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Habitat Saved and Jobs Created: USAID, the United States, and the Global Environment

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Executive Summary

This brief study examines the benefits to the United States that are realized through USAID programs that work to preserve and protect the global environment. It seeks to expand on the available information by examining and identifying the quantifiable or measurable benefits which result from USAID's efforts abroad.

USAID's environmental strategy focuses on two key areas of environmental degradation:

1) the dangers posed by global warming and climate change and 2) the loss of biological diversity. Central to USAID's environmental strategy is the belief that the self-interest of the United States lies not only in the efforts by federal agencies to protect our domestic environment, but also in assisting other nations in their efforts in this sector. The strategy is based on the recognition that environmental problems are local, regional, and ultimately global in nature.

The benefits to the United States from environmental protection abroad are political, economic, and social. The synergy between economic growth and the environment is of particular importance to sustainable development. Overemphasis on short-term economic growth, however, can have a detrimental impact on natural resources. Therefore, it is necessary to seek a balance between sustained use of resources and economic development.

Without economic growth, developing nations lack the financial

resources needed to advance efforts toward environmental protection. However, lack of progress toward preservation of existing resources results in economic growth that is unsustainable over the long term. After all, the exploitation of natural resources is the foundation for much economic activity. Yet uncontrolled economic growth in developing countries is considered a main cause of environmental degradation. USAID programs that seek to balance environmental and economic concerns help provide a foundation for sustainable economic expansion in the developing world. Domestically, the United States benefits from these efforts through an expansion of export markets and increased demand for U.S. manufactured goods associated with such growth.

USAID's environmental strategy recognizes the inherent danger posed to the United States resulting from environmental degradation and is working to diminish this potential threat. The intangible benefits derived from preserving the environment for present and future generations are important, but so too are the direct dividends resulting from USAID's work in the environment.

Environmental problems increasingly threaten the economic and political interests of the United States and the world at large. Both industrialized and developing nations contribute to the threat (USAID. 1992C. "Protecting the Environment: USAID's Strategy").

During the past three decades, Americans came to realize that environmental degradation, once thought to be a local problem, transcends national boundaries and demands international action. In January 1995, a poll conducted by the Program on International Policy Attitudes found that 79 percent of the respondents believed that the United States Agency for International Development (USAID) should either maintain or increase current efforts to protect the environment abroad. The concern for environmental protection that this poll illustrates is reflected in the high priority placed by USAID on preserving the global environment.

USAID's environmental strategy focuses on two key areas of environmental degradation: 1) the dangers posed by global warming and climate change and 2) the loss of biological diversity. Central to USAID's environmental strategy is the belief that the self-interest of the United States lies not only in the efforts by federal agencies to protect our domestic environment, but also in assisting other nations in their efforts in this sector. The strategy is based on the recognition that environmental problems are local, regional, and ultimately global in nature.

USAID's environmental strategy is driven by the understanding that the United States is not immune from the impact of global environmental degradation. For example, global warming resulting from rising CO₂ concentrations and greenhouse gas emissions affects not only local environments and populations but may also

cause damage on continents thousands of miles from the source of the pollutant. Meanwhile, as declines in the earth's biological diversity continue, the risk to crops from disease and pests grows due to decreasing genetic diversity. Loss of biodiversity also inhibits future medical advances that depend on pharmaceuticals derived from wild plant species for source material. Because these problems, which often begin at the local level, ultimately have global implications, priority must be given to environmental protection on an international scale. USAID has been instrumental in helping developing countries to identify solutions at both the local and international level.

The benefits to the United States from environmental protection abroad are political, economic, and social in nature. Speaking in late 1994, USAID Administrator J. Brian Atwood stated:

"We believe that sustainable development abroad is the best investment we can make to reduce security risks of political and humanitarian crisis. It is the surest way to stem degradation of the global environment... And it is our best strategy to create new markets for American goods and services" (Atwood 1994).

This statement reflects the fact that USAID integrates its environmental strategy with the Agency's other goals of sustainable development: broad-based economic growth, population stabilization, humanitarian assistance, and democracy. The synergy between economic growth and the environment is of particular importance to sustainable development. Overemphasis on short-term economic growth, however, can have a detrimental impact on natural resources. Therefore, it is necessary to seek a balance between sustained use of resources and long-term economic gains.

Without economic growth, developing nations lack the financial resources needed to advance efforts toward environmental protection. At the same time, however, lack of progress toward preservation of existing resources results in economic growth that is unsustainable over the long term. After all, the exploitation of natural resources is the foundation for most economic activity. Yet uncontrolled economic growth in developing countries is considered a main cause of environmental degradation. USAID programs that seek to balance environmental and economic concerns help provide a foundation for sustainable economic expansion in the developing world. Domestically, the United States benefits from these efforts through an expansion of export markets and increased demand for U.S. manufactured goods associated with such growth.

This brief study examines the benefits to the United States that are realized through USAID programs that work to preserve and protect the global environment. It seeks to expand on the available information by examining and identifying the quantifiable or measurable benefits which result from USAID's efforts abroad. Evidence supporting this effort was drawn from USAID program documentation in the environmental technology transfer, biodiversity, and sustainable agriculture sectors. In

addition, non-USAID sources were consulted to provide corroboration, when necessary, of the positive effect of USAID programs on the United States. This work is not intended to be a comprehensive review of the available information on this subject. Rather, it seeks to provide a brief synopsis of the range of benefits to the U.S. that are derived from USAID's environmental programs.

It should be noted that USAID-funded environmental and natural resource projects have not generally attempted to track or calculate the benefits to the United States resulting from Agency efforts in this sector. Rather, the focus has been on the effect a particular project or program has had on a region or country. A review of non-USAID literature found that the subject of the domestic benefits to the United States that result from protecting the environment abroad has only been addressed on a fairly broad scale. For example, deforestation of tropical forests may contribute to global warming, which in the long term may have a negative impact on the United States.

ECONOMICS AND ENVIRONMENTAL PROTECTION

The consequences of poor resource management manifest themselves differently in different countries. But whatever the variations, the impacts will eventually be economic. (Brown 1990).

There is a clear link between the health of a country's natural resource base and its potential for sustained economic growth (Brown 1990). Depletion of non-renewable resources, minerals and forest products for example, beyond certain limits may result in economic disruption as raw materials are no longer available for industry or agriculture. Furthermore, renewable resources such as vegetation play an important role in maintaining other critical resources such as soil and water, which are necessary for sustained agricultural and economic development. Degradation of these resources can lead to significant economic dislocations. A brief review of the linkages between agriculture, biodiversity, and technology transfers and economic activity will help to illustrate the importance of environmental protection for sustained economic growth.

Agriculture

Agricultural productivity is particularly affected by environmental degradation. For example, in regions where wood is scarce, dried dung is often used as an alternative fuel. This change in resource allocation, however, robs the ground of the nutrients necessary for soil regeneration. The effect on grain harvests is an estimated 14 million ton annual loss in production (Brown 1990). Estimates of worldwide productivity losses due to soil degradation range between 0.5 and 1.5 percent of a nation's gross domestic product (World Bank 1992).

Further economic disruptions are evident in the impact of watershed degradation due to deforestation. Damage to roughly 160 million hectares of upland watersheds worldwide is leading to

declines in agricultural productivity and the destruction of fishing grounds in developing countries (Brown 1990). At the same time an additional 6 million hectares of severely degraded drylands are added annually to the 1.3 billion hectares that were measured in 1984 (Brown 1990).

Damage to the natural resource base can lead to difficulties in a country's ability to produce enough food for its population. In Egypt, for example, increases in soil salinity and erosion of fertile soils along the Nile have led to lower levels of agricultural productivity (Brown 1990). As a consequence, Egypt must divert funds that could be used for national development to the importation of food goods.

Biodiversity

A recent USAID study articulates the standard argument for preserving global biological resources: the economic value of the products and services that they provide, e.g., timber and non-timber forest products, maintenance of water supplies, stabilization of local climate, and protection from erosion to name a few (USAID 1992A). One value associated with biological diversity which deserves particular attention is its importance to the U.S. pharmaceutical industry. Approximately 50 percent of all prescription medicines in use worldwide were developed from substances found in nature (NSF 1989). However, less than one percent of all plant species have been studied in laboratories for their medicinal qualities, not including bacteria and fungi about which even less is known (NSF 1989). Despite the critical role of biodiversity, the rate of global extinction continues at a rate between 5,000-15,000 species annually, with no evidence of a slow down (Groombridge 1992, Brown 1990). These numbers are particularly worrisome in light of a 1992 study that found that for every 5000 plant species studied, 40 were used in prescription drugs. Consequently, an estimated eight potentially useful plant-derived medicines are lost for every 1000 species that become extinct (Groombridge 1992).

Researchers have found that 25 percent of all pharmaceuticals produced in the United States have their origins in plant species. The monetary value of these drugs is over \$18 billion in sales in the United States; \$40 billion worldwide (Groombridge 1992, NSF 1989). Based on these data, the importance for the American economy and the country's health of maintaining global biological diversity cannot be underestimated. These two factors alone provide significant evidence for the U.S. interest in protecting the environment abroad.

Further evidence supporting the need to stem the loss of global biological diversity is found in the agricultural sector. Recent studies conducted by the National Science Foundation (NSF) found that 98 percent of all U.S. crop production is related to plant species that originated elsewhere. The crops rely on the genetic variability found in their wild relatives in nature to ward off disease and pests (NSF 1989).

Considering the importance of biological diversity for the general economic benefit to the United States, USAID's investment in this sector seems justified. Key sectors of the American economy -- agriculture and the pharmaceutical industry -- are dependent on the genetic diversity found in nature. Consequently, degradation of global biological reserves could result in significant economic losses and danger to health and nutrition in the United States as resources for the maintenance and expansion of key sectors of the economy become unavailable.

Technology Transfer

Developing countries and those in transition are the fastest growing market for U.S. goods and services (U.S. House 1993, EPA 1994). As these markets continue to expand, the American economy benefits from increased foreign trade and associated gains in employment. The importance of trade between the United States and developing country markets is borne out in statistics on U.S. export trade:

It is estimated that every \$1 billion increase in exports creates 20,000 U.S. jobs.

In 1988, it was estimated that 2.3 million U.S. jobs were dependent on the manufacture of U.S. merchandise exports to developing countries.

In 1990, developing countries purchased \$127 billion worth of U.S. products.

Between 1990 and 1993, exports to developing countries grew by nearly 50 percent, while exports to developed countries grew by only 6 percent.

More than 50 percent of U.S. agricultural exports go to developing countries.

43 out of the 50 largest purchasers of U.S. farm goods are countries that formerly received food aid from the United States (USAID 1992F).

One area of U.S. export trade that is expected to see significant growth in the near future is the environmental technology and service sector "envirotech." In 1993, the global market for this sector was estimated to be \$270 billion, \$155 billion of which was outside the United States (U.S. House 1993, U.S. Senate 1993). If current estimates hold true, this amount is, conservatively, expected to expand to \$400 billion by the year 2000 (Fletcher and Sobin 1994). Some estimates suggest that this market could grow to almost \$600 billion by the end of the twentieth century (U.S. House 1993). At present, 90 percent of this trade is with either Japan, Europe, or North America (U.S. House 1993, EPA 1994). As developing countries begin to address their environmental problems, however, it is predicted that they will become the fastest growing market for environmental goods

and services. It is estimated that environmental expenditures by developing nations will grow by twice that of developed nations (Fletcher and Sobin 1994). If the U.S. maintains its current 40 percent share and captures just 20 percent of the expected growth in this market, 300,000 new jobs will be generated (U.S. House 1993).

Although USAID is not directly charged with export promotion, the Agency's growth-oriented development program complements the work of federal agencies that are involved. As a development agency, USAID programs help create markets for U.S. business and jobs for U.S. workers. In the past, assistance provided by USAID has helped many countries -- Korea, Chile, and Taiwan for example -- become major trading partners for the United States. Thus, U.S. development aid can play a key role in creating a rapidly expanding export market for U.S. goods and services in the envirotech sector. And it is in this sector that we see some of the most visible benefits to the United States from USAID's efforts to promote environmental protection.

USAID PROGRAMS

The direct benefits to the United States from investments to preserve and protect the environment can be found in several USAID program areas. One project in particular, the United States-Asia Environmental Partnership (US-AEP), has taken a proactive approach to assist in promoting the transfer of American environmental technology to developing countries.

United States-Asia Environmental Partnership

Implemented in 1992, the purpose of US-AEP is to help Asian countries to restore, protect, and preserve the fragile and rapidly deteriorating environmental systems in the region. This goal is to be accomplished through the mobilization of U.S. private and public sector expertise and technology. A sub-purpose of the project is to assist American environmental and energy firms to increase their competitiveness in Asian markets (USAID 1992E).

To this end, the US-AEP has taken a unique approach to environmental protection by establishing a partnership between 25 U.S. government departments and agencies and a range of businesses and non-governmental organizations (NGOs). The fundamental belief underlying this approach is that the public sector can no longer act alone to stem the rate of environmental degradation. Rather, only through partnerships with the private sector can true, long-term, change be effected. Implicit in this belief is the concept that sustained economic growth requires a healthy environment; and it is in private industry's best interest to slow damage to the environment so that economic expansion in developing countries continues. Furthermore, without the support of the private sector, attempts to protect the environment may fail.

USAID funding for the five year project is \$100 million. Partner

contributions from other U.S. government agencies, Asian countries, U.S. businesses, Asian businesses, and other sources are expected to add an additional \$400 million. Some of the goals of the US-AEP are:

Up to \$5 billion of U.S. environmental goods and services exported.

Creation of 100,000 new U.S. jobs.

20-50 infrastructure projects with clean technologies.

Assisting developing nations to achieve sustainable development with balanced environmental and economic concerns (USAID 1992E).

In support of the effort to promote U.S. exports, the US-AEP works to assist U.S. firms seeking to enter the Asian environmental and energy market by providing information on planned projects. To date, US-AEP's efforts in this area have yielded a number of success stories. The Environmental Technology Network for Asia (ETNA) and the National Association of State Development Agencies (NASDA) grants program are illustrative of positive impact that the US-AEP has had on the United States.

US-AEP's Environmental Technology Network for Asia

A USAID-funded business center, the Environmental Technology Network for Asia (ETNA), has been established to supply information to U.S. firms which may be interested in selling environmental products and services in Asia. Data provided by ETNA shows that it distributes information on 15,000 potential business leads monthly and initiates follow-on work for close to 100 leads. ETNA's efforts have resulted in the following business for American firms:

A firm in Georgia won a \$200,000 contract to design a sewage collection and treatment system in Indonesia.

A Tennessee firm won a contract for \$2 million to design and install a municipal incinerator and air-pollution control equipment in Korea.

The city of Taipei has entered into a \$2 million contract with a Virginia-based firm to design a wastewater treatment plant and sewage collection system (USAID 1995A).

US-AEP's National Association of State Development Agencies.

Additional evidence of the positive impact of the US-AEP project is the success of its grants program. Operated in cooperation with the National Association of State Development Agencies (NASDA), the US-AEP provides cost sharing incentives to help firms promote and demonstrate U.S. environmental technologies and services in Asia. The NASDA-administered Environmental/Energy Technology Fund provides grants to firms of up to \$20,000 for: 1)

technology workshops or seminars; 2) technology/equipment demonstrations; 3) focused business development missions; and, 4) promotional and marketing activities (USAID 1992D).

This effort has achieved remarkable success promoting American environmental services and goods in Asia. In a recent report to the US-AEP, NASDA provided the following information on the results of the grants program:

As of January 1995, NASDA had awarded 111 grants, 90 of which had been implemented, representing \$1.8 million in grants.

As of January 1995, the number of actual sales by U.S. companies resulting from the grants amounted to \$234 million. In other words, for every \$1 in Federal grant money there has been \$130 dollars in U.S. export sales.

Current projected sales of U.S. goods and services are approximately \$647 million. (USAID 1995B).

The success of the US-AEP in generating exports and jobs for the United States while protecting the environment cuts across the environmental goods and services sector. For example:

A Montana mapping and environmental services firm has had total sales of \$565 thousand in six Asian countries -- Thailand, the Philippines, Taiwan, Malaysia, Indonesia, and Nepal.

A variety of U.S. firms working on air and water quality projects have had sales in excess of \$3 million to Malaysia.

Working with corporations in Indonesia, Taiwan, and Malaysia, the Kansas Department of Commerce and Housing has generated more than \$10 million in sales.

Contracts worth over \$6 million are pending with Indonesia to provide environmental audits for waste disposal, pollution abatement equipment, water/wastewater treatment systems, and coastal zone management services (USAID 1995A, USAID 1995B).

The work performed by USAID under the US-AEP project exemplifies how efforts to protect the environment can benefit the United States. Furthermore, through its two-pronged approach of creating a demand-driven market for U.S. goods and services while protecting the environment, US-AEP illustrates that environmental and economic concerns can be balanced to promote sustainable growth.

Agricultural Programs

As previously stated, 98 percent of all U.S. crop production is based on non-indigenous plant species. Efforts by USAID to maintain or enhance plant diversity through the establishment of genetic seed banks help to preserve the ability of the U.S. agricultural sector to respond to threats from disease and pests. Furthermore, research on non-indigenous plant species and organic

fertilizers can result in improved water and soil quality in many agricultural regions of the United States. USAID-funded agricultural research in developing countries has resulted in a number of clear benefits to American farmers:

A USAID project in Tanzania helped develop bean varieties resistant to a common virus and is being used in United States' breeding programs to safeguard the \$20 million bean industry.

Wheat and rice varieties with dwarfing genes (which produce higher yields on less acreage) found in Asia are now grown on almost two-thirds of the area under wheat cultivation and one-quarter of the rice area in the United States.

Rust-resistant wheat now available in the United States was discovered by USAID-financed researchers in Kenya.

As a result of USAID-financed agricultural research, the University of Wisconsin released snap bean varieties with enhanced nitrogen-fixing capacities that reduce farmers' need for chemical fertilizers by \$15-20 per acre, thus reducing the level of soil and water contamination by agrochemicals.

USAID-funded research at Cornell University led to the development of computer simulation software that is now widely used throughout the United States for optimizing water use.

With the assistance of USAID, Gerber Foods is working in Costa Rica to develop a bean-based weaning food. Applied in its Michigan plant, this technology could increase the crop's value to the U.S. economy by 10-20 fold (USAID 1992F).

Integrated Pest Management

One facet of USAID's efforts to protect the environment abroad that has demonstrable benefits for both developing countries and the United States is support for integrated pest management (IPM) projects. Support for IPM projects assists in not only reducing environmental damage and threats to human health in a targeted country or region but also in lowering the potential harm to consumers by products that had been treated with agricultural pesticides. Furthermore, evidence has shown that reductions in pesticide applications can lead to increased yields to the farmers who use IPM. In Indonesia, for example, a USAID investment in a multidonor project helped show how lower levels of pesticide applications can boost farm incomes from rice applications. As a result of the project, pesticide use dropped 65 percent nationwide, saving \$120 million in insecticide subsidies (USAID 1995C).

While the farmer who adopts IPM is the initial beneficiary of this change in farming systems, the impact can be far reaching. As adoption of these environmentally friendly and sustainable strategies increase, the host country and all its peoples, and eventually the world, will benefit from the cleaner environment and safer food that result from reduced pesticide applications.

(USAID 1995C). In addition, the research and lessons learned from IPM projects abroad often translate into real domestic benefits to the United States. For example:

USAID-funded peanut research developed integrated pest management technology expected to save North Carolina and Virginia producers an estimated \$1.5 million annually (USAID 1992F).

Preliminary tests in Illinois and New York of 240 fungal pathogens available from the international gene pool show that several insects can be controlled through integrated pest management methods which reduce the use of chemical pesticides (USAID 1992F).

Through the Caribbean Basin Initiative (CBI) Act and the Andean Trade Initiative, USAID is providing training and research in IPM to assist industries to comply with U.S. pesticide tolerance and quarantine requirements, thus helping to provide a safer food source for American consumers (USAID 1991B).

USAID-financed research in the agricultural sector, assistance in the development of integrated pest management systems, and projects such as the US-AEP provide evidence of the dividends to the United States from protecting the environment abroad. In the case of agricultural research and the US-AEP project, the impacts are often quantifiable in regards to dollars spent or saved, jobs created, and exports generated.

BROAD BENEFITS

Based simply on the previous examples of the positive economic impact on the United States resulting from USAID's work to protect the environment abroad, the Agency's efforts in this sector appear justified. Jobs are created and exports generated while the potential for sustainable use of non-renewable resources and economic growth is enhanced. In addition, there are a range of important, yet difficult to quantify, benefits that must be considered. These benefits result from the value placed on a particular resource or species, the cost of preventing degradation versus paying the price later, the potential for harm to human health over the long term, and the unknown long-term impact of environmental degradation. In addition, USAID efforts to strengthen the environmental policies, institutions, and human capacity provide benefits to the United States. When taken together with those previously examined, it is these benefits that provide compelling answers to the question of how the United States benefits from protecting the environment abroad.

National Environmental Action Plans

Through USAID assistance provided to developing countries in drafting National Environmental Action Plans (NEAP), the United States benefits from increased environmental regulation abroad. A NEAP is a country-led process that provides a framework for

integrating environmental considerations into a nation's economic and social development (USAID 1992B). Three countries that have received USAID assistance in this area are Sri Lanka, Madagascar, and Ghana.

The NEAP addresses three specific types of action: 1) establishment of an appropriate policy and legislative framework; 2) actions to modify existing projects and new institutional arrangements, and; 3) actions requiring new funding from donors. Thus, not only are environmental policies geared toward slowing the rate of degradation put in place, but so to are the means of enforcement. Consequently, the U.S. benefits both from the cleaner environment and the market for environmental technology and services that result from a NEAP.

The NEAP generates a need for solutions to environmental problems through the establishment of a regulatory and enforcement framework. Because of the development of the framework, a need is established for people and technologies that can provide relief. In addition to the manufacturing jobs created through the demand for equipment, many jobs generated by NEAPs are high paying professional positions (USAID 1992B).

Biodiversity

In addition to the direct economic importance of preserving biodiversity that was explored earlier, a further value is derived from the knowledge that a certain species exist (Groombridge 1992). Researchers in the field of biodiversity have found that a species existence value is often many times higher than its consumptive value (USAID 1992A). Simply put, people are willing to pay for programs to protect a species, even if they never expect to have contact with a particular plant or animal. The recent growth of the ecotourism industry provides ample evidence of the economic value that Americans place on the conservation of natural habitat. Additionally, the importance placed by Americans on these resources is demonstrated by the consistently high level of donations to international conservation organizations (USAID 1992A).

Global Environment

How preservation of the earth's biodiversity contributes indirectly to economic activity is a benefit even more difficult to quantify. While forest and timber products have clear value in regards to their income generating potential, their biological and chemical relationships with other species or resources are also of great importance. The activities and interaction of plant and animal species help to recycle key elements such as carbon, nitrogen, and oxygen that are necessary for sustaining life on earth. These biological resources also act as a buffer against extreme variations in weather, climate and other natural phenomena. Unfortunately, the value derived from these activities is difficult to quantify and, thus, is not often recognized in discussions on the importance of preserving the globe's biological diversity (Groombridge 1992).

Changes in the atmosphere due to anthropogenic activity have been linked to levels of greenhouse gasses (GHG) beyond natural rates, and ozone depletion. Current predictions suggest that global warming due to increased levels of GHGs may result in sea-level rise, leading to saltwater intrusion into the coastal water supplies in the United States. This process could, in turn, result in increased costs to maintain water supplies in coastal communities and could potentially lead to decreased agricultural productivity in the affected region. Further predictions have indicated that global warming could result in an increased frequency of drought in the Midwest.

Health

At the same time, depletion of the ozone layer is linked to increased insolation and dangerous levels of exposure to ultraviolet radiation. Higher levels of ultraviolet radiation is associated with a weakening of the human immune system, damage to food crops and phytoplankton and may lead to higher rates of skin cancer (Porter 1993). Estimates of the potential impact on humans from depletion of the ozone layer include an additional 300,000 cases of skin cancer and 1.7 million cases of cataracts annually worldwide (World Bank 1992).

Security Issues

As environmental and resource scarcity problems rise, the external and internal tensions faced by countries increase as governments seek to provide for their populations. In the Middle East, resource scarcity contributes to the potential for conflict over access to water. Tension between India and Bangladesh continues due to the negative impact of deforestation in the Himalayan foothills on the agricultural potential of the Ganges Plain, for example. Many of the developing countries effected by resource scarcity tensions are key American allies and thus it is in the interest of the United States to act.

Through efforts to preserve the globe's non-renewable resources, USAID environmental programs can help prevent tensions escalating to the point of conflict. When the ability of a nation to feed its population is impaired due to the degradation of its soil or water, it may feel compelled to look elsewhere for the necessary resources. When a country's economy is operating below capacity, or in an unsustainable fashion, destabilization may result. Conflict within or between nations over scarce resources increases the possibility of the United States being drawn into a local or regional conflict. Thus, work by USAID to promote sustainable use of resources and preservation of the environment may contribute to a more stable world. The benefit to the United States from such efforts cannot be measured in terms of jobs created or exports generated; rather, lives saved and conflicts avoided are the yardstick for success.

CONCLUSION

USAID's environmental strategy to protect and preserve the environment abroad not only contributes to the well-being of peoples around the world but also provides positive benefits to the United States. The impact on the United States from USAID's efforts in this sector can be measured a number of ways. Some projects provide very direct and clear economic gains while others are more difficult to quantify.

The US-AEP project, initiated in 1992, has already paid real dividends in regards to U.S. jobs and exports. At the same time, technology transfers and the establishment of biological reserves, key elements of the project, are leading to the sustainable use of non-renewable resources. Meanwhile, USAID-funded efforts in the agricultural sector have benefited U.S. farmers, and human health and the environment.

The USAID focus on maintenance of the earth's biological diversity also yields dividends. The long-term viability of the American pharmaceutical industry, with \$18 billion in annual sales domestically from plant-based medicines, is dependent upon the diversity of species found in nature. At the same time, U.S. agricultural production continues to prosper due to genetic diversity of wild plant species. Thus, efforts undertaken by USAID to slow the rate of species extinction represents a positive benefit to the United States.

USAID's strategy for the environment recognizes the inherent danger posed to the United States and is working to diminish the potential threat resulting from environmental degradation. The intangible benefits derived from preserving the environment for present and future generations are important, but so too are the direct economic dividends resulting from USAID's work in the environment. The growth in employment and exports, and associated economic expansion, would thus seem to justify the high priority that USAID has placed on its environmental strategy.

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