which is presently assisting the Sahelian West African countries to prepare national plans for controlling

desertification, is the most advanced of these undertakings, and is a potential model for other regional organizations.

In short, Africa is turning the corner in the environment field, although a great deal remains to be done. African countries are strengthening their resolve and improving their approaches to the long-term issue of natural resources management and development. The years ahead must be marked by concerted actions to consolidate and build on the lessons of the past.

V. U.S. EXPERIENCE IN AFRICAN NATURAL RESOURCES PROGRAMS

A. Agency for International Development

A.I.D.'s renewed interest in natural resources in Africa began during the 1974-1976 Sahelian drought and revolved around the recognition that fuelwood and charcoal harvesting had major implications for environmental deterioration. Beginning in 1977, a series of A.I.D. activities began to address these concerns. Fuelwood was the topic of an important 1978 Africa Bureau Conference and was also a major agenda item at the 1981 Africa Bureau Workshop on Energy, Forestry and Environment.

The earliest A.I.D.-funded natural resources projects in Africa emphasized fuelwood production, village woodlots, improved cook stoves, and renewable energy development. Significant but lesser amounts of assistance were provided for more general natural resources activities including resource inventories, country environmental profiles, and environmental training. This included the Africa Regional Environmental Training and Management for Africa project (ETMA). A number of other projects--river basin development, integrated rural development, remote sensing, and agriculture and livestock development--also included natural resources planning and management components. The Niger Forestry and Land Use Planning project (FLUP) is a noteworthy example of an integrated approach to resource management. Environmental assessment and impact analysis were adopted; the initial environmental examination (IEE) has become routine for each new project.

In the early 1980's, as experience and information began to accumulate, the need for purposeful change became evident. In 1982, the Africa Bureau undertook an in-depth evaluation of its portfolio. This evaluation, combined with the results of the CILSS forestry/ecology sector country assessments in West Africa, two full years of in-country African/donor cooperation under Cooperation for Development in Africa (CDA), and inputs from A.I.D. staff in West and East Africa, prompted the Bureau to hold the 1984 Forestry Program Evaluation Workshop.

This Workshop reached a number of important conclusions for forestry and natural resources activities in general. It pointed out the modest number of successful, replicable project experiences available for adaptation to other country situations. It highlighted the potential of participatory, on-farm tree planting and natural woodlands management options. It also reasserted the continuing need for training and technical assistance to build African capability to plan and execute field activities. The Workshop concluded that policy changes, particularly to achieve greater integration of agriculture and forestry, were necessary. It endorsed the need for greater in-country cooperation and exchange of experience by African and donor personnel and recommended longer-term projects (up to ten years), with realistic goals and implementation schedules aimed at institutional development as well as on-the-ground production activities. Finally, it suggested the need for greater operational flexibility based on project monitoring and evaluation.

The Report of the Forestry Program Evaluation Workshop was distributed widely to Mission and Agency staff. It has given rise to a continuing process of introspection regarding the role of natural resources in African development. As a result, A.I.D.'s Bureau for Africa has moved towards greater integration of agriculture, forestry, and natural resources programs. The present Plan will assist the Agency to continue this integration and will provide a balanced programmatic framework to guide the next generation of A.I.D. activities in natural resources in Africa.

B. Peace Corps

The United States Peace Corps has had a substantial program for natural resources since its inception. Large numbers of volunteers have served in reforestation, soil and water conservation, improved wood stoves, wildlife and wildlands management, and more general natural resources positions in a wide range of African countries. Natural resources conservation and environmental sciences were also important parts of the Special Peace Corps/Smithsonian program. The majority of these volunteers have served in community-based action programs--a strong suit in overall Peace Corps efforts. Peace Corps is also expanding activities related to the maintenance of biological diversity.

Since August 1985, A.I.D., building on previous cooperation with Peace Corps in the forestry sector, has funded a new program to promote increased collaboration and support by Peace Corps volunteers in Private Voluntary Organization (PVO) PL-480 projects. Requests for volunteers under this program have already begun to materialize in Africa. This is over and above the 150 volunteers currently serving in natural resources/forestry positions in the Region and the ceiling of 600 volunteers foreseen under the separately funded Peace Corps African Food Systems Initiative which will also include agroforestry volunteer positions. Peace Corps can help to provide the staffing for future technical assistance needs in natural resources projects implemented by A.I.D. Missions or by PVOs with A.I.D.-provided PL-480 resources. Likewise, the Peace Corps has, over the years, developed training and extension materials aimed at community-based participatory natural resources management. These materials could easily be adapted and used by both A.I.D. and PVO projects.

C. The PVO/NGO Community

Private voluntary organizations (PVO) and non-governmental organizations (NGO) based in the United States have been involved in social welfare activities abroad for a long time. In the last four decades their efforts have evolved from relief, disaster assistance and food aid to a more development-oriented approach concerned with ameliorating the causes of poverty and improving the quality of life. More recently, these organizations have begun to address the development issues of the forestry/natural resources sector. Their fundamental concern for meeting basic human needs (food,

shelter, energy, and the means to a livelihood) has stimulated them to undertake fuelwood production, agroforestry and conservation projects, usually at the grassroots level.

Twenty-five percent of A.I.D.'s forestry/natural resources portfolio in Africa is being implemented by the PVO community. Modest yet significantly successful achievements by these organizations can be found in Niger, Senegal, Sudan, Somalia, Mali, Kenya, Rwanda, and Comoros. They have been funded through a variety of A.I.D. mechanisms: centrally-funded matching grants; development assistance funds, including PVO umbrella projects; refugee funds; and PL-480 resources, including local currency. Among the PVO community, the following organizations with a proven track record may be cited: CARE, Africare, Lutheran World Relief (LWR), Catholic Relief Service (CRS), Save the Children, Overseas Education Fund (OEF), Inter-Church Response, World Vision, Volunteers in Technical Assistance (VITA), International Voluntary Service (IVS), Oxfam (U.S.), International Union for the Conservation of Nature (IUCN), and the World Wildlife Fund (U.S.).

Several non-governmental organizations have also taken on larger policy analysis, advocacy and research roles which have served to strengthen their understanding of and commitment to Third World environmental problems. They, too, have become partners with A.I.D. in furthering the goal of resource conservation for development. Both International Institute for Environment and Development (IIED) and World Resources Institute (WRI) have entered into cooperative arrangements with the Agency to pursue these programs of mutual interest. This included the co-sponsoring of the recent NGO workshop on "Expanding the Role of NGO's in National Forestry Programs in Africa" held in Nairobi in 1986.

A.I.D. has repeatedly signalled its intention to maintain a strong working relationship with these organizations. The PVO/NGO community will continue to play a fundamental role in bridging the gap between host government sources and the communities. Because of their involvement at the local level, usually on a broad front, the PVOs are well suited to helping broker the proper integration of natural resources activities, based on people's needs, into the ongoing extension and development programs. Farmer and community-based natural resources management schemes will often require new consensus and new social institutions in order to be successful. The PVO/NGO, embodying the new social institutions movement, may be well-suited to stimulate and guide the process of formation of these new rural institutions. Through both U.S. government and private sector contributions, these organizations provide a new channel for funding natural resources activities, thereby increasing the impact in the sector.

Several international non-governmental organizations concerned with the conservation of natural resources are active in Africa. IUCN, WWF and the African Wildlife Federation have played important roles in assisting African

nations to develop policies, strategies, institutions and action programs for conservation, particularly in the area of national parks and wildlife protection and management. In addition to its broad range of work in conservation, IUCN has recently helped African nations prepare National Conservation Strategies. WWF has long supported the protection of Africa's wildlife, and with increasing world concern for biological diversity, is likely to increase its activities in this field. These organizations have increasingly tried to address the relationship between conservation and development, and A.I.D. looks to them as partners in implementing programs addressing biological diversity concerns.

VI. OTHER DONOR PROGRAMS

This section provides a general overview of the activities of other donors in natural resources development in Africa. A more detailed review is available in the technical analysis volume (Freeman, 1986) which is a companion to this Plan.

A. The Bilateral Donors

Most European donors, as well as Canada, Japan, Australia and the OPEC/Arab nations, are providing bilateral assistance for natural resources development in Africa. France, the United Kingdom and Belgium have provided assistance since independence primarily for building or strengthening government institutional capability. Most of the other donors are, like A.I.D., completing a first cycle of projects addressing environmental degradation issues.

For the United States, and a majority of these donors, efforts have focussed predominantly on forestry and tree planting, mostly in drought-prone and desertification-afflicted countries. It is difficult to generalize about donor priorities and present commitments, although some donors have chosen particular program emphases, such as village forestry (The Netherlands), community forestry (Sweden), technical forestry training (Switzerland), and the Special Program for the Sahel (Federal Republic of Germany). The donor community has also provided assistance for wider natural resources concerns including soils, parks and protected area management, natural resource inventories, and hydrologic and coastal resources. All the European donors seem to regard Africa and its environmental problems as high priority concerns. Many have endeavored to assist Africa in implementing the broad mandate on natural resources contained in the 1975 Lagos Plan of Action. Under the aegis of the OECD, they have provided long-term support to the Club du Sahel/CILSS initiative for Sahelian West Africa. Desertification was one of the five subjects considered by the Group of Experts on Aid to Africa appointed as a result of the 1985 Bonn Economic Summit. It was also the major agenda item at the summit-level Silva Conference in 1986, which gave prominence to tree planting and agroforestry as solutions to Africa's environmental crisis.

With a large number of donors active in the sector, in-country African/donor coordination is essential. Efforts begun in West Africa by CILSS with their National Master Plans for Combatting Desertification and the SADCC Food, Agriculture and Natural Resource Strategy Paper are excellent examples. Such efforts can strengthen national planning capabilities, avoid duplication of effort and accelerate the in-country learning process by compiling data, information and project results. Such activities improve natural resource investments by making effective use of national and donor resources for the highest priority concerns.

B. The Multilateral Agencies

The multilateral agencies of the United Nations assist African countries in environment and natural resources development. Included are the United Nations Development Program (UNDP), Food and Agriculture Organization (FAO), United Nations Environment Program (UNEP), United Nations Educational, Social and Cultural Organization (UNESCO), World Food Program (WFP) and United Nations Sudano-Sahelian Office (UNSO). FAO, with UNDP financing, has assisted numerous African countries to build institutional capability for natural resources management. Many of the present government institutions and the legislative/regulatory frameworks which guide them were put in place with UNDP/FAO assistance.

Although FAO efforts are directed predominantly to the forestry sector, they have shifted away from an earlier emphasis on utilization and commercialization of forest products for economic development to a more people-oriented strategy. FAO's pioneering work on community forestry helped turn world attention to the opportunities associated with tree planting to meet rural people's needs for fuel, food, shelter and the means to a livelihood. FAO's technical competence in the natural resources field and UNDP's fundamental role in national planning qualify these agencies to play a leadership role in the environmental sector in Africa.

UNESCO has supported information collection and basic research on natural resources through its "Man and the Biosphere" program. Additionally, this agency has attempted to strengthen national capability for teaching natural resources management through assistance to education ministries.

UNSO was created specifically to help center world attention on Africa's Sudano-Sahelian Zone. UNSO has acted as a clearinghouse on desertification and has attempted to help countries attract additional assistance from the donor community. These latter efforts are similar to efforts undertaken by CILSS and UNEP's Desertification Consultation Group.

UNEP addresses world-wide environmental issues with a limited role in field programs through actions such as its leading role in the First National Seminar on the Environment held in Rwanda in 1985. UNEP helps governments develop sound environmental policies and programs. The UNEP-sponsored United Nations Conference on Desertification helped direct world attention to the needs of arid and semi-arid areas in Africa. UNEP's Desertification Unit is expected to serve as a clearinghouse for information on the subject. UNEP also sponsored the African Ministerial Conference on the Environment in 1985.

The United States, as the major contributor to the operating budgets of these UN agencies (except for UNESCO), is concerned that their overall effectiveness be improved by better defining areas of influence and action. The United States continues to look to these agencies to assemble information on the natural resources of the continent, and to take the lead in applied research.

Some of the International Agricultural Research Centers (IARC's) have also become concerned with natural resources through their work on soils and water for African cropping systems. The International Institute of Tropical Agriculture (IITA), International Livestock Center for Africa (ILCA), and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) have begun to address agroforestry within the context of farming systems research. Both IITA and ILCA have been working on alley cropping. This technology (which combines perennial crops of nitrogen-fixing, multipurpose trees with food crops) may be a stable alternative to shifting cultivation in the lowland humid tropics of coastal West Africa. ILCA has encouraged planting these same species as fodder crops for small ruminants, and has also worked on management of arboreal fodder crops as part of its range management effort. ICRISAT has recently held a major workshop on the agroforestry dimension of agriculture in the semi-arid tropics, and has done limited trials on interplanting, windbreaks and farm border trees.

Although not yet a part of the Consultative Group for International Agricultural Research (CGIAR) system, the International Council for Research in Agro-Forestry (ICRAF) in Kenya is heavily engaged in applied research and research networking for agroforestry. A.I.D. provides support for ICRAF to promote agroforestry research networking in the Tropical Highlands of East Africa.

These institutions can play an important role in promoting greater integration of agriculture and natural resources through their efforts at employing tree planting technologies for soil and water conservation in support of research on priority commodities. A.I.D., as a major donor to the CGIAR system, will continue to promote on-farm agroforestry research and field testing by the IARC's.

C. The World Bank

The World Bank has given substantial support, mostly through its International Development Association (IDA) loan facility, to natural resources endeavors in Sub-Saharan Africa. The support has been mainly in the form of loans to national governments to undertake substantial reforestation activities, some targeted at the fuelwood or community forestry problems, and others for industry-scale wood supply needs. As a result of project evaluations, there has been a shift away from larger-scale plantations (although these are by no means excluded) towards more decentralized nursery production and farm forestry extension programs.

The Bank has more recently recognized the dire circumstances of African natural resources and put in place several new initiatives. A major policy paper on "Desertification in the Sahelian and Sudanian Zones of West Africa" was published in 1985, and a follow-up workshop held in conjunction with the Norwegian Agency for Development (NORAD) and other donors (including A.I.D.) in June, 1986. The Bank has also announced an accelerated Action

Programme Concerning Deforestation in Africa for 1987-89. This Programme is closely aligned with the FAO's Tropical Forestry Action Plan, of which the Bank was a major promotor and supporter. The World Bank has a policy that seeks to integrate wildlands conservation in project design and development.

In short, the World Bank is a strong force in assisting African nations to pursue natural resources development activities. The Bank has demonstrated considerable interest in interacting and cooperating with other donors, something which A.I.D. also actively pursues.

VII. PROGRAM SELECTION CONSIDERATIONS

The basic premise of this Plan is that natural resources management activities can and should be a more important component of the overall Africa development strategy of A.I.D. and, to some degree at least, of all its Africa Mission programs. However, judging the actual potential of sector interventions to contribute to national development priorities, and selecting the nature of these interventions and the magnitude of the efforts will require purposeful systematic analysis. It is clear that the multiplicity of natural resource systems, distinct ecological conditions and varied problems provide a complex challenge and nearly limitless array of program opportunities. Not all of these opportunities are of equal significance. Furthermore, the Agency is determined to bring better focus to its efforts in this sector in order to more effectively utilize its limited financial and human resources for greatest identifiable impact. This focus is intended to be dual--overall as an expression of broad Agency commitment and direction, and specifically, in response to the needs and opportunities of the countries of the Region.

Accordingly, subsequent sections aim to assist the Agency, its Bureaus, and particularly its Africa Missions, in analyzing, choosing and integrating natural resources programs and activities as key elements of the broad-gauged development strategy for the Region. While each of these issues, considered alone, is relatively simple, and will be familiar to those individuals involved in Agency programming, in the aggregate the issues may appear complex. They are, however, intended only to give the reader an overall conceptual framework for reviewing natural resources concerns and a set of parameters against which to continue the task of focussing, programming and planning.

A. Principles of A.I.D. Assistance

A.I.D. has been the largest bilateral donor addressing African natural resources problems. Support has been provided in nearly every African nation, addressing a wide range of natural resource concerns. The lessons learned from this experience, and expected future realities in Africa, provide clear guidelines for improving the effectiveness of future investments. The following are broad principles that will structure A.I.D. programs in natural resources.

Concentration

While the U.S. has considerable interest and expertise in many areas of natural resources management, the bulk of positive field experience in Africa has been accumulated in the area of soils and vegetative management and, to a lesser degree, in water resources management and biological systems management. The U.S. has a base of knowledge in these areas, from both African and domestic experience. The U.S. also has the capacity to develop

and extend technologies and to train Africans to plan and implement effective programs.

Integration

Natural resources management has often been viewed as a set of problems isolated from the economic and production considerations of agricultural and rural development. The result has been narrowly-focused activities that are useful, but operate outside the mainstream of development and local needs and which have only limited local support. Natural resources management must be integrated into broader-based policy dialogue and agricultural and rural development programs to achieve cost-effectiveness, sustainability and acceptability. An integrated approach will be mutually reinforcing, because agriculture relies on a healthy natural resource base for sustained and increased production. To effect this desirable synergism, A.I.D. will make natural resources management considerations elements of policy dialogue and program development where feasible and appropriate.

Long Term Commitment

Obtaining effective natural resources management is a slow process. Even if major efforts are initiated now, it will take a minimum of 15-20 years, depending on the country and problems, to develop the policy framework, trained staff, and institutional base needed to maintain and carry out these programs. Thus there is a strong presumption in favor of ten-year authorizations for future A.I.D. programs providing assistance to natural resources management improvement. In circumstances where this may not be possible (PL-480-funded activities, for instance), every effort will be made to develop a long-term host country strategy to serve as a coherent framework within which short-term assistance can be effectively applied, and to seek multi-year assistance agreements (e.g., by using Title II Section 206 or Food for Progress).

Financing Recurrent Costs

The financial constraints facing most African governments make new or expanded programs difficult to sustain. Local people may also lack the resources to invest in new initiatives, or may be unwilling to risk their slim resources on activities that may only generate returns in the long run. Better use of existing resources is the obvious first step to resolving recurrent cost issues. Nevertheless, A.I.D. should also approach the recurrent cost issue by assisting African nations to address the economics of natural resources strategies, and by seeking adequate levels of government expenditure in key areas. Much can also be done through improved revenue generation and by contracting out to the private sector. A.I.D. may finance recurrent budgets for natural resources activities under the conditions spelled out in A.I.D.'s Policy Paper on Recurrent Costs.

Donor Cooperation and Coordination

Since natural resource problems are extensive and A.I.D. provides only 15-20 percent of total donor assistance to Africa, A.I.D. must work closely with the entire donor community to mobilize the resources needed to address large-scale problems, to avoid duplication, to ensure key areas are adequately supported and to minimize demands on national planning systems. A.I.D. will make special efforts to support collaborative efforts among countries, through organizations such as CILSS and SADCC. The effectiveness of coordination and cooperation efforts ultimately depends on the host country's ability to establish sound programs into which donor resources can be placed. Hence a priority for A.I.D. will be working with African colleagues to establish sound national strategies and plans for use as a framework for coordinating assistance.

Local Involvement

Governments, with or without donor support, have limited resources to deal effectively with the full range of natural resources concerns. The government driven "top-down" approach has too often attempted to implant shallowly conceived, often technocratic solutions to poorly understood problems. What is needed is a pragmatic and economically viable integration of agriculture, animal husbandry and natural resources programs, conceived on the basis of popular participation, and built on people's existing practices. Only farmers, including women who play a fundamental role in both African farming systems and natural resources utilization, and herders--planting trees, controlling erosion, conserving the soil, managing their rangelands and wildlife--can restore stability to Africa's natural resource base.

Women in Development

Women supply well over half of all the agricultural labor in African countries in addition to performing nearly all household chores. Their social and economic position in African society rarely reflects the importance of their role as the primary agricultural producers. Agricultural development is hampered when primary producers have little decision-making power and are not permitted to own land. Through policy dialogue and through its project activities, A.I.D. will seek to foster women's access to agricultural credit, to improve their role in host country institutional development, particularly in extension services. A.I.D. will also promote the right of women to influence the manner in which Africa's natural resource base is linked to food security.

B. Program Criteria

African Country Related Criteria

Two of the most important factors affecting the environment are

fragility of the resource base and population pressure. In terms of these factors, two agro-ecological sub-regions emerge as high priority target areas for continued A.I.D. support to natural resources management, namely the Arid-Semi-Arid Tropics and the Tropical Highlands.

In the Arid-Semi-Arid Tropics, the combination of fragile lands and relatively high populations of people and their livestock has given rise to desertification, a major environmental problem. Desertification accompanied by periodic drought has severely undermined the traditionally tenuous margin of agricultural productivity and is directly and tangibly threatening food security. Similarly, population increases in Africa's very productive tropical highland areas are jeopardizing the long-term sustainability of development.

Unique environmental features or functions may contribute to the magnitude of the problem. In this regard, two other areas rate special consideration. Watershed degradation in the Fouta Djallon uplands of Guinea is seriously affecting downstream development potential on three major river systems of West Africa. Nowhere is the world's valuable biological diversity more threatened than in Madagascar where the destruction of only a few hundred hectares of natural habitat may mean the extinction of endemic species of plant and animal.

A number of other problems, specific to particular areas, although of lesser yet still significant magnitude, are also worthy of mention. West Africa's coastal areas have been largely overlooked in development efforts. In particular, destruction of mangrove forest areas is proceeding unabated with potential major impact on fisheries productivity. Population pressure along West Africa's humid coastal lowland belt is undermining the environmental stability of the area. More attention to raising agricultural productivity may help to safeguard the remaining 10 percent of the unique and productive humid tropical forest areas. Major river basin development efforts and associated large scale irrigation efforts will require careful attention to environmental concerns. Similarly in many parts of dry Africa, inland water resources, both surface and subterranean, are threatened by large scale soil and vegetative degradation. Better land-use planning and watershed management and rehabilitation will be locally important development priorities. Finally, Africa's magnificent wildlife heritage is rapidly being destroyed. This loss of a rich natural resources endowment is visible throughout Africa.

Another factor influencing decisions on development assistance in the natural resources sector is host country government commitment and capability. A.I.D.'s development assistance in the sector is predicated on the conviction that given the present dimensions of the problem only the people themselves ultimately can reverse and repair the environmental degradation they have wrought. In effect, this means that the A.I.D. program

will focus on a community-based, participatory approach as the keynote to effective natural resources management. Experience in Africa to date has demonstrated that this approach works. On the other hand, large-scale, state-controlled top-down efforts have proven to be of limited utility. Governments cannot reverse desertification, stop erosion, or control deforestation. Their role should be rather to promote, guide, and facilitate the participatory approach.

In assessing government commitment and capability, several elements must be considered: a favorable policy environment which fosters popular involvement in natural resources development and conservation; appropriate national institutions working with adequate budgets and an administrative structure to effectively service participatory management by farmers, small-holders and the private sector; a sufficient cadre of trained and motivated extension personnel; and, realistic national and local experience in carrying out natural resources projects and programs. Assessing each of these elements will be subjective, but, in most African countries this commitment and capability has only recently begun to develop.

For activities related to tropical forest conservation and the maintenance of biological and genetic diversity, choices for assistance will be based on several factors, including: the international significance of the resources; host country priorities; PVO/NGO involvement; and the opportunities identified by Missions through the CDSS process.

Institution building can best be accomplished through policy dialogue, hands-on experience and increased funding for human resources development. Pragmatic support to institution-building must be a keynote of A.I.D.'s program in the sector. A number of A.I.D.'s African host countries have already made significant moves in the right direction; these include: Kenya, Rwanda, Tanzania, Senegal, Niger, Zimbabwe and Malawi. Others which have taken steps in this regard but need more encouragement and support include: The Gambia, Guinea, Burkina Faso, Mali, Chad, Sudan, Togo, Somalia, Burundi, Cameroon, Madagascar, and Lesotho.

A.I.D. Related Criteria

Agency policy and programming objectives in Africa will also influence the scope of natural resources development assistance in each country.

Since the goal is to better integrate natural resources management activities into overall agriculture and rural development programs, one of the criteria to be considered will be the country category designations under the Africa Bureau Strategic Plan. In this Plan, countries are designated to one of three categories: Category I, Major; Category II, Middle-level; Category

III Minor². In essence, the major countries, given the coincidence of other decision criteria favoring involvement in natural resources, will likely have a fuller range of activities than either of the other two.

Another A.I.D. criteria is the importance of the agricultural research program in each country as described in A.I.D.'s Plan for Supporting Agricultural Research and Faculties of Agriculture in Africa. Natural resources components, for example, may thus become part of the farming systems research being carried out in the technology producing countries (Senegal, Cameroon, Sudan, Kenya, Malawi, Zaire, Zambia and Zimbabwe). Assistance to countries designated technology adapting will follow the agricultural research plan which foresees two tiers of involvement, i.e. program and project assistance (Burundi, Madagascar, Mali, Togo, Sierra Leone, Liberia, Niger, Rwanda, Burkina Faso, The Gambia, Botswana, Lesotho and Swaziland) and, primarily participant training (Chad, Benin, Somalia, Mauritania, Guinea, Guinea Bissau, Central African Republic, Cape Verde and Djibouti). The same economic, social and political considerations which limit A.I.D. support to agricultural research in Tanzania, Uganda, Ghana, Ivory Coast and Nigeria should also apply to research in natural resources.

A.I.D. Missions have been encouraged in the past to support collaborative efforts among countries (networking) and donor coordination. In the natural resources field, a number of ongoing efforts serve as criteria for discerning the relative merits of program opportunities. Over the last ten years, significant A.I.D. resources for the ecology/forestry sector have been channeled to the Sahel countries under the aegis of the Club du Sahel/CILSS mechanism. This mechanism will continue to be an important tool for judging program priorities. Both SADCC and the recently formed Intergovernmental Group Against Drought and Desertification (IGADD) group (East/Horn of Africa) may serve to multiply the impacts of A.I.D. assistance to the natural resources sector. Since 1981, the United States has chaired the CDA Forestry/Fuelwood Technical Committee. This Committee brings together twelve of the major western donors who have significant forestry assistance programs in Africa. The Committee has elected to concert its efforts in donor support for forestry in seven African countries: Burundi, Somalia, Senegal, Mali,

2/ As of February 1987, the countries in each category are as follows:
Category I - Kenya, Liberia, Senegal, Somalia, Sudan, Zaire, and Zambia;
Category II - Cameroon, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Zimbabwe, and Guinea; and Category III - Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Congo, Djibouti, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Ivory Coast, Lesotho, Mauritania, Mauritius, Nigeria, Sao Tome, Seychelles, Sierra Leone, Swaziland, Tanzania, Togo, and Uganda. Countries may shift between categories over time.

Cameroon, Malawi and Burkina Faso. A.I.D. is pursuing the establishment of a Consultative Group on Biological Diversity for the similar purpose of closer collaboration among organizations supporting activities to conserve biological diversity.

VIII. A.I.D. PROGRAM IN NATURAL RESOURCES MANAGEMENT IN SUB-SAHARAN AFRICA

A. Primary Focus on the Causes of Environmental Degradation

A.I.D. will continue to direct its attention first and foremost to programs that address the fundamental causes of environmental degradation in Africa: population growth, economic stagnation and poverty, and declining agricultural productivity. However, environmental rehabilitation and long-term stability of the natural resource base will be necessary complements to addressing these three major issues. Wise stewardship will be essential if Africa's burgeoning populations are to make optimum use of the land resource base. A vital, productive, sustainable natural resource base is the fuel which will drive the engine of growth--agriculture--and with it, the rural economy of much of the region. Attention must also be devoted to building natural resources conservation and management back into peasant subsistence farming systems in order to increase their resilience and productivity. Fertile, well-watered soils will be necessary to exploit the full potential of genetically enhanced food crops. More than improved seeds will be required to foster sustainable, productive agricultural systems.

To this end, A.I.D. will continue to invest in family planning, will continue to help African nations restructure their economies and institutions, and will continue a strong commitment to agricultural research and technology improvement. These are the key aspects of A.I.D.'s overall effort to address natural resources management in Africa.

B. Natural Resources Program Priorities and Elements

A.I.D. will also support focussed efforts to deal with specific natural resources management needs and opportunities. Assessing the relative importance of the numerous environmental problems or natural resources development potentials of the Region will not be easy. However, a small set of concerns seems to be of consistently higher priority. The following is a simplified list of priority technical concerns selected in light of the analysis discussed above. Taken together, they constitute a focussed program for gradual adoption by the Agency in the natural resources management sector in Sub-Saharan Africa.

Focus on Integration

Of general concern is:

-The potential contribution of natural resources management for sustainable agricultural productivity and rural development throughout the region.

-The maintenance of biological systems (tropical forests, wetlands, etc.) and biological diversity through the melding of conservation and development objectives.

Thus, integration will be the keynote to A.I.D.'s natural resources management activities in Sub-Saharan Africa over the short to medium term.

Sub-regional Priorities

Of specific concern are the following sub-regional priorities:

-In the Arid-Semi-Arid Tropics, continued strong support to tree-planting, agroforestry, soil and water conservation, and water resources management to reverse the impacts of desertification and stabilize environmental conditions for sustainable productive agriculture and livestock husbandry. Also, support to PVO's and NGO's engaged in wildland conservation and protection of endangered species.

-In the Tropical Highlands sub-region and Madagascar/Indian Ocean Islands, increased direct support to efforts at arresting soil erosion and improving watershed management through tree-planting, agroforestry, and soil and water conservation practices. In Madagascar and the Tropical Highlands, support to PVO's and NGO's engaged in wildland conservation and protection of endangered species, with emphasis on integrating conservation objectives within rural development programs. Particular attention will be given to those countries signatory to the Convention of International Trade in Endangered Species of Fauna and Flora (CITES) and the Ramsar Convention on Wetlands of International Significance (RAMSAR).

-In the Humid Coastal and Equatorial Lowlands, development of sustainable crop production systems as alternatives where traditional shifting cultivation is under intense population pressure; support for the protection of representative tracts of remaining humid tropical forests.

-In the Sub-Humid Tropical Uplands, development of a better policy framework and natural resource/land use assessments to guide land use and watershed management in the sub-region.

Program Elements

Based on the assessment of the nature and scope of their natural resources activities, and in accordance with their analysis of their own program priorities and host country circumstances, Missions can choose among the elements listed below, up to a full scale program including them all.

-Policy dialogue to build improved national awareness and commitment and develop appropriate policies and programs which recognize the importance of natural resources (particularly soils, vegetation and water for sustainable agricultural and livestock productivity and development) and the importance of the conservation and maintenance of biological diversity.

-Support to developing meaningful administrative, legislative and

institutional frameworks for a multidisciplinary approach to natural resources management and extension in the service of farmers and the private sector.

- Compiling socioeconomic and qualitative information on natural resources to improve national capability for agricultural and land-use planning.

- Gathering and analyzing baseline data on soils, water and biomass resource use, including maintenance of monitoring and analysis programs, ground survey and census work, low-level aerial surveys and remote sensing.

- Environmental assessments associated with project approvals and deliberate efforts to include natural resources management expertise during project identification, design and implementation in the agriculture/rural development sector.

- Affirmative action to assist host governments to foster greater farmer/herdsman/villager involvement in resource planning and management through support to participatory action approaches.

- Human resources development in the field of natural resources with particular attention on land-use planning, natural resources inventory (including remote sensing), soil science, forestry, and watershed management.

- Support to Private Voluntary Organizations (PVO's) and National Non-Governmental Organizations (NGO's), utilizing both development assistance funding and PL-480 resources, for an accelerated program of pilot demonstration efforts in tree-planting, agroforestry, and soil and water conservation and maintenance of biological diversity.

- Support and participation in African regional organizations concerned with natural resources management, for example Club du Sahel/CILSS and SADCC.

- Support for research on natural resources management, predominantly funded either centrally or regionally, but also including bilateral resources for the following topics:

- Applied research and research networking in agroforestry, genetic improvement of multi-purpose trees, and natural forest management.

- The effect of fuelwood marketing policies, and pricing legislation on conservation and sustainable use of forest resources.

- The effect of cropping systems and farm management practices on the maintenance of soil productivity and fertilizer use efficiency in farming systems programs.

-The development of stronger technological and socioeconomic bases for African livestock/resource systems.

-The needs and opportunities for incentive programs to encourage African farmers to maintain soil quality or rehabilitate land.

-Methods for the rehabilitation of degraded areas.

C. Program Development and Evolution

As has been stated above, A.I.D. will support focussed efforts to strengthen and better integrate natural resources management activities into the overall agriculture and rural development programs in order to promote long-term sustainable productivity, and to address the most serious dimensions of environmental degradation in Africa. In almost every African country where A.I.D. is working today, natural resources activities are a facet of A.I.D.'s program.

This Plan calls for some restructuring of A.I.D.'s assistance to natural resources management improvement in Sub-Saharan Africa. The intention is to build natural resources management into A.I.D. programs in an evolutionary way, in the ordinary course of program and project implementation and development. A.I.D. has at its disposal an array of program development actions which can help set the stage for Mission choices regarding the nature and magnitude of sector activities. A number of these, discussed below, can also produce pragmatic opportunities for implementing this plan, outside the traditional project development approach.

CDSS's

The primary locus for examining program content will be the Country Development Strategy Statement (CDSS). In the future, each African Mission preparing a CDSS will examine the natural resources sector, its needs and opportunities, its implications for national development, the potential for integration with other program elements, the scope and objectives of the natural resources management interventions it will undertake, and the types of activities it will bring to bear to achieve objectives. Particular attention will be focussed on the need for measures to maintain biological diversity and to conserve tropical forests.

Policy Analysis and Dialogue

With A.I.D.'s decentralized programming and decision-making, Mission personnel, through a continuing relationship with their African counterparts, can identify and address critical needs. Missions are encouraged to include natural resources concerns as part of their policy dialogue agenda with host country governments. An important dimension to this dialogue should be fostering and stimulating host country awareness of the contribution of natural resources to development and the gravity of continuing ecological

degradation. A.I.D., as a major bilateral development partner in the Region, can bring broad influence to bear on local development issues, often without recourse to actual assistance mechanisms. Natural resources management is a long-term issue and one must have a high place on the national development agenda for some time to come. This awareness can best be translated into action on many fronts permeating a wide range of host government activities: primary, secondary and college education and training, local development information campaigns, training and preparation of local leaders, extension programs, and overall national development planning. By consistently reiterating the natural resources issues, jointly with the host government, and with other donor partners, A.I.D. can help speed the Africanization of the response which will ultimately be required to achieve substantial impact in this sector.

Policy dialogue could logically focus on the linkages between population, agriculture and natural resources stability for sustainable productivity and long-term growth. More specific agenda items may also be pursued, such as: the need to build greater resilience into subsistence farming systems through soil and water conservation (a practical way to begin discussing the integration of agriculture and natural resources); the impact of land and tree tenure arrangements on farmer motivation for resource conservation; the need to strengthen land-use planning so that efforts at rehabilitation are not overwhelmed by continued destruction; the potential for government efforts to improve the overall policy framework for private sector and farmer participation in resources management; and the role of PVO's and NGO's in the sector in-country.

The Ongoing Project Portfolio

A.I.D. Country Missions should use this Plan, (its contents, and criteria and companion technical analysis volume) in the interim, before their new CDSS's are due, to assist them in ongoing program implementation.

Adherence to the Plan will include careful implementation of Agency Environmental Procedures (22CFR216) and the preparation of sound Initial Environmental Examinations (IEE's) and Environmental Assessments (EA's) that may be required for project approval. Environmental Examination and Assessment Procedures, legal requirements mandated in the mid-seventies, have now become routine for each new U.S. sponsored project. Sometimes these efforts have come to be regarded as regulatory and procedural rather than proactive. As A.I.D. seeks to better integrate natural resources management into the mainstream of development activity, IEE's and EA's should be viewed as opportunities for enhancing project design. Such an approach requires that natural resources management input be sought early in the design process.

Natural resources considerations should be taken increasingly into account as agriculture and rural development projects are routinely implemented and evaluated. For example, agricultural and farming systems research projects should give more attention to soil and water conservation or

agroforestry practices. General rural development efforts could give more emphasis to natural resources information gathering and land-use planning. Missions should review the possibilities of using regional training projects to target human resources development needs in the sector. Improved interaction among ongoing projects in the portfolios of some Missions can also further the objectives discussed in this Plan.

The Natural Resources Data Base

During the late seventies/early eighties, Country Environmental Profiles (CEP) were prepared with A.I.D. assistance for 21 African countries. These profiles, essentially preliminary desk studies, have been used extensively over the years but are now largely outdated. The Agency has indicated its intention to proceed, where appropriate, to promote and prepare Phase II - Country Environmental Profiles. These are expected to be in-country studies, carried out directly in close collaboration with host country nationals, and including action plans and recommendations.

Since the early CEP's were prepared, other similar exercises and documentation have also been carried out. In Sudan, A.I.D. funded a Natural Resources Sector Assessment that was prepared by the Institute of Environmental Studies at the University of Khartoum. A number of field Missions have commissioned major bilateral project efforts to inventory and map the natural resources base (Mali, Senegal, and Mauritania). A.I.D. has also actively supported, sometimes directly, the production of the CILSS Country Ecology/Forestry Sector Assessments and the subsequent National Anti-Desertification Master Plans for the countries of the West African Sahel. The IUCN has been active in elaborating National Conservation Strategies (Madagascar, Zambia, Zimbabwe, Botswana, Guinea-Bissau, Ivory Coast, Senegal, Sierra Leone, Togo, Uganda and Zaire). In a number of countries, these plans have served as a focal point for sustained in-country coordination meetings. These meetings are led by the host government and include the representatives of the donor partners engaged in the natural resources sector. They can serve a number of useful purposes: quickening the pace of diffusion of workable technical packages; facilitating priority setting and project identification processes; fostering a pragmatic monitoring and evaluation function; avoiding needless duplication of effort; and, improving the host/donor relationship through mutual respect for and understanding of each other's interests and capabilities. They can also provide a forum for generating the level of understanding and concern that may on occasion be necessary to deal with some of the larger policy issues which emerge in the sector. This sort of in-country coordination, even if carried out on an informal basis, can serve institution building needs through its inherent support to strengthening national planning capability.

Knowledge and use of CEP's and similar documents, and participation in assessments and coordinating efforts can help A.I.D. field Missions to effectively choose their interventions in the natural resources sector.

Centrally and Regionally Funded Resources

Over time, and in direct reflection of evolving Mission needs and programs, centrally and regionally funded activities will be adjusted to be fully complementary and supportive of the Africa natural resources program described in this Plan. Missions may expect regional and A.I.D./W based Agency resources to assist them in carrying out these interim activities, particularly those concerned with developing the analytical baseline. They can also turn to A.I.D./W for assistance with implementation support, information collection and dissemination, training and research networking.

Centrally funded projects under the Science and Technology Bureau (S&T) and the Bureau for Food for Peace and Voluntary Assistance (FVA), such as the Forestry Resources Management (Forestry Support Program) Project, the Environmental Planning and Management Project, the Agroforestry Research Networking Project (ICRAF), and others from S&T/AGR, CRSP's, and IARC's, including FVA matching grants mechanisms will be increasingly geared to the natural resources management program emphasis in Africa. The Africa Bureau has put in place a new regional Natural Resources Management Support Project (NRMS) with similar aims.

IX. IMPLEMENTATION AND EVALUATION

The objective of this chapter is to set forth a coherent program for the Bureau to address natural resources management needs to the extent that funding and staff levels will allow. Implementation of the Plan requires that A.I.D. engage in a number of activities over both the short and long term. These activities will include:

--Integrating natural resources concerns into the agricultural and rural development portfolios of all Missions;

--Increasing local currency support for natural resources management activities;

--Increasing collaboration with other donor groups and the PVO/NGO/University community;

--Strengthening technical support staff in natural resources; and

--Strengthening the information, policy and institutional base (including gender implications) for natural resources management programs.

A. Priority Technical Problems/Concerns

The Bureau considers land degradation to be Africa's highest priority environmental problem. Loss of vegetation, soil erosion/loss of soil fertility and biological diversity are the Bureau's priority technical concerns.

B. Agro-Ecological Target Sub-Regions

The Bureau has designated two agro-ecological sub-regions as immediate target areas. These are the Arid-Semi-Arid Tropics and the Tropical Highlands. The island of Madagascar has also been cited as requiring special attention.

C. Applying Technical and Agro-Ecological Criteria

Countries fitting these agro-ecological and technical criteria are:

Botswana	Lesotho	Somalia
Burkina Faso	Liberia	Sudan
Burundi	Madagascar	Swaziland
Cameroon	Malawi	Tanzania
Chad	Mali	Uganda
Djibouti	Mauritania	Zaire
Ethiopia	Niger	Zambia
Ghana	Nigeria	Zimbabwe
Guinea	Rwanda	
Kenya	Senegal	

From this list, country groupings have been derived based on Bureau and Mission strategic and developmental priorities.

D. Priority Countries

To establish priorities in the task of integrating natural resource concerns into Mission portfolios, this Plan divides A.I.D. assisted Sub-Saharan African countries into three Natural Resources Management (NRM) groups.

All three groups should seek to integrate (or improve the integration) of natural resources concerns into their ongoing agricultural and rural development portfolio.

In program development, the three NRM groups of countries represent a continuum, with priority NRM programs (related to the Bureau's priority technical concerns) foreseen in Group I countries, specific but limited-focus NRM programs in Group II countries, and very restricted, if any, programs in Group III. These country groupings will be subject to periodic revision as Bureau and Mission strategic and developmental priorities change.

NRM Group I

Group I countries have urgent needs for natural resource interventions and for the most part have a sizeable U.S. assistance effort. For these countries A.I.D.'s objective is to implement a focussed program of activities relating to natural resources management.

Guinea	Rwanda
Madagascar	Senegal/Gambia
Mali	Sudan
Niger	

NRM Group II

Group II countries may address specific natural resource issues identified in this plan that are of Bureau priority concern and Congressional interest. A.I.D. will consider limited NRM programs in these countries.

Botswana (soil erosion, biological diversity)
Burundi (soil erosion, soil fertility, biological diversity)
Cameroon (soil erosion, loss of vegetation, biological diversity)
Ghana (loss of vegetation, biological diversity)
Kenya (soil erosion, biological diversity)
Malawi (biological diversity [Lake Malawi], soil erosion)
Somalia (loss of vegetation)
Tanzania (loss of vegetation, biological diversity)
Uganda (soil erosion, biological diversity)

NRM Group III

For countries in Group III receiving A.I.D. assistance, A.I.D.'s general objectives are to assist with developing the human resource base to support NRM activities and to integrate NRM activities into existing or new agricultural/rural development projects. Group III includes the following countries:

Angola	Lesotho
Benin	Liberia
Burkina Faso	Mauritania
Cape Verde	Mauritius
Central African Republic	Nigeria
Chad	Sao Tome
Comoros	Seychelles
Congo	Sierra Leone
Djibouti	South Africa
Ethiopia	Swaziland
Gabon	Togo
Equatorial Guinea	Zaire
Guinea Bissau	Zambia
Ivory Coast	Zimbabwe

E. Developing NRM Country Action Programs

Within the parameters established for each of the three NRM groups, Missions will continue to have primary responsibility for shaping their natural resource programs and determining the appropriate mix of modalities (e.g., non-project and project) and activities (e.g., training, research) to be undertaken.

This will occur through:

- Amendments to ongoing projects;
- Project extensions;
- Shifts in program priorities;
- Added local currency support to sustain ongoing natural resources activities;
- Increased use of existing bilateral and regional training funds for natural resources participant training; and
- Encouragement and increased use by PVO's of available PL-480 resources (both food and local currency) specifically for natural resource activities.

AID/W will continue its efforts to use available funds under a wide variety of regionally and centrally funded projects to further promote the integration of natural resources management activities into Mission objectives.

Recognizing the potential burden of this workload on the Missions, AID/W is prepared to undertake the responsibility for conducting detailed assessments of NRM needs and activities in group I and II countries (see below, section F) to form the basis of Mission action programs.

Group I NRM Country Action Programs

A country NRM Action Program for each NRM Group I Mission must be developed, based on technical considerations. The program should be viewed as tentative, that is, developed without regard to projected Mission approved assistance planning (AAPL) or staffing levels. Budget and staffing concerns will be considered as separate issues.

Group I countries must complete their tentative NRM Action Program during FY 88. As they are completed, they will become amendments to current CDSS's or be incorporated in new Country Development Strategy Statements.

A detailed NRM assessment should be conducted. The tentative Mission NRM Action Program will thus be technically based on the findings and recommendations of the assessment.

The country NRM Action Program should provide clear direction for A.I.D. assistance for the short, medium, and long-term management and rational use of the country's natural resources. It should be specifically tailored to the priority natural resources concerns of the host government and this Plan.

Where appropriate, the elements discussed in Section VIII B of this Plan should be considered as among the options for the tentative country NRM Action Program. To satisfy our need to evaluate our NRM efforts, the program should also include a monitoring component to determine the effects of the NRM activities on the natural resource base and productivity. In addition, gender disaggregated data must be used where possible.

Group II Country Action Programs

Each Mission in Group II may also develop a tentative NRM country action program based on an NRM assessment. The Mission has the option to determine the appropriate level of involvement in NRM activities and to develop a tentative action program.

A tentative action program for Group II Missions should minimally address the specific natural resource concerns identified for that country, and may also include the continuation or expansion of ongoing activities or the development of new bilateral activities.

The level of NRM Group II Mission involvement may be supplemented by regional activities. To lessen the managerial burden, Missions should consider relying heavily on Peace Corps and NGO/PVO's for implementation of NRM activities if village-level activities are foreseen.

Group III Country Programming

Institutional strengthening through training, and integration of natural resources into new or existing agricultural/rural development projects should be the emphasis in Group III countries. Missions may also continue to address natural resources needs in which they have a history of positive involvement.

There will be no special requirements for Missions to develop NRM action programs. Group III countries need not undertake assessments.

New NRM Group III CDSS, CDSS amendments or Program Rationales will reflect this new focus on natural resources management.

F. Country/Regional Assessments

AID/W will be responsible for the technical coordination of the detailed assessments of natural resources needs and activities for NRM Groups I and II. AID/W will also conduct the assessments in cooperation with the Missions.

Alternatively, Missions which have a history of natural resources management and experienced staff may elect to use means already available to them to undertake the assessment without AID/W participation, except for the review of scopes of work.

Because of their necessity to develop tentative NRM action programs during FY 88, Group I countries will be accorded priority service by AID/W.

The assessments will be financed by the Africa Bureau Natural Resources Management Support (NRMS) project (698-0467). REDSO, S&T, PPC/WID, and outside consultant technical support services and resources will be employed where needed. In order to assure country assessment consistency within a sub-region, some country assessments may be part of a regional assessment (more than one country) performed by one assessment team.

Assessments of the two priority agro-ecological sub-regions will include:

--Analyzing host government policies which affect natural resources management;

--Reviewing available technical data on the priority problems to identify information gaps;

--Preparing an inventory of ongoing or planned NRM activities, whether financed by the host country, other donors, or private NGO's;

--Determining which activities best address the Bureau's concerns within the two priority sub-regions;

--Examining A.I.D. natural resources projects that are approaching Project Assistance Completion Dates (PACD) to help Missions determine whether they merit extension, continuation or expansion;

--Ascertaining opportunities for modifying or expanding ongoing agricultural and rural development projects to integrate natural resource concerns under the guidelines of this Plan;

--Exploring the potential for increased reliance on existing NGO and PVO umbrella activities in support of natural resources management;

--Examining possibilities for use of PL-480 and local currency resources in support of natural resource programs;

--Identifying opportunities for participant training in skill areas related to natural resources, either through bilateral projects or regional projects, such as the Human Resources Development Assistance Project (698-0463);

--Analyzing gender disaggregated data as appropriate.

--Reviewing shelf proposals that deserve consideration under Plan guidelines;

--Examining possibilities for country or regional level cooperation with other donors.

--Examining the possibility of undertaking separate new projects for NRM activities.

G. Mission Program Budget and Staff Levels

The ramifications of a continued decline in Africa's natural resource base demand immediate action for improved management. However, the financial costs have not yet been precisely identified, either for African governments, A.I.D., or the donor community at large. As assessments are completed, action plans are formulated, and costs become known, AID/W will allocate Bureau resources in accordance with Congressional and Agency priorities. To some extent, this may require a reordering of Mission budget and staff levels.

H. Regional Projects

Common problems and needs of the different sub-regions identified in

Section III of the NRM Plan may become the basis for regional projects that involve several Missions. For example, the management of soils productivity and soil regeneration in the Arid-Semi-Arid Tropics is a common problem that lends itself to a multi-Mission endeavor in applied research and extension. Similarly, agroforestry solutions involving research centers and suited to a specific agro-ecological sub-region might be disseminated through a regional effort. Regional projects can be implemented by AID/W, universities, existing regional organizations, agricultural research centers and umbrella PVOs/NGOs.

In addition to the NRMS project, natural resource training needs will be identified for inclusion in the new Africa Human Resource Development Assistance Project [698-0463]. Additional project opportunities will be identified for inclusion in projects to be designed in FY 88. Emphasis will include working through existing regional programs and institutions, such as the CGIAR and IARCs, to build on research activities related to natural resources management. An attempt will be made to link field extension activities of PVOs/NGOs to the research activities.

I. Evaluation, Monitoring, and Reporting

Initial monitoring, evaluation, and reporting will be based on refinement of priority indicators and monitoring approaches. The Bureau will work internally and with outside groups to establish natural resources indicators which will reflect a diversity of viewpoints concerning natural resources management in Africa. As part of this effort, the contractor engaged under the Natural Resources Management Support Project will be asked to make recommendations on a practical and cost-effective method that the Bureau can implement to monitor the overall effectiveness of activities initiated under this Plan.

While appropriate continent-wide indicators are being established, targets, benchmarks, and indicators will be set forth in individual projects. The efficacy of individual projects and actions will be assessed through project-level evaluations. The results of project activities and their evaluations will be aggregated on an annual basis to assess the effectiveness and efficiency of A.I.D.'s assistance in natural resources.

This chapter, and particularly this section, will be reviewed in the second year of this Plan to assess effectiveness and progress in determining appropriate indicators. On the basis of the review, targets will be established, redefined, or designated for further refinement, as appropriate.

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ACRONYMS

A.I.D.	U.S. Agency for International Development
A.I.D./W	Agency for International Development/Washington
AMDP	Africa Manpower Development Project
CDA	Cooperation for Development in Africa
CDSS	Country Development Strategy Statement
CEP	Country Environmental Profile
CGIAR	Consultative Group for International Agricultural Research
CILSS	Interstate Committee for the Fight Against Drought in the Sahel
CRS	Catholic Relief Service
DA	Development Assistance
EA	Environmental Assessment
FAO	U.N. Food and Agriculture Organization
FVA	Bureau for Food for Peace and Voluntary Assistance, A.I.D.
IARC	International Agricultural Research Center
ICRAF	International Council for Research in Agro-Forestry
ICRISAT	International Center for Research in the Semi-Arid Tropics
IDA	International Development Association
IEE	Initial Environmental Examination
IGADD	Intergovernmental Group Against Drought and Desertification
IIED	International Institute for Environment and Development
IITA	International Institute of Tropical Agriculture
ILCA	International Livestock Center for Africa
IUCN	International Union for the Conservation of Nature
IVS	International Voluntary Service

Acronyms.....cont.

LWR	Lutheran World Relief
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for Development
NRM	Natural Resources Management
NRMS	Natural Resource Management Support Project
OECD/DAC	Organization for Economic Cooperation and Development/ Development Assistance Committee
OEF	Overseas Education Fund
OPEC	Organization of Petroleum Exporting Countries
PACD	Project Assistance Completion Date, A.I.D.
PL-480	Public Law 480 - Food for Peace
PPC/WID	Bureau for Program and Policy Coordination Office of Women in Development, A.I.D.
PVO	Private Voluntary Organization
REDSO	Regional Economic Development Services Office
SADCC	Southern Africa Development Coordination Conference
S&T	Science and Technology Bureau, A.I.D.
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Social and Cultural Organization
UNSO	United National Sudano-Sahelian Office
VITA	Volunteers in Technical Assistance
WFP	World Food Program
WRI	World Resources Institute
WWF	World Wildlife Fund