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POLICY PAPER
ENVIRONMENT AND NATURAL RESOURCES

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
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I) Executive Summary

Economic growth in most developing countries is possible only with a reliable and sustainable supply of domestic natural resources. Yet the resources essential to economic development are threatened by rapid population growth, extreme poverty, inequitable access to land and other resources, pollution of the air and water, soil toxicity and erosion, short-sighted economic policies, and economic and political instability.

A.I.D.'s environmental and natural resource policies address these fundamental threats to the environment as well as the more immediate consequences of environmental degradation. The Agency's central environmental objective is to promote environmentally sound, long-term economic growth by assisting developing countries to conserve and protect the environment and manage their exploited resources for sustainable yields.

To meet this objective, A.I.D. will:

- 1) encourage and assist developing countries through bilateral and multilateral policy dialogue to formulate national policies and regulations which a) lead to effective management of natural resources, b) discourage environmentally harmful activities, c) encourage environmentally beneficial price and market reform for key commodities and resources, d) stimulate private investment in and local management approaches to natural resources conservation, protection, and restoration;
- 2) assist developing countries in identifying and solving their environmental and natural resources problems by providing technical assistance and helping them strengthen public and private institutional capacities, scientific capabilities, and local skills in resource management;
- 3) support activities specifically designed to achieve sustained natural resource productivity and management while protecting or enhancing the environment;
- 4) ensure that environmental review is fully integrated into all A.I.D.-supported development assistance projects;
- 5) encourage other national efforts and donor projects which are environmentally sound and which have a positive environmental influence, discourage projects which are environmentally unsound, and collaborate with bilateral and multilateral donors to evolve consistent policies and complementary programs;

6) support systematic planning and improvements in the efficiency of energy production and use, and the application of technologies to reduce environmental impacts associated with energy systems; and

7) support basic and applied research, and the transfer of existing scientific and technological knowledge that promotes environmentally sound economic development.

A.I.D.'s assistance will continue to focus on three broad environmental program areas: sustainable production, maintaining natural ecosystems, and meeting human needs by improving environmental quality. Within these program areas, A.I.D. will support forestry (including natural forest management, reforestation, agroforestry, and multi-purpose tree and agroforestry research), soil conservation and watershed management, resource inventories, environmental planning and education, land use planning, rangeland management, water and wastewater treatment systems, improved industrial and urban pollution control, and coastal resources management. Efforts to protect tropical forests and preserve biological diversity will be emphasized. The strategic focus and program mix will vary from country to country based on local conditions, needs, and areas of greatest opportunity.

II) Background

A. Introduction

Sustainable production of natural resources is essential to the Agency's central goal of promoting economic expansion in developing countries. Most A.I.D.-assisted countries depend principally on their renewable resource endowments for economic growth, and will continue to do so for the foreseeable future.

In addition, A.I.D. recognizes that quality of life depends not only on economic and social development, but on environmental quality as well. Clean air and water, fertile soil, and a sustainable supply of renewable natural resources are elements which contribute to the quality of life.

The basic premise that sustained economic growth is possible only with protection and conservation of natural resources underlies the Agency's central environmental objective. This objective is to assist developing countries to conserve and protect the environment and manage their exploited resources for sustainable yields.

In order to accomplish this objective, the Agency developed the environment and natural resource policies that are presented in

this document.

The important relationship between the environment and development has been recognized only within the last 15 to 20 years. The relationship is complex and is not completely understood. Research is necessary to advance our understanding of the linkages between environment and development in order to improve the capacity of A.I.D. and developing countries to promote development and protect the environment in the future. The policies described here will adapt and change as research results and lessons learned from practical experience further clarify the linkage between environment and development.

B. Nature of the Problem

Natural resources^{1/}, particularly renewable natural resources, are essential to sustainable development. Agriculture, forestry, fisheries, and tourism depend on the continued functioning of healthy ecosystems. Yet, these vital resources are threatened by extreme poverty, rapid population growth, inequitable access to land and other resources, pollution of the air and water, soil toxicity and erosion, short-sighted economic policies, and political instability.

Growing by over 80 million people each year, the world's population is expected to increase from the current level of five billion to more than 10 billion in the next century. Although the interaction between population growth and environment is complex, rapid growth exacerbates stress on diminishing resources. Agricultural productivity decreases as more people are forced to place marginal lands under cultivation. Pesticide abuses, watershed deterioration, and destruction of coastal resources increasingly threaten the environment and future economic productivity. Urbanization is proceeding at explosive rates. In many developing countries, urban areas now experience some of the world's worst air and water pollution.

Tropical deforestation and the loss of biological diversity graphically illustrate the magnitude of environmental degradation facing the world today. Since the turn of the century, more than one-half of the world's tropical forests have been lost. More than 11 million hectares of tropical

^{1/} Natural resources are materials that occur in nature and that are useful to human cultures. These resources are renewable or non-renewable and can be described in terms of classes. Of these, A.I.D. is concerned primarily with soils, water, forests, wildlife, fisheries, energy, minerals, plant and genetic resources, and more broadly, ecosystems.

forest are modified, degraded, and converted to non-forest uses each year. A much larger area is damaged to some extent. The erosion, siltation, loss of agricultural productivity, flooding, and fuelwood shortages resulting from massive deforestation adversely affect more than one billion people.

Moist, closed tropical forests cover only about seven percent of the globe's land area, but they provide habitats for more than half of the world's species. It is estimated that between now and the year 2000 nearly one million plant and animal species, or 10 percent of the earth's total, will become extinct. Most of these species will disappear before ever being discovered or classified. The importance of these genetic resources is clear. Wild germplasm is essential for breeding crop varieties with higher productivity and with greater resistance to insects, diseases, and adverse growing conditions. Equally important, tropical forests (as well as aquatic ecosystems) are the source of myriad natural products vital to industry as marketable products (dyes, fibers) or as raw materials for medicines and manufacturing.

C. The Setting

Most developing countries that receive A.I.D. assistance are located in the tropics, the region bounded geographically by the Tropic of Cancer and the Tropic of Capricorn. Potential solar radiation is high throughout the year, subject to varying degrees of cloud cover. Although seasonal fluctuations in temperature are minimal, daily temperature differences in some locations are extreme. The distribution of tropical ecosystems, ranging from arid to humid, is determined by precipitation patterns and physical location. Prevailing wind patterns and sea currents also influence their distribution. A simplified categorization of biogeographic regions is described below.

Humid Tropical Lowlands are characterized by high, evenly distributed annual precipitation (3000 - 4000 mm per year), a continuous growing season, evergreen to semi-deciduous forests, soils of medium to poor quality, and a high diversity of plant and animal species.

Tropical Dry Lands are characterized by medium rainfall (1000-4000 mm per year) and deciduous and evergreen forests. Soils are more fertile than in humid tropical lowlands, and thus are subjected to more intense human use. Most of these regions have been cleared for agriculture and human settlements.

Arid/Semi-Arid Lands are characterized by variable precipitation patterns (20 - 700 mm per year), short growing seasons, vegetation ranging from desert shrub to savanna

woodlands, low soil fertility, and periods of drought. Historically, use of these lands has been based on nomadic human and long-distance migrating animal populations, particularly in Africa.

Wetlands, Coastal Zones, and Islands include both fresh and saline waters along borders of lakes and rivers, estuaries and off-shore resources, such as seagrasses and coral reefs. Plant and animal productivity tends to be very high. These regions, which support forestry, agriculture, and fisheries, are under heavy urban and commercial development pressure. Islands are of special concern; in addition to the above features, they often contain unique and endemic plants and animals (species not found elsewhere).

Highlands in the tropics and subtropics are characterized by variable climate, soils, vegetation, and growing seasons. These regions often contain the headwaters for major river systems, making watershed management a prime concern.

D. Factors Affecting Environmental Degradation

1) A Short-term Perspective

In many developing countries, the requirement to meet immediate, critical human needs frequently overwhelms available natural resources. This severely limits the ability to plan adequately for the future. Furthermore, many governments and private enterprises often do not perceive the benefits of managing resources for sustainable yields as outweighing costs, although this perception is changing. Market demands and economic interests in short-term gains severely hinder the development of a long-term perspective. The economic rationale for natural resource conservation must be recognized in developing countries before governments and the private sector will accept sustained natural resource management and environmental protection as essential to growth.

2) Limited Domestic Resource Base in Relation to Demand

Many developing countries do not have sufficient funds or adequate natural resources to meet demands. Although the natural resource endowment is sufficient in some countries, inappropriate economic policies and politics distort the value and usage of resources. For example, land tenure insecurity and skewed distribution can lead to limited availability, in effect creating a shortage of available land. Regardless of the cause, resource shortages exacerbate environmental degradation. For example, deforestation is accelerated through expansion of farming into marginal areas. The resulting decrease in available fuelwood and other forest products

perpetuates the chain of destruction as rural people seek to meet their basic needs. Energy supplied by dung, for example, reduces fertilizer availability, which often leads to decreased agricultural productivity. In turn, the demand for more arable land increases. This chain of cause and effect with mutual dependency greatly complicates efforts to protect the environment and manage resources for sustainable yields.

3) Inefficiency of Resource Production and Use

Experience indicates that maximizing efficiency in production and use of resources reduces stress on those resources. Indiscriminate or non-selective production methods greatly decrease yields over time. Felling large areas of forest to log a few valuable hardwood species significantly reduces the yield of forest products. Blast fishing, which indiscriminately kills nearly all marine life in the affected area in order to harvest a few marketable fish, rapidly destroys a productive fishery. Inefficiency in resource use also increases demand for greater production. For example, inefficient methods of burning fuelwood or making charcoal accelerate pressure for fuelwood harvesting.

4) Inadequate Knowledge, Training, and Experience in Resource Management

Managing natural resources for sustainable yields requires an understanding and knowledge of the resource itself (life cycles, reproductive strategies, nutrient demands, etc.) and the surrounding physical environment. Effective natural resource management also requires an understanding of the surrounding social, economic, and political environment. Equally important is understanding how the roles of women, men, and children relate to resource use. Appropriate incentives and provision for secure land, fishing rights, and tree tenure are essential considerations in resource management. With these many requirements, developing countries often do not have enough adequately trained personnel to develop and implement resource management schemes. In the absence of this requisite experience, the needed resources often are unsustainably exploited rather than managed. For these considerations to be effectively incorporated into management schemes, training and education are critical.

5) Social and Institutional Aspects of Resource Management

Indifference and unsustainable resource exploitation arise when host country legal frameworks do not permit individuals or groups clear and secure rights to utilize resources. Moreover, developing countries typically have taken centralized approaches to management, which ignore local arrangements for

use rights and local capacity to manage. Increased costs on already overburdened central budgets is often the result. These problems can be addressed through legislative and administrative changes. Broader, clearly defined secure access and use rights, as well as decentralization of authority for resource management and use, are among the necessary changes. Working with local people is an essential component of effective project design and implementation.

Better understanding of the factors affecting the environment has led to greater recognition by developing countries that sustainable resource use and long-term economic development are inextricably linked. A.I.D. is receiving an increasing number of requests for technical and financial assistance to address environmental and natural resource management needs. At the time of the 1972 Stockholm Conference on the Human Environment only 15 industrial countries and 11 developing countries had environment and natural resource management agencies. Just ten years later there were 144 such agencies. Many A.I.D.-assisted countries have now adopted environmental policies and legislation to protect their valuable natural resources.

Many countries are planning, currently conducting, or have completed National Conservation Strategies, country environmental profiles, and other forms of natural resource assessments. More and more countries are already incorporating the resulting information into their national economic planning process. Other donor organizations are also increasing their support for these efforts.

E. Evolution of A.I.D. Programs and Policies

In 1973, A.I.D.'s development assistance focus changed from large-scale, capital-intensive projects to assistance to reduce poverty and improve human welfare through agriculture, health, education, and population planning. This change in focus later facilitated the Agency's efforts to go beyond environmental assessment of development activities to include projects designed specifically to protect and enhance the environment.

In 1976, A.I.D. adopted its first formal environmental procedures, 22 CFR Part 216, commonly referred to as Regulation 16. These procedures, revised in 1980, require a systematic review of potentially negative impacts of all A.I.D. projects. This allows mitigating measures to be included in project design prior to project authorization.

A.I.D.'s environmental policies have evolved in response to host-country needs, initiatives of A.I.D. staff, concerns of the environmental community, and new legislation. Given the

magnitude of global environmental problems, the scope and content of A.I.D.'s environmental and natural resource programs are necessarily complex and will continue to evolve. The major events which have influenced A.I.D.'s policies are summarized in Annex I.

This Policy Paper supersedes Policy Determinations 6 and 7. The policies described in this Policy Paper extend A.I.D.'s efforts to identify negative impacts associated with project activities before they occur (the main focus of Reg 16) and to promote donor and host-country policies, projects, and programs specifically designed to enhance and maintain natural resource productivity while protecting the environment.

The first and more traditional approach to environmental protection is to prevent negative environmental consequences of project activities. This approach requires the integration of environmental considerations into all projects. For A.I.D., this includes conducting initial environmental examinations (IEEs) and, when appropriate, environmental assessments (EAs) or environmental impact statements (EISs) to evaluate the negative impacts of A.I.D.'s activities. Such reviews enable A.I.D. to consider appropriate alternative project designs and mitigating actions. In addition, this approach incorporates effective management of natural resources into development projects and programs that otherwise do not focus on environmental protection. An example is the use of environmentally sound pest management, utilization of soil and water conservation techniques, or integrating agroforestry components as part of an effort to increase agricultural production. Monitoring existing projects to measure and ensure compliance with environmental regulations is essential.

The second approach is to support activities which have as a primary objective sustained natural resource management or environmental protection. Such activities, which often are designed specifically for this purpose, include: 1) promoting sound land use planning and increased cooperation and coordination between key ministries and departments (e.g., agriculture, forestry, environment, energy, and industry); 2) promoting reforestation, agroforestry, and watershed management; 3) conserving biological diversity, including the protection of wildlife and plant genetic resources in preserves and parks, and the generation of alternative sources of income to reduce pressure on wildlands; 4) improving water quality in both urban and rural areas; and 5) encouraging private sector participation in profit-generating programs that conserve natural resources. These activities are implemented either as components of larger projects or as discrete projects designed specifically to manage natural resources for sustained production.

III. A.I.D. Environment and Natural Resources Program

A) A.I.D. Policy Objectives

A.I.D.'s environmental and natural resource policy is based on the premise that environmental protection and conservation of natural resources are essential to sustained economic and social development. The central objective of this policy is to **help developing countries to conserve and protect their environment and natural resources, and to promote long-term economic growth by managing exploited resources for sustainable yields.**

To achieve this objective, A.I.D. will:

- 1) encourage and assist developing countries through bilateral and multilateral policy dialogue to formulate national policies and regulations which: a) lead to effective management of natural resources, b) discourage environmentally harmful activities, c) encourage environmentally beneficial price and market reform for key commodities and resources, and d) stimulate private investment in and local management approaches to natural resources conservation, protection, and restoration;
- 2) assist developing countries to identify and solve their environmental and natural resources problems by providing technical assistance and strengthening public and private institutional capacities, scientific capabilities, and local skills in resource management;
- 3) support activities specifically designed to achieve sustained natural resource productivity and management while protecting or enhancing the environment;
- 4) ensure that environmental review is fully integrated into all A.I.D.-supported development assistance projects;
- 5) encourage other national efforts and donor projects which are environmentally sound and which have a positive environmental influence, discourage projects which are environmentally unsound, and collaborate with bilateral and multilateral donors to evolve consistent policies and complementary programs;
- 6) support systematic planning and improvements in the efficiency of energy production and use, and the application of technologies to reduce environmental impacts associated with energy systems; and

7) support basic and applied research, and the transfer of existing scientific and technological knowledge that promotes environmentally sound economic development.

B) Environment and Natural Resource Assistance Activities

Over the past decade, A.I.D. has become a leader within the donor community in promoting sustainable agriculture, natural resources management, and environmentally sound economic development. In FY 1987, A.I.D. obligated over \$450 million to environmental activities (including ESF support for wastewater treatment systems) in more than 40 countries. During the period including fiscal years 1985 to 1988, A.I.D.'s cumulative assistance for environmental activities was more than any other bilateral donor. Including ESF support, funding exceeded \$1.5 billion. Excluding ESF, cumulative support approached \$700 million.

Agency programs in environment and natural resources are implemented in collaboration with other U.S. and international agencies and organizations, including: non-governmental organizations (NGOs), private voluntary organizations (PVOs), private enterprises, U.S. universities, the Peace Corps, and U.S. Government technical agencies such as the Environmental Protection Agency, National Oceanic and Atmospheric Administration, Forest Service, Fish and Wildlife Service, National Park Service, and the Geological Survey. A.I.D. also works with other assistance agencies through the Organization for Economic Cooperation and Development (OECD), especially through the Development Assistance and Environmental Committees; United Nations Development Program (UNDP); United Nations Environmental Program (UNEP); Food and Agricultural Organization (FAO); and Committee of International Development Institutions on the Environment (CIDIE).

Assistance has concentrated on forestry (including natural forest management, reforestation, agroforestry, and multi-purpose tree and agroforestry research), soil conservation and watershed management, resource inventories, environmental education, land use planning, water and wastewater treatment systems, improved industrial and urban pollution control, and coastal resources management. More recently, greater emphasis has been placed on protecting and sustainably managing tropical forests and preserving biological diversity. The strategic focus varies from country to country depending on local conditions, needs, and areas of greatest opportunity.

These various environmental activities fall within three

mutually reinforcing program areas: sustainable production; maintenance of natural ecosystems and ecological processes; and meeting human needs by improving environmental quality. In these areas, A.I.D. has the opportunity to leverage its assistance efforts by facilitating environmental planning at the national level in order to address the cross-sectoral issues which affect the environment.

1) Sustainable Production

Promoting sustainable production reflects the critical congruence of the Agency's environmental program and primary development assistance objectives. In many developing countries, most economic goods and services depend on the availability of natural resources. With differing emphases, agriculture, forests, rangelands, fisheries, and wildlife-based tourism are critically important to the economies of most developing countries. Legal trade in wildlife from South to North alone produces greater than \$5 billion annually. In 21 A.I.D.-assisted countries more than 75% of energy derives from fuelwood. Forest products, in addition to fuelwood, contribute significantly to income, employment, and trade in most developing countries.

Promoting sustainable production, therefore, plays a critical role in A.I.D.'s economic development efforts. Priority areas include: a) land use planning, management and regulation; b) reforestation and watershed rehabilitation; c) management of natural areas for sustainable yields of resources; d) efficient production and use of energy and the application of environmentally-sound energy technologies; e) coastal resources management; and f) sustainable agriculture and agroecosystem research and planning.

Sustainable Agriculture

Sustainable agriculture is one of the most important aspects of sustainable production. Agricultural productivity must be increased and must be sustainable in order to meet the needs of the world's rapidly growing populations. More food must be grown on less land. Expansion of human settlements and other population-related land conversions result in a loss of an estimated eight million hectares of arable land each year.

Current agricultural practices in many parts of the world often are incompatible with sustainable agriculture. These practices result in overgrazing of rangelands, deforestation in mountain and tropical environments, desertification, waterlogging and salinization of irrigated lands, soil erosion, and soil toxification. In turn, these environmental effects significantly reduce agricultural productivity by decreasing

soil fertility and reducing land available for cultivation. Every year, erosion, desertification and toxification claim seven million hectares of agricultural land.

Growth in agricultural productivity must occur without depleting the natural resources on which it depends. The Agency's Agriculture, Rural Development and Nutrition program recognizes that maintaining and enhancing the natural resource base is critical to the goal of expanding the availability and consumption of food and increasing the income of the poor majority.

A.I.D.'s efforts to promote sustainable agriculture must incorporate the risk-reducing and resource-conserving aspects of traditional farming. Many farming systems have persisted for millennia through careful management of soil, water, and nutrients. In some environments, however, sustained agriculture has been possible only with the application of high levels of fertilizer and other external inputs. (Future development of plant varieties suitable for adverse conditions may eventually allow for low-input farming where high levels of input are currently necessary). In either low-input or high-input sustainable farming systems, the advances of modern biology and technology must be drawn upon. In addition, development of effective agricultural systems requires the full participation of local people and an understanding of how men, women, and children uniquely contribute to resource use. These concerns are woven into all of the Agency's agricultural programs and projects.

Also essential to environmentally sound and sustainable agriculture is the proper application, storage, and disposal of agricultural chemicals. A.I.D. policy is to support more natural pest control efforts through integrated pest management systems. This policy includes efforts to: a) reduce the use of chemical pesticides to the fullest extent practicable; b) use only those pesticides which are proven to be safest to the environment and people; c) discourage general requests for pesticides, and assure that pesticides are used in conjunction with natural control programs; d) develop infrastructures in developing countries for all aspects of proper pest and pesticide management, including regulation of manufacturing, labelling, distribution, worker and public exposure levels, application, storage, and disposal; e) communicate U.S. policies and experience on pest control and pesticide problems to other nations and international organizations; and f) promote the use of supplementary or alternative methods of vector control which are not dependent on the use of toxic chemicals.

2) Maintenance of Natural Ecosystems

Security and maintenance of representative and unique ecosystems, habitats, and wildlife are vital to development. Behind the obvious aesthetic and cultural justification is an economic basis. Wildlife attracts tourism, a major source of foreign currency in many developing countries. Preserved ecosystems protect plants and animals of potentially enormous economic value, not only as wildtype sources to strengthen domestic stocks, but as sources of medicines and materials yet to be discovered. Conservation of natural ecosystems is also critical to maintaining ecological processes such as water regulation and soil retention, both within and outside the protected areas. A.I.D.'s programs and policies in protected areas and parks are described in detail below in Sections C(1) and C(2) under Tropical Forests and Biological Diversity. Priorities include protecting undisturbed areas, maintaining natural areas, and managing buffer zones surrounding protected areas for sustainable resource yields.

3) Improving Environmental Quality: Serving Basic Human Needs

In many developing countries, rapid rates of urbanization and greater industrialization have exacerbated pollution and health problems. The elevated use of chemical pesticides and fertilizers in rural areas and hazardous materials in developed areas contributes to the pollution problems. Poor air and water quality and exposure to pathogens threaten human health.

The U.S. has a demonstrated capability to mitigate the environmental effects of industrialization. The Agency can use this capability to help developing countries improve regulation of hazardous chemicals and promote industrial health and safety for workers. Worker safety could be enhanced, and the release of pollutants into the environment could be reduced, by adapting lessons learned from U.S. industrial experience to the developing country context.

In the area of health and the environment, one of A.I.D.'s traditional strengths has been assistance for low cost water and sanitation programs, mainly in rural areas. In Egypt, substantial levels of Economic Support Funds have been used for urban water and sewage treatment. A.I.D. also supports efforts to diminish contamination of aquifers and water supplies from farm run-off. This is accomplished most directly by decreasing the quantity of agriculturally applied chemicals, a major goal of the pesticide policies described above. A.I.D.-funded research and activities designed to control disease vectors are additional efforts important to improving health in developing

countries.

Population assistance is a significant Agency activity relevant to efforts to protect the environment. Although the interaction is complex, population growth compounds many of the environmental problems faced by developing countries. A.I.D.'s policies regarding population are discussed in detail in the 1982 Policy Paper on Population Assistance.

Energy production and use are also linked to environmental quality. Dramatic increases in the energy requirements of developing countries have the potential to create significant environmental effects, both positive and negative. The particular environmental effects depend on the energy source and specific technology used. A.I.D.'s policies addressing the linkage between energy and the environment are discussed in detail in the forthcoming Energy Policy Paper.

These and other threats to the environment and human health will surely become increasingly severe with time. Mission and A.I.D./W environmental staff may find opportunities to expand activities in the area of environmental quality and pollution control.

C) Special Concerns

1) Tropical Forests

Recognizing the unique role and special environmental characteristics of tropical forests, A.I.D. issued policy and program guidance on humid tropical forests (STATE 328482) in 1984. In this guidance, A.I.D. defines tropical forests as "all forests and shrublands within the geographic tropics and in frost-free areas outside the geographic tropics." Humid tropical forests are defined as "those with a continuous canopy comprised of single or multiple layers found in the geographic tropics where the annual biotemperature in the lowlands is greater than 24 degrees centigrade and where annual rainfall equals or exceeds potential evaporative return of water to the atmosphere."

This Policy Paper reflects broader congressional concern for all tropical forests, giving priority to conserving undisturbed forests, finding sustainable ways to manage natural forests in tropical countries, and finding alternatives to the conversion of tropical forests.^{2/}

^{2/}1986 amendment to Section 118 of the Foreign Assistance Act. See Annex I for details.

It is A.I.D. policy to:

- a) engage in policy dialogues that stress 1) the importance of conserving and managing forest resources for long-term benefit, 2) the importance of appropriate economic incentives and tenure policies, 3) local participation in sustainable management structures, and 4) the key role of the private sector, including farmers, NGOs, and private business, in sustaining forestry programs;
- b) promote the management of existing forests for sustainable yields, including projects that provide extension services on harvesting natural forest products and support for research on sustained-yield timber harvesting for particular forest types;
- c) provide alternatives to forest destruction, encompassing support for projects that offer employment or income alternatives and improved security of tenure to agricultural land to people who might otherwise destroy natural forests. This also includes training and education, and alternatives to destructive farming practices. Some examples are 1) agroforestry projects on marginal lands that provide permanent, sustainable alternatives to slash-and-burn agriculture, 2) the creation of productive buffer zones surrounding protected forests, and 3) support for research that would expand knowledge on tropical forests;
- d) conserve natural forests and support the conservation of forested watersheds, establishment of forest reserves managed for research on natural forest processes, and the designation of biosphere reserves that protect ecosystems representative of particular forest types; and
- e) restore forest resources and support efforts to expand tree planting to help meet wood, energy, food, fodder, crop enhancement and soil protection needs, and to replenish the productivity of both degraded areas and agricultural lands. Examples include afforestation of areas near refugee camps or agroforestry projects to provide food and income in semi-arid regions.

2) Biological Diversity (Biodiversity)

Biological diversity, as defined by A.I.D., refers to the **variety and variability among living organisms and the ecological systems in which they occur**. Species diversity, genetic diversity, and ecosystem diversity are included under the term biological diversity.

The fundamental causes of biodiversity loss are unsustainable

agricultural, forestry, and other practices that result from inappropriate or unenforced governmental policies and the pressure of people, driven by poverty, seeking to meet basic human needs.

A.I.D. recognizes the importance of maintaining and protecting the world's rapidly eroding biological resource base.^{3/} Biological resources are critical to worldwide agriculture, public health, economic growth, and social development. However, only by integrating concern for biological diversity into the Agency's overall efforts to improve the environment and conserve natural resources will A.I.D. have a significant impact. An examination of the roles and practices of women, children, and men is necessary. Understanding how humans, as critical elements of the environment, affect habitat destruction and loss of biodiversity is essential. Biological diversity should be viewed not only in the context of the overall environmental program, but also as inextricably linked to A.I.D.'s efforts to improve human health, increase rural incomes, develop sustained agricultural and forest production, and restore degraded lands.

To protect biological diversity and promote long-term conservation, A.I.D.'s policies address both the root causes of habitat loss and more immediate protective measures. The former are consistent with A.I.D.'s traditional strengths and have been discussed in their respective policy papers or strategy documents. A.I.D.'s policy on the more immediate and narrowly focused measures to protect biological diversity is to:

- a) support efforts such as resource inventories and conservation strategies which identify ecosystems or regions worthy of protection;
- b) encourage the establishment and maintenance of wildlife sanctuaries, reserves, and parks, and promote anti-poaching measures;

^{3/} In 1983 Congress authorized the use of FAA appropriations for assistance to countries for "protecting and maintaining wildlife habitats and ... developing sound wildlife management and plant conservation programs." In providing such assistance, the legislation directs A.I.D. to make special efforts to a) establish and maintain wildlife sanctuaries, reserves and parks; b) enact and enforce anti-poaching measures; and c) identify, study, and catalog animal and plant species, especially in tropical environments. This legislation also directed A.I.D. to convene an interagency task force to develop a U.S. Strategy on the Conservation of Biological Diversity (1985) in developing countries.

- c) support development of buffer zones and promote alternative sources for products normally obtained in protected areas;
- d) support efforts which lead to resource management or land uses which protect and conserve the extant flora and fauna;
- e) support training, education, public awareness, and institution-building specifically to improve the capacity of recipient countries to preserve habitats and adequately manage wild plant and animal resources to prevent species loss; and
- f) encourage and promote policies and policy dialogue which increase the host-country's national commitment and long-term ability to protect diversity.

Legislation over the past few years has singled out tropical forestry and biological diversity from other environmental problems in order to highlight and focus attention on these two vitally important areas of concern. However, in order to prevent destruction of tropical forests and loss of biological diversity, these issues must be addressed as integral components of A.I.D.'s broader environmental protection, natural resources management, and agricultural production efforts. Integration of special environmental concerns into our overall development effort is critical to the management of a coherent, directed, and effective environmental program.

A summary of guidelines on CDSSs and Action Plan treatment of tropical forest and biological diversity conservation is provided in Annex II.

D. Specific Policies and Regulations Governing Environmental and Natural Resources Assistance Activities

In addition to the fundamental interest in economic development and humanitarian concern that underlie A.I.D.'s efforts to protect the environment and conserve natural resources in developing countries, Agency policies in this area are governed by specific legislation and regulations.

1) Environmental Effects of A.I.D. Actions

Regulation 16 (22 CFR Part 216) provides detailed guidance on evaluating the environmental effects of projects, programs and activities proposed for A.I.D. funding. This regulation formalizes the Agency's commitment to ensure that environmental considerations are fully integrated into the A.I.D. decision-making process regarding all A.I.D. funded projects and activities. Since adoption in 1976, and revision in 1980,

these regulations have required systematic environmental review of the Agency's activities. They ensure that the reasonably foreseeable environmental impacts resulting from A.I.D.'s actions are identified in order to permit consideration of alternatives and mitigating features in project design. Guidance for environmental review provides detailed descriptions of the Initial Environmental Examination, the Environmental Assessment, and the Environmental Impact Statement, and states when each type of analysis is required.

2) Local Currency

Since the mid-1950's, PL-480 and related food-aid programs have been a source of support for natural resources conservation and forestry in developing countries. The Agency's policy is to utilize available PL-480 resources for reforestation, agroforestry, watershed management, soil conservation, and park, wildlife, and habitat protection. PL-480 resources are used to complement and strengthen bilateral efforts in environment and natural resources. These resources often are most effective when channeled through PVOs, NGOs, and the Peace Corps. Strong management attention with technical and other supporting inputs are essential to effective local currency programming and implementation of Title II food-aid activities.

The Agency recognizes that some activities funded with local currencies may have potentially serious environmental consequences. Although A.I.D.'s formal environmental procedures (Reg 16) do not apply to activities funded with host country-owned local currency, the Agency is committed to ensuring, through appropriate alternative environmental procedures, that these activities are environmentally sound. Guidance regarding environmental review of these activities is being prepared and will be made available to all posts.

E. Donor Coordination

1) Bilateral Donors

The environmental activities of any single donor agency will be modest relative to the environmental problems facing the world. Efforts to manage the environment and natural resources for sustainable growth must be coordinated and shared by the global community. Thus, A.I.D. is committed to working with other development agencies to seek consistent policies and procedures in relation to the management of the environment and natural resources.

A.I.D. provides other donors with examples of environmental activities; information in the form of guidelines, country profiles, and assessments is also provided. Whenever A.I.D. is

involved in multiple donor-financed projects, A.I.D. participates on the condition that the Agency's environmental concerns are addressed throughout project design and implementation, and that all necessary monitoring and evaluation activities are included in project planning.

2) Multilateral Development Banks

Legislation passed in each of the last several years requires U.S. government agencies to take an active role in reviewing, at the earliest stage possible, the environmental soundness of projects funded by the multilateral development banks (MDBs). The U.S. must also encourage the MDBs to increase their funding for environmentally beneficial projects. A.I.D. works with the Treasury and the State Department in these efforts. Projects that are being reviewed most closely include loans for: agricultural and rural development projects, large dams in tropical countries, and penetration roads into relatively undeveloped areas.

A.I.D. has been actively engaged in monitoring project proposals from multilateral development banks since 1982. In this process, called the early project notification system, A.I.D. solicits comments from its field missions and a small number of U.S. embassies. The primary objective of the review process is to seek changes in proposed projects when serious environmental problems are identified. When serious problems arise, the U.S. government may oppose the project if the development bank does not attempt to address the issues in question.

The process begins one to two years prior to MDB board consideration of key issues, including the impact on the environment, macro and sector policy issues, and project design questions. In response to growing congressional interest, A.I.D. added detailed environmental questions to the system in 1985. Missions are requested to submit information on the extent to which proposed projects may have negative effects on the environment, natural resources or indigenous people. The extent to which these issues have been addressed in the project design is also examined. Being on-site, Missions have a valued perspective on both the environmental and economic development problems of A.I.D.-assisted countries. As a result, Mission comments are the primary source of information used in the review process and subsequent negotiations with the MDBs. Other sources of information include U.S. embassies, a large number of non-governmental organizations (both in the U.S. and abroad) and other interested governments.

IV) Conclusions

Long-term economic growth in developing countries is possible only if natural resources are properly managed. The Agency will continue to expand its focus on natural resources and will increase efforts to assure that natural resource and environmental concerns are integrated into all A.I.D.-supported development activities. The Agency will continue to encourage other U.S. and international organizations to pursue environmentally sound practices. A.I.D. will also continue to support a broad range of institutions and organizations that can contribute to protecting the environment and managing natural resources.

The consequences of the Agency's environmental activities extend beyond immediate environmental and natural resource concerns. Efforts to improve environmental quality and promote sustainable yields of natural resources contribute significantly to the Agency's humanitarian, economic, and foreign policy objectives.

Annex I

Environmental Legislation, Key Publications, and
Significant Events Influencing A.I.D.'s
Environmental Policies and Programs

Note that the summary of legislation given below is not comprehensive, but is presented simply to provide a general overview. Please refer to the text of the legislation for detailed guidance.

1969

Congress passed the National Environmental Policy Act (NEPA) to "encourage productive and enjoyable harmony between man and the environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality."

1972-1974

U.S. participation in the Stockholm Conference on the Human Environment; initial environmental review of A.I.D. infrastructure projects; environment training begun for all A.I.D. engineering staff; first technical assistance provided in industrial pollution control training, environmental guidelines, and environmental assessments of major, multi-donor river basin programs (the Mekong and Senegal Rivers).

1973

New Directions Legislation

1975

Court approved settlement of litigation regarding the effects of A.I.D. activities on the environment.

1976

With NEPA as a guide, A.I.D. adopted its first formal environmental procedures. These require a systematic review of new A.I.D. actions in order to fully integrate environmental considerations into the A.I.D. decision-making process.

1977

The Foreign Assistance Act (FAA) was amended, giving the President authority to strengthen the capacity of developing countries to manage their natural resource base and take into consideration the environmental consequences

of development actions. This legislation also required that specific efforts be directed to maintain, and where possible, restore the land, water, vegetation, wildlife, and other resources that support economic growth and human well-being. When combined with the Agency's own environmental regulations, the essential legislative and policy framework was established to focus attention and financial resources directly on environmental and natural resource problems.

1978

The FAA was amended further to highlight environmental concerns and natural resource issues as critical targets for establishing sustainable growth. FAA section 103, for example, declared that deforestation and its consequences are a threat to improving agricultural production and meeting the basic needs of the poor.

A.I.D. co-sponsored a U.S. Strategy Conference on Tropical Deforestation and began to hire foresters. A policy statement on pesticides was also issued.

1980

A.I.D.'s regulations were revised to allow for greater flexibility, and to incorporate specific procedures on the use of pesticides. The Agency acquired a greater ability to focus on the problems associated with assessing potential environmental impacts of A.I.D.-supported assistance activities. These changes were adapted from improved regulations of the Council on Environmental Quality issued under NEPA, and Executive Order 12114 concerning the environmental effects of major federal actions abroad.

The World Conservation Strategy was issued and a new Forestry, Environment and Natural Resource Office was created in A.I.D./Washington.

1981

Section 118 of the FAA was amended to require environmental assessments for any A.I.D. project significantly affecting the environment. This Act essentially approved and adopted the revised A.I.D. regulations.

A.I.D. co-sponsored the U.S. Strategy Conference on Biological Diversity and issued the first formal Agency policy on forestry.

1983

Section 119, entitled Endangered Species, was added to the FAA. This section stated that the preservation of animal

and plant species through the regulation of hunting and trade, limitations on pollution, and the protection of wildlife habitats should be an important objective of U.S. development assistance. Protection of endangered species was also emphasized.

New Policy Determinations on Environment and Natural Resource Aspects of Development Assistance (PD-6) and on Forestry Policy and Programs (PD-7) were issued.

The Sector Strategy on Environment was published.

1984

The Sector Strategy on Forestry was published.

1985

OPIC investment activities were mandated to be consistent with Sections 118 and 119 of the FAA.

U.S. Strategy on the Conservation of Biological Diversity was published.

1986

The FAA was amended to reflect further concern about the environment and natural resources. The former section 118 on environment was renumbered to 117. A new section 118 was added which requires the president to place a high priority on conservation and sustainable management of tropical forests. This section also states that Country Development Strategy Statements (CDSSs) must include an analysis of actions to conserve remaining natural forests. The amendment also mandates that an annual report be prepared documenting how A.I.D. is implementing this section.

Authorization legislation included a \$2.5 million earmark for the protection of biological diversity.

Section 119 of the FAA was amended to encourage the participation of local people in all stages of project design and development relating to biological diversity. A.I.D. is required to enter into long-term arrangements in which the recipient country agrees to protect ecosystems, support research, and deny assistance for actions that significantly degrade protected areas. CDSSs are required to include an analysis of the actions needed to conserve biological diversity. Whenever feasible, activities are to be carried out by PVOs.

HR3750, now enacted into law, and Section 537(g) of the 1988 Foreign Assistance Appropriations Act, directed A.I.D.

to monitor the economic and environmental soundness of Multilateral Development Banks (MDBs). A.I.D. is required to compile a list of MDB projects which may have adverse impacts on the environment, natural resources, or indigenous peoples.

1988

The A.I.D. Manual for Project Economic Analysis was published. This manual provides guidance on incorporating concerns regarding natural resources and the environment into standard project economic analysis.

Annex II:

Summary of Guidance Cable Addressing
Biological Diversity and Tropical Forestry
in CDSSs and Other Country Plans
(STATE 032584, 03 February, 1988).

Background: 1986 amendments to sections 118 (tropical forests) and 119 (biological diversity) of the Foreign Assistance Act (FAA) require, among other things, that CDSSs, Action Plans, or other country plans include an analysis of (1) the actions necessary to conserve biological diversity and tropical forests in that country, and (2) the extent to which current or proposed AID actions (if any exist in that country) correspond to the actions identified as necessary to conserve diversity.

A.I.D./W recommends that the CDSS, Action Plan, or other country plan analyses also summarize major issues identified in a background assessment (suggested outline below). Actions are recommended for consideration by the Missions and AID/W. Special attention should be given to issues concerning the private sector (including NGOs), the use of local currencies, and collaboration with the Peace Corps. A summary of the biological diversity/tropical forestry sections of the CDSSs, Action Plans, or other country plans will be provided to Congress.

Illustrative Scope of Work For Background Assessment

The Scope of Work should address: 1) the legislative and institutional structures affecting biological resources, including those of the host country government, non-governmental organizations, and international organizations, 2) the status and management of protected areas, 3) the status and protection of endangered species, 4) conservation outside of protected areas, including managed natural systems, impacts of development projects, and ex-situ conservation in zoos, seed banks, etc., 5) conservation of economically important species and germplasm, including land races and wild relatives of agriculturally important crops and livestock, 6) major issues in biological diversity and forest conservation, and 7) recommendations and proposed actions for A.I.D. and other donors.

Assistance Available from AID/W

A number of countries now have local organizations that may be contracted to undertake background assessments. Also, environmental IQCs and other U.S. mechanisms are available for undertaking such studies.

Supplementary short-term technical assistance to Missions for these assessments is available from a number of sources. These include 1) field and AID/W environmental and natural resources staff from Regional Bureaus and their support projects, 2) Bureau for Science and Technology technical support projects, and 3) cooperation with the Peace Corps.