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INTEGRATING POPULATION, HEALTH, AND ENVIRONMENT IN UGANDA

An integrated population-health-environment (PHE) approach to development recognizes the interconnections between people and their environment and supports cross-sectoral collaboration and coordination.

3.2%

Uganda's annual population growth rate, one of the highest in the world.



Young female children in central Uganda carry water containers on their heads.

Greg S. Allgood, Courtesy of Photoshare, 2007

After decades of instability and civil conflict, Uganda has enjoyed relative stability, sustained economic growth, and great improvements in health over the last 20 years. Notable among these have been decreases in infant and child mortality, increased life expectancy, and great strides to reduce the prevalence and spread of HIV/AIDS. During the same period, Uganda's population has grown rapidly, and in 2009 surpassed 30 million people. This rapid population growth is contributing to the degradation of Uganda's natural resources, the backbone of Uganda's economy and household livelihoods. Over 80 percent of the population relies directly upon land, agriculture, and fishing for their livelihoods, but environmental indicators reveal trends of degrading agricultural lands, soil erosion, deforestation, drainage of wetlands, loss of biodiversity, reduced rangeland capacity, and increased pollution.¹ Poverty levels in Uganda decreased significantly between 2002 and 2005, but the African Development Bank still estimates that 51 percent of Ugandans live in extreme poverty (less than US\$1 per day or 2,100 Uganda shillings).² Impoverished households have the least access to health, social, and financial services and will suffer the most from worsening environmental conditions. Continued reductions in poverty depend in large part on finding innovative and integrated solutions to the complex population, health, and environment problems affecting Uganda's poorest people.

Meeting this challenge requires a multisector policy framework, with evidence from various disciplines feeding priority setting, planning, and implementation. At the same time, civil society organizations (CSOs) are essential as they are more likely to experiment with new approaches and collaborate across disciplines. CSOs, therefore, can provide governments with innovative models of integrated service delivery that governments can scale up. An assessment of this "state of integration" was undertaken by an interdisciplinary team led by Pro-Biodiversity Conservationists in Kampala, Uganda, to explore in more detail population-health-environment (PHE) interactions and the opportunities for and challenges of cross-sectoral collaboration and integrated programming in Uganda (see box).



Uganda Population, Health, and Environment Assessment

This policy brief is based on the Uganda PHE Assessment written by Elady Muyambi of Pro-Biodiversity Conservationists in Uganda, with assistance from members of the Uganda PHE Assessment team.

PRB coordinated a comparative study of population, health, and environment integration in East Africa. Teams from Ethiopia, Kenya, Rwanda, Tanzania, and Uganda assessed the state of PHE integration in their respective countries, including identifying relevant stakeholders; assessing the policy environment for cross-sectoral collaboration; highlighting the most salient population, health, and environment issues; and describing the current state of integration among projects, programs, and policies.

The methods used for this assessment include a review of relevant policies, laws, and project documents; key information interviews; and field visits to case study sites. The Uganda PHE Assessment was made possible with funding from the U.S. Agency for International Development (USAID).

Population and Health Trends

Uganda has made great strides in reducing infant and child mortality and in reducing the spread of HIV/AIDS. Infant mortality declined by more than 15 percent and under-5 mortality by 13 percent in the five-year period from 2001 to 2006 through increased investment in basic health services and attention to preventable diseases such as malaria, tuberculosis, and diarrheal disease. Focused attention on educating people about HIV prevention has contributed to a reduction in HIV/AIDS prevalence, from between 10 percent and 15 percent in the early 1990s to 6.4 percent in 2006.³

Basic attention to the health needs of women and their families has lagged behind infant and child mortality trends. Women's health status is compromised by early and repeated pregnancies and inadequate family planning, and maternal health care services, especially in rural areas. More than 40 percent of married women of reproductive age report an unmet need for family planning and Uganda's total fertility rate, among the highest in the world, has decreased only marginally over the last decade to 6.7 children per woman. As a result, Uganda's current population growth rate is also among the highest in the world, at 3.2 percent annually, and Uganda's population has grown from 9.5 million in 1969 to 30.7 million in 2009.⁴

With the rapid growth and young age of Uganda's population (nearly 20 percent are under 5) much remains to be done to further reduce rates of infant and under-5 mortality. Rates vary greatly across the country from lows in Kampala (54 and 94 per 1,000 live births, respectively) to highs in the southwest region (109 and 181 per 1,000 live births, respectively) and in the north. Preventable diseases such as malaria, diarrhea, and respiratory infections are among the most significant causes of infant and child mortality in rural regions and are directly related to environmental conditions. At the national level, only 10 percent of children sleep under an insecticide-treated bednet, a proven means of preventing malaria. Sixty-seven percent of the population has access to an improved water source, but only 40 percent of the population boils their drinking water. Finally, nearly all households rely on firewood and charcoal for cooking in the home, a significant risk factor for acute respiratory infection among children.

Population Density, Urbanization, and Migration

Regional population and health data reveal wide variation in indicators across regions and districts. Population density is highest in the Eastern and central regions that neighbor Lake Victoria and Kampala, and other urban municipalities, as well as along the border where Uganda, Rwanda, and the Democratic Republic of Congo meet. High density in rural areas tends to be in fertile agricultural areas and can be seen as densely cultivated valleys and hillsides with household agricultural plots covering most available land.

At the same time, a growing number of small towns are growing rapidly and becoming urban, characterized by populations greater than 30,000 residents. Uganda's urban population grew by more than 5 percent annually between 1991 and 2002, with Kampala making up 55 percent of Uganda's total urban population. It is estimated

Population, Health, and Environment Indicators in Uganda

PHE INDICATOR	2000-2002	2006-2008
Population size (millions)	24.2 (2002)	30.7 (2008 est.)
Population growth rate (% per year)	3.2	3.2
Total fertility rate	6.9	6.7
Urban	4.0	4.4
Rural	7.4	7.1
Percent of married women using contraception (modern methods)	19.0	24.0
Infant deaths per 1,000 live births	89.0	75.0
Child deaths per 1,000 live births	158.0	137.0
Urbanization (% urban of total pop.)	12.0	13.0
HIV prevalence (% of total pop.)	7.9	6.4
Percent of households with access to improved water source	61.0	67.0
Percent of households with access to improved and nonshared toilet	41.0	58.0
Percent of population using firewood and charcoal as fuel for cooking	97.0	99.0

Sources: Uganda Bureau of Statistics, *The 2002 Uganda Population and Housing Census, Population Size and Distribution*; UNAIDS, *2008 Report on the Global AIDS Epidemic*; Carl Haub and Mary Medeiros Kent, *2008 World Population Datasheet*; and Uganda Bureau of Statistics and Macro International Inc., *Uganda Demographic and Health Survey 2006*.

that approximately 4 million Ugandans now live in urban areas.⁵ Persistent poverty in rural areas contributes to rapid urbanization as people migrate to urban areas with the hope of improved livelihood opportunities. Urban fertility rates of 4.4 children per woman further contribute to urban growth. The continued growth of urban areas places increasing demand on various types of infrastructure and urban services, including housing, water, and sanitation, straining local authorities and culminating in the growth of squatter settlements or slums in Uganda's cities and smaller towns.

In 2002, more than 3 million Ugandans lived outside of the district where they were born, and 1.4 million of these internal migrants had moved between districts in the last five years. Sixty percent of these recent migrants had moved within the same region, while 40 percent moved between regions. Nearly all districts of the northern region were net senders of migrants, in part due to the history of instability in the region. The western and eastern regions of Uganda had higher net levels of out-migration than in-migration but some districts within these regions were attracting migrants. In the central region, nearly all districts were net receivers of migrants including Kampala. Migrants can be characterized as rural-to-rural and rural-to-urban. Rural-to-

rural migrants are attracted by availability of agricultural land or jobs in natural resource industries like mining and timber, while rural-to-urban migrants are attracted by several factors ranging from employment to education. In both contexts, migrants tend to have a greater risk of contracting HIV/AIDS.

Environmental Trends

Most of the indicators of population and health trends presented above are inseparable from environmental conditions in Uganda. Population growth in particular is cited as a major contributing factor to shortages of agricultural land, the loss of forests and wetlands, and poverty.⁶ At the same time, there are indications that HIV/AIDS may also contribute to the degradation of ecosystems.⁷ PHE interactions, however, tend to be more complex when examined more carefully.

For example, underdeveloped water and sanitation systems place a burden on household health and women's time and have impacts on fertility and poverty. Despite improvements in access to improved water supply, it still takes an average Ugandan over 30 minutes to collect water. Research indicates that increases in the time women and girls must spend obtaining water negatively impact girls' education and female participation in the labor force, both of which are associated with early onset of childbearing, high fertility, poorer maternal and child health outcomes, and poverty.⁸ Furthermore, research has shown that scarcity of natural resources may lead to transactional sex in exchange for cash or access to resources, and thus may put women and young girls at higher risk for unwanted pregnancy and for contracting HIV.⁹

Poor sanitation coupled with unsafe water sources increases the risk of water-borne diseases and illnesses due to poor hygiene, contributing immensely to the disease burden in Uganda. Households without proper toilet facilities are more exposed to the risk of diseases such as dysentery and cholera, and approximately nine in 10 households use shared or unimproved toilets. The growth of urban populations throughout Uganda is placing particular stress on municipalities that already lack the infrastructure to meet current water and sanitation needs. Even in densely populated Kampala, 85 percent of households rely on pit latrines. In these urban areas, flooding, poorly constructed latrines, and the resultant runoff of solid waste contaminates waterways and further exacerbates diarrheal disease outbreaks.

The dependence on solid fuels for cooking also presents a burden on time and health. Households in some areas of Uganda are spending an increasing amount of time collecting wood as forests have been depleted. Furthermore, the loss of these forests is contributing to increased poverty.¹⁰ Smoke from charcoal, wood, and other biomass fuels is a major cause of respiratory infections. The type of fuel used for cooking, the location where food is cooked, and the type of stove used are all related to indoor air quality and the degree to which household members are exposed to risk of respiratory infections. Improved cooking stoves that burn more efficiently and chimneys that redirect smoke outside of the home have been promoted as a way of reducing firewood consumption and deforestation, and reducing the exposure of household members to indoor smoke, but 94 percent of households still use open fires and stoves without chimneys for cooking.¹¹

An Integrated Approach to Development

An integrated PHE approach to development recognizes the interconnections between people and their environment and supports cross-sectoral collaboration and coordination to address complex PHE issues and to

meet the multiple needs of poor households. PHE integration places particular emphasis on the population, health, and environment sectors, but the underlying philosophy is fundamentally one of integration. Such an approach can and should accommodate other sectors, such as agriculture and education, and can be successfully applied to achieve a range of development goals from poverty reduction to food security.

In Uganda, the importance of addressing development issues in an integrated fashion is reflected in several recent reports produced by the Poverty-Environment Initiative (PEI) and Uganda's National Environmental Management Authority, supported jointly by the UN Development Programme (UNDP) and the UN Environment Programme (UNEP). In the reports, population is repeatedly highlighted as a main driver of declining availability of ecosystems services, loss of forests, wetland degradation, water pollution, and decreased food and fuel provisions. The reports conclude that greater cross-sectoral collaboration and integrated program design are essential to both reducing poverty and protecting ecosystem services upon which households depend.¹²

Uganda's Development Framework and Key Policies

POVERTY ERADICATION ACTION PLAN

Uganda's Poverty Eradication Action Plan (PEAP) provides an overarching framework to guide public action to eradicate poverty, defined as low incomes, limited human development, and powerlessness. The PEAP provides a framework within which sectors are to develop detailed plans



Terrace farming near Lake Bunyonyi in southwestern Uganda. Farmers clear hillsides for every available parcel of land to raise enough food for consumption, and in some cases, to sell for supplemental income.

Andrew Haugen, courtesy of Photoshare, 2004

along selected priorities presented in five “pillars” or components: economic management; production, competitiveness, and incomes; security, conflict resolution, and disaster management; governance; and human development. In addition, as part of the PEAP process, a working group was formed to focus on cross-cutting issues, including: gender, environment, HIV/AIDS, population, and income inequality. While the PEAP was multisectoral and participatory in its formation, the integration has been lost at the implementation level and agencies remain compartmentalized, pursuing sector interests and obscuring the benefits of integrated planning.¹³ Furthermore, an assessment of the PEAP suggests that it has not been an effective tool for generating increased financial support for poverty reduction priorities and that the identification of priority areas and cross-cutting issues have not necessarily resulted in increased spending for each priority.¹⁴

POPULATION AND HEALTH POLICIES

Uganda’s original National Population Policy (NPP) of 1995 was developed following the International Conference on Population and Development of 1994 (ICPD) and was closely aligned with the ICPD Programme of Action. In September 2008, the Population Secretariat, a semiautonomous body in charge of population policies under the Ministry of Finance, launched a revised National Population Policy for Social Transformation and Sustainable Development with the goal “to improve the quality of life of the people of Uganda through policies and programs that address population trends and patterns.”¹⁵ It spells out pertinent issues for action and includes the following main objectives:

- To integrate population factors and variables at various levels of development planning.
- To monitor population trends and patterns and relate them to socioeconomic development.
- To promote the improvement of the health status of the population.
- To advocate for improved nutrition and food security, increased household incomes, protection of the environment, and sustainable use of natural resources.
- To advocate for planned urbanization and human settlements.

While the objectives and strategies are multisectoral in nature, the implementation of many of the strategies fall largely to individual sectors, despite the recognized broader connections between population, health, poverty, and environmental change. The only discussion of coordination with other ministries or responsibilities of other ministries is in the final statement of the population policy: “For effective implementation and coordination of this policy, line ministries of government, local governments, institutions and CSOs are expected to play their respective roles regarding population concerns in accordance with their mandates.”

THE NATIONAL ENVIRONMENT ACT

The National Environment Act sets up the National Environment Management Authority (NEMA) as the principal agency responsible for the management of the environment and allows it to coordinate, monitor, and supervise all environment activities. The act is currently the most

significant law on the environment. Its goal is “to create and establish an efficient institutional mechanism for environmental management so as to promote and ensure sound environmental planning and integration of environmental concerns into the national socioeconomic development planning process.”

Integrated aspects of the policy include: ensuring the integration of environmental concerns in national planning through coordination with relevant ministries, departments, and agencies of government; liaise with the private sector, intergovernmental organizations, nongovernmental agencies, and governmental agencies of other states on issues relating to the environment; establishment of the Policy Committee on the Environment (PCE) for high-level policy and political oversight of NEMA and to provide multisector coordination at the highest possible level of government; and to provide the highest forum for conflict resolution in case it occurs between sectors.

Cross-Sectoral Collaboration in Uganda: PHE Opportunities at Policy and Program Levels

The policy documents discussed above were formed through multisector discussions and acknowledge connections between population, health, poverty, and environmental change. These integrated policies present many opportunities. In practice, however, the government institutions remain compartmentalized, without legal requirements for consultation with one another, and with poor communication and coordination.¹⁶ There are few sector-wide planning groups that bring together multiple ministries to meet regularly and can lead to improved cross-ministry coordination. Second, there is a lack of financial and human resource capacity since most ministries are already underfunded and understaffed and coordination requires time as well as staff with interdisciplinary training. Periodic research data from research institutions like the Uganda Bureau of Statistics (UBOS), Population Secretariat, and academic and research institutions could enable different actors to develop evidence-based programs. A good example is the regular production of a State of Uganda Population Report by the Population Secretariat, a document that generally reports data from a variety of sectors. However, there is a lack of interpretation of such data for planning purposes. The existence of policy level fora such as the Uganda Parliamentary Forum on Food Security, Population, and Development—an advocacy forum focused on raising attention to these integrated issues—could be used at a legislative level to promote further implementation of PHE integration across different government sectors.

Despite these policy barriers, several nongovernmental organizations, recognizing the multiplicity of health and livelihood needs of households they work with, are integrating various PHE components into field-level projects. Furthermore, a 2005 review of integrated PHE programs in the Philippines and Madagascar offers some evidence that this approach has programmatic benefits in addition to the multiple benefits for households. Integrated programs often provide additional unforeseen value beyond the attention to multisector components, including: the potential for reaching larger numbers of beneficiaries, increasing the participation of women in conservation

activities and the participation of men and youth in family planning and health activities, and greater programmatic and cost efficiency.¹⁷

In Uganda, several integrated projects have brought positive change to households, communities, and their environment in a relatively short amount of time. The following projects are among the success stories.

RUHIIRA MILLENNIUM VILLAGE PROJECT

The Millennium Villages Project (MVP) is a United Nations initiative that supports rural communities to improve quality of life and support livelihoods to meet the Millennium Development Goals. The Ruhira cluster, a mountainous community of villages with approximately 40,000 people, was selected as the first MVP in Uganda in March 2006, mainly because of its lack of access to clean water, and poor sanitation and infrastructure. Residents had complained for a long time about their drinking water, which was often shared with livestock, and most underground water sources were contaminated with unhealthy levels of iron and fluoride. Inadequate water sources had effects on the community beyond health; many girls were responsible for collecting water and long lines contributed to school absenteeism. Furthermore, sanitation was poor—only 45 percent of Ruhira residents had access to a latrine. Other challenges affected daily life, including: poor farming practices leading to a decline in soil productivity, high levels of child malnutrition due to a dependence on banana-based diets, inaccessible medical services, and high rates of tuberculosis and malaria. Additionally, Ruhira households lacked access to financial services and had few livelihood opportunities beyond agriculture, which discouraged the possibilities of investment and saving.

Because the challenges faced by Ruhira were so varied, a holistic approach was developed that included health, water and sanitation, education, agriculture, and enterprise programs, encompassing PHE priorities. There have been several notable achievements since the MVP's inception. A health center with a nursing assistant, midwife, and medical doctor now benefits the community, especially expectant mothers. Insecticide-treated bednets have been distributed, greatly reducing the incidence of malaria. Several local water springs are protected to ensure the provision of safe water.

The MVP's school feeding program has had wide-ranging benefits. Parents who were reluctant to send their children to school now do so willingly because of the food they know their children will get at school. Enrollment rates have gone up and water-harvesting facilities at the schools ensure that children no longer have to walk long distances to get water.

Agriculture and livelihoods opportunities have expanded as well. Over 7,000 farming households have received bean and maize seeds and yields have doubled. With the increased yields come more opportunities to sell crops as opposed to using them solely for household needs. Seventeen producer business groups have been created, cutting out middle men and giving more profit to farmers. In addition, a village bank has been established and is overseen by a women's group, with low interest rates available to community members.

CONSERVATION THROUGH PUBLIC HEALTH (CTPH)

Villages located near protected areas face unique risks and challenges. These communities are often remote, with little access to health care and knowledge of disease. In southwestern Uganda, population growth has pushed people to settle closer to gorillas' habitat, sometimes resulting in conflict and disease transmission. Founded in 2003, CTPH's mission is to promote conservation and public health by protecting wildlife and improving health care for people near protected areas. CTPH's vision is to ensure the well-being of the people living near protected areas and the animals who often share habitats with them by preventing and controlling disease transmission and cultivating support of conservation.

CTPH focuses on three programs, each incorporating a PHE approach:

- **Human Public Health.** Grassroots community education campaigns through brochures, flipcharts, and posters focus on hygiene practices, ecotourism, PHE issues, diseases like TB, and family planning. A second component strengthens community-based health care in villages around Bwindi Impenetrable National Park, a UNESCO World Heritage Site. Volunteers teach family planning methods so that parents can provide for their children and reduce the pressure on nearby forests and wildlife.
- **Wildlife Health Monitoring.** Park staff collects fecal samples from gorillas and livestock at a CTPH field clinic. The results are shared with medical and wildlife professionals as an early warning system for disease outbreaks that may affect humans.
- **Information, Education, and Communication.** A CTPH "telecenter" provides computer courses and access to e-mail, Internet, and public health and conservation research, and develops educational materials on conservation and public health.

Targeted home visits have affected those who live on the outskirts of the park and have not been reached from the integration conservation and development initiatives. Since CTPH's founding, more people have been reached by family planning services through home visits (1,800 in one year alone), and there has been a 1,200 percent increase in TB referrals. Public education initiatives such as community drama group performances on links between diseases, livelihoods, and ecotourism have reached over 7,000 people.

Increasing Understanding of PHE Linkages and the Way Forward for PHE Planning and Integration

The Uganda PHE assessment identified several communication, program, and policy objectives that present opportunities for increased understanding of PHE interactions at policy, program, and local levels:

- **PHE Network.** The newly established East Africa PHE Network—launched in Addis Ababa in 2007—will help to improve communication about PHE issues among policymakers, researchers, and practitioners within Uganda and throughout eastern Africa. The PHE Network serves as a forum for information

exchange about cross-cutting PHE issues, community networking, accessing resources, and advocacy for greater cross-sectoral collaboration across the East Africa region.

- **Media.** The media provides opportunities for communicating PHE issues and integrated approaches to policymakers and their constituents. In Uganda, the press enjoy the freedom to report on difficult issues related to development. Diverse media organizations provide opportunities for messages about PHE issues to reach local and national target groups. Exemplary programs like those from the Straight Talk Foundation, which implements media programs on sexual and reproductive health, as well as those on environmental issues through the Tree Talk program are leading the way in communicating these issues to local communities.
- **Explore Specific PHE Interactions.** Several dimensions of PHE interactions need to be more fully explored to identify what policy responses can be designed to effectively address issues such as rural-urban migration and the strain on urban services. Another issue requiring further attention is the linkage between reproductive health needs, HIV/AIDS, and the environment.

Raising awareness of the links between population, health, and environment among policymakers, development planners, and project implementers; strengthening institutional capacity for cross-sectoral collaboration; and ensuring funding and support for rigorous interdisciplinary research and program evaluations are essential for successful cross-sectoral integration in Uganda. Progress in these areas will lay the foundation for more effective participatory development efforts that increase human well-being and sustain healthy environments.

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References

- 1 Uganda Bureau of Statistics (UBOS), *2005/2006 Uganda National Household Survey* (Kampala: UBOS, 2006); and National Environment Management Authority (NEMA), *State of Environment Report for Uganda* (Kampala: NEMA, 2007).
- 2 UBOS, *Report on the Socio-Economic Module of the 2005/2006 Uganda National Household Survey* (Kampala: UBOS, 2006).
- 3 UBOS and Macro International, Inc., *Uganda Demographic and Health Survey 2006* (Calverton, MD: UBOS and Macro International Inc., 2007).
- 4 UBOS, *2009 Population Estimate*, accessed online at www.ubos.org, on May 26, 2009.
- 5 Carl Haub and Mary Medeiros Kent, *2008 World Population Data Sheet* (Washington, DC: Population Reference Bureau, 2008).
- 6 NEMA, *State of the Environment Report for Uganda 2006/2007* (Kampala: NEMA, 2007).
- 7 Lori Hunter, Roger-Mark De Souza, and Wayne Twine, "The Environmental Dimensions of the HIV/AIDS Pandemic: A Call for Scholarship and Evidence-Based Intervention," *Population & Environment* 29, no. 3 (2008): 103-07.
- 8 Nadeem Ilahi, "The Intra-Household Allocation of Time and Tasks: What Have We Learnt From the Empirical Literature?" *Policy Research Report on Gender and Development, Working Paper Series 13* (Washington, DC: World Bank, 2000); and Ruth Levine et al., *Girls Count: A Global Investment and Action Agenda* (Washington, DC: Center for Global Development, 2008).
- 9 Elin Torrel et al., "Examining the Linkages Between AIDS and Biodiversity Conservation in Coastal Tanzania," *Ocean & Coastal Management* 49, no. 11 (2006): 792-811.
- 10 Center for Resource Analysis Limited (CRA), *Ecosystems, Ecosystem Services, and Their Linkages to Poverty Reduction in Uganda, Final Report* (Kampala: CRA, 2006).
- 11 UBOS and Macro International Inc., *Uganda Demographic and Health Survey 2006*.
- 12 CRA, *Ecosystems, Ecosystem Services and Their Linkages to Poverty Reduction in Uganda, Final Report*.
- 13 Ellady Muyambi, *An Assessment of Population, Health, and Environment Integration and Cross-Sectoral Collaboration: Uganda Country Level Assessment* (Kampala: Pro-Biodiversity Conservationists, 2008).
- 14 CRA, *Ecosystems, Ecosystem Services, and their Linkages to Poverty Reduction in Uganda, Final Report*.
- 15 Population Secretariat, Ministry of Finance, Planning, and Economic Development, *National Population Policy For Social Transformation and Sustainable Development* (Kampala: Population Secretariat, 2008).
- 16 Muyambi, *An Assessment of Population, Health, and Environment Integration and Cross-Sectoral Collaboration: Uganda Country Level Assessment*.
- 17 John Pielemeier, *Review of Population-Health-Environment Programs Supported by the Packard Foundation and USAID*, accessed online at www.wilsoncenter.org, on Sept. 8, 2008.



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