INTEGRATING POPULATION, HEALTH, AND ENVIRONMENT IN KENYA

by Melissa Thaxton

Kenya faces tremendous development challenges in nearly all sectors: Poverty is endemic, deforestation is continuing, and infant mortality remains high. Still, most development efforts—whether by government or nongovernmental organizations—focus resources and expertise on one particular area, such as reforestation or improving maternal and child health, rather than integrating interrelated concerns into a holistic approach. While a number of policies and programs linking population, health, and environment concerns have been tried in Kenya, an assessment of the overall "state of integration" had not been undertaken until recently (see Box 1). The lessons from this assessment, undertaken by the National Coordinating Agency for Population and Development and the University of Nairobi, suggest that integrated programs require greater efforts in planning, coordination, and communication, but they can yield substantial rewards for communities and the environment, including reduced dependence on forest resources, greater food security, cleaner drinking water, and increased access to health services.[1]

Population, Health, and the Environment: What Are the Links?

The number of people, where they live, and how they live all affect the environment. People alter the environment by clearing land for development, using natural resources, and producing wastes. Changes in environmental conditions, in turn, affect human health and well-being. Rapid urbanization, deforestation, and polluted water and air, for example, all pose challenges for policymakers in Kenya and elsewhere in Africa.

The integrated population-health-environment (PHE) approach to development recognizes the interconnectedness between people and their environment and supports cross-sectoral collaboration and coordination. As its name suggests, the approach places particular emphasis on the population, health, and environment sectors. However, the underlying philosophy is fundamentally one of integration. It can accommodate other sectors and be successfully applied to achieve a range of development goals, from poverty reduction to food security to gender equity.

Box 1

Kenya Population, Health, and Environment (PHE) Assessment

This policy brief is based on the Kenya PHE Assessment coordinated by the National Coordinating Agency for Population and Development (NCAPD) and conducted by the University of Nairobi and the Kenya PHE task force between October 2006 and April 2007.

The Population Reference Bureau coordinated a comparative study of population, health, and environment integration and cross-sectoral collaboration in East Africa. Teams from Ethiopia, Kenya, and Tanzania 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 to conduct the assessment in Kenya included a review of relevant government policies and project documents, key informant interviews, site household surveys, and focus group discussions. The Kenya PHE Assessment was made possible with funding from the U.S. Agency for International Development (USAID).

Box 2

Kenya's Economic Development History

Immediately after Kenya's independence from Great Britain in 1963, the country pursued a development strategy that was informed by African socialism, but placed unambiguous emphasis on rapid economic growth rather than human development. The new government assumed that poverty, unemployment, and income disparities would improve as a result of a robust economy. These issues were considered tangential to economic growth. Access to education and health services, property rights, political participation, and equality and nondiscrimination were envisioned from a purely economic perspective.

In 1978, Kenya entered a new phase of economic and human development with the implementation of Structural Adjustment Programs and economic policies that introduced some drastic measures involving trade liberalization, privatization of public enterprises, retrenchment of public employees through public sector reforms, and reductions in government expenditure. These measures led to the imposition of user fees on such social amenities as education and health, and diminished the access to these services by the poor and vulnerable.

At the same time, Kenya was seeing economic growth. The country's economy grew by an annual average of 6 percent between 1964 and 1980 and by 4 percent between 1980 and 1990. But Kenya faced declining per capita income in the 1990s. Between 1990 and 2002, the country saw annual GDP growth of 1.9 percent while the population grew 2.9 percent annually. Even with a substantial economic recovery since 2003 and a decline in absolute poverty from 52 percent to 46 percent between 1997 and 2006, Kenya remains one of the poorest countries in Africa.

SOURCE: United Nations Development Programme (UNDP), *Kenya Human Development Report, 2006.*

Kenya's Development Policies

Kenya's development history has been unsteady since the country gained its independence from Great Britain in 1963 (see Box 2). There has been some progress in recent years, however. Education reforms, such as free and compulsory education in primary schools, have translated into more children in school with a good balance between girls and boys.[2] HIV prevalence fell from 6.8 percent to 6.1 percent between 2003 and 2005.[3] And since 2003, Kenya has seen positive economic gains, with the gross domestic product (GDP) growth rate reaching 5.8 percent in 2005.

Millennium Development Goals

In September 2000, Kenya pledged to achieve the UN Millennium Development Goals (MDGs) by the target date of 2015. A national MDGs task force—consisting of the Ministry of Planning and National Development, the UN system, nongovernmental organizations (NGOs), and the private sector—was created to spearhead the efforts to achieve the goals laid out by the declaration.[4] So far, Kenya has made noteworthy progress toward meeting two of the eight MDGs: achieving universal primary education (Goal 2), with 90 percent of girls and 95 percent of boys now enrolled in primary school; and combating HIV/AIDS, malaria, and other diseases (Goal 6).[5]

Kenya Vision 2030

Since 2005, Kenya has worked to develop a long-term national development strategy called "Kenya Vision 2030." The Kenya Vision 2030 envisions a globally competitive and prosperous nation with a high quality of life by 2030. The vision is anchored on three key pillars:

- The economic pillar: Kenya maintains a sustained economic growth rate of 10 percent per annum over the next 25 years.[6]
- The social pillar: Kenya achieves a just and cohesive society enjoying equitable social development in a clean and secure environment.
- The political pillar: Kenya establishes an issue-based, people-oriented, results-oriented, and accountable democratic political system.

Population Trends and Policies

Kenya's population—which includes more than 70 tribes and peoples—has increased rapidly during the past half century, from 8 million in 1960 to 37 million in 2007. With a current growth rate of 2.8 percent per year, the country's population is projected to reach 51 million by 2025. The population is young: 42 percent are under age 15 and only 2 percent are age 65 or older.[7]

Kenya was the first sub-Saharan African country to adopt a National Family Planning Program—in 1967.[8] The relatively long history of population programs in Kenya includes a number of successes. The total fertility rate now stands at 4.8 lifetime births per woman (below the average of 5.5 children per women for eastern Africa[9]) and nearly one-third of reproductive-age women use modern contraceptives. However, use of family planning methods—especially injectables, combined oral contraceptives, and IUDs—has plateaued in recent years. The total fertility rate remains well above the so-called replacement level of 2.1 children per woman—the number of children that would lead to a stable population size.

The stagnation in family planning use has been attributed to a stall in socioeconomic progress, intermittent availability of contraceptive methods, the shift of health agencies' focus and resources to the fight against HIV/AIDS, and a lack of continuous family planning education and outreach. Twenty-four percent of married women report an unmet need for family planning—that is, they would prefer to avoid a pregnancy but are not using a contraceptive method. In one effort to revitalize the family planning movement in Kenya, the National Coordinating Agency for Population and Development (NCAPD) is leading a process of "repositioning family planning," which attempts to gain greater government support for family planning programs through information dissemination and advocacy. Some encouraging progress was made in 2005, when the Ministry of Health created a budget line for reproductive health services, calling family planning a priority. This additional support has improved the availability of commodities at family planning delivery points where commodities are free.

Kenya's recently revised National Population Policy incorporates the targets contained in the Programme of Action of the International Conference on Population and Development (ICPD) held in Cairo in 1994. The policy is implemented through a collaborative process involving stakeholders from both public and private sectors, including nongovernmental and community-based organizations. The policy emphasizes raising awareness among decisionmakers and development planners about the effect that population change can have on social and economic development, and the benefits of lowering fertility.

And the policy seeks to "match the population growth to the available national resources over time in order to improve the well-being and the quality of life of the individual, the family, and the nation as a whole."

The policy recognizes that population increase is putting greater pressure on natural resources and warns that the degradation of the nation's soils, water sources, and forests will constrain the country's ability to produce food and guarantee acceptable health and economic standards.[10] The policy implies a responsibility within the population and health sectors to deal with environmental issues and lays the foundation for population-health-environment cross-sectoral collaboration.

Health: A Mixed Picture

Kenya has seen a mix of positive and negative trends in its health sector. While access to safe water and sanitation is improving (62 percent and 48 percent of the rural population had access to an improved water source and improved sanitation, respectively, in 2002),[11] infant and child mortality indicators, among others, are deteriorating. As the table shows, the key health indicators did not improve between 1993 and 2003: Infant and child mortality are rising, fertility and family planning use are stagnant, and completed vaccination coverage has deteriorated sharply. Stunting (chronic malnutrition) has decreased somewhat, but still affects almost one-third of the children under age 5. Maternal mortality has decreased only nominally.

The underlying causes of increased infant and child mortality may include: reduced access to health services for the poor following the introduction of user fees; decline in food availability; decreased immunization coverage and efficacy (due to the decline in completed vaccinations); persistence of HIV/AIDS as a major health problem (life expectancy decreased from 58 years in 1990 to 53 years in 2007 because of AIDS); and persistent poverty, with 58 percent of Kenyans now living on less than US$2 a day.[12]

There are opportunities for integrating environmental issues within the health sector, especially within sanitation and hygiene programs. Typhoid,

Kenya's Population and Health Trends, 1993-2003

Indicator	1993	1998	2003*
Percent of married women using contraception (modern methods)	27.3%	31.5%	31.9%
Infant deaths (< age 1) per 1,000 live births	62	74	77
Child deaths (< age 5) per 1,000 live births	96	110	118
Maternal mortality, deaths per 100,000 live births	—	590	396
Percent children (ages 12-23 months) fully vaccinated	79%	65.4%	60.1%
Percent children <age 5 stunted	—	33.0%	30.6%
Total fertility rate** (lifetime births per woman)	5.4	4.7	4.8

* Excludes northern and northeastern provinces not included in previous surveys for comparability.
** The average number of lifetime births a woman would have given current birth rates.

SOURCE: Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro, *Kenya Demographic and Health Surveys*, 1993, 1998, 2003.

diarrhea, cholera, and intestinal worm infestation have increased in Kenya during the past several years, particularly in low-income areas with poor sanitation services. Water pollution from urban and industrial waste poses an environmental problem in most parts of the country. The government—through the National Health Policy Framework—is addressing these problems by shifting the emphasis from curative health services to preventative health care. However, Kenya does not yet have a well-conceived strategy for addressing environmental health issues.

Environmental Challenges

Kenya is home to 35,000 known species of flora and fauna. Remarkable conservation achievements have been made during the past half century; most notably the establishment of more than 50 national protected areas, including five Biosphere Reserves and three World Heritage Sites. Thirteen percent of Kenya's total surface area is currently in protected areas. The government has long been committed to conserving Kenya's valuable natural resources and wildlife and has enacted a number of policies for environmental management and conservation, such as the Wildlife Policy, Forest Policy, Fisheries Policy, and National Land Policy.

Despite these efforts, a wide range of environmental problems persist. Key environmental challenges in Kenya include a decline in wildlife populations, deforestation, soil erosion, and water scarcity—due in large part to increased areas of land in agricultural production and livestock grazing and increased demand for wood for fuel and timber. Three-quarters of Kenya's population live in rural areas and 64 percent of the economically active population depend on agriculture as their primary source of income. With only 20 percent of the land surface suitable for cultivation, a rapidly growing population puts tremendous pressure on land and water resources. Furthermore, continued deforestation, loss of natural habitat, and illegal poaching have led to a decline in most wildlife species in the country, including large mammal species such as elephants, rhinoceros, and wildebeests; 113 animal species are now threatened or endangered in Kenya.

The deterioration of Kenya's environment has precipitated a number of environmental hazards that have affected public health and safety. The lowland areas of western Kenya have suffered regular flood disasters, for example. Kakamega, in western Kenya, and Muranga, in central Kenya, have experienced serious landslides. Other environmental and health hazards include the increased incidence of waterborne diseases in western Kenya, and the devastating invasion of water hyacinth (*Eicchornia crassipes*) in Lake Victoria and mesquite (*Prosopis juliflora*) in dryland environments.

The Need for an Environment Policy

The Environmental Management and Coordination Act (EMCA, 1999) serves as Kenya's principal legal instrument on the environment, but there is no comprehensive umbrella policy on the environment. Currently, the alternative to a far-reaching environment policy is *Sessional Paper No. 6 of 1999 on Environment and Development*. The overall goal is the integration of environmental concerns into the national planning and management processes and provision of guidelines for environmentally sustainable development. It specifically cites poverty, population growth, rural-urban migration, and urban environmental degradation and pollution as key challenges to achieving this goal.

Over the years, the government tried to implement environmental policies within a multisectoral development framework. However, strategies to achieve these objectives have not been fully developed or implemented. They have been blocked mainly by the lack of institutional capacity and resources to mobilize and link activities effectively within and between sectors. Moreover, the individual environmental policies that now exist do not adequately articulate the links between population and environmental concerns. An umbrella policy on the environment is necessary to:

- Clearly demonstrate population-environment linkages;
- Harmonize and streamline the existing environmental policies;
- Provide the National Environmental Management Agency (NEMA) with the necessary management procedures and institutional mandates—which are officially endorsed by the Ministry of Environment and Natural Resources (MENR)—to uphold EMCA; and
- Successfully integrate environment into a national sustainable development framework.

Cross-Sectoral Collaboration in Kenya: PHE at the Policy Level

The Kenya PHE assessment showed that existing national policies have embraced the spirit of cross-sectoral collaboration. However, the country lacks clear legal frameworks and institutional capacity to carry out policy mandates and recommendations.

A review of all the relevant regulatory and structural frameworks is necessary to develop an implementation strategy that will ensure that working across sectors becomes the norm within the various government agencies. Some of the key contentious areas to be considered are institutional guidelines on leadership, coordination, and control of PHE programs and projects; and sharing of institutional budget allocations to finance PHE programs and projects.

New initiatives in Kenya are attempting to strengthen cross-sectoral collaboration and coordination, reflected especially in the Kenya Vision 2030 and its economic, social, and political pillars. In addition, the Kenya Poverty Environment Initiative (PEI) was established as a partnership between the Ministry of Planning and National Development and United Nations Development Programme in 2007. The purpose of PEI is to include environment concerns in the development policy, planning, and budgeting process by improving understanding of environment-poverty linkages, strengthening the government's capacity to implement environmental policy that benefits the poor, developing tools for the integration of environment into development plans and budget processes, and increasing effective participation of stakeholders in environment and development policymaking and planning processes.[13]

Integrated Projects and Approaches in Kenya: PHE at the Community Level

The PHE assessment found that most policymakers and development professionals in Kenya now prefer the cross-sectoral collaboration approach to development. A recent (2005) review of integrated programs in the Philippines and Madagascar offers some evidence to support this view. The review concluded that, very often, integrated PHE programs yield better results than single-sector programs and are more programmatically efficient.[14]

One of the most valuable benefits of integrated programming—according to the results of operational research and the views of NGO practitioners—is the potential for reaching expanded target audiences.[15] PHE programs have been especially effective in increasing the participation of women in conservation activities and the participation of men and youth in family planning and health activities. Integrated programs have also documented reduced operating expenses by avoiding duplication and redundancy and strengthening cross-sectoral coordination at the local level; galvanized and maintained greater community goodwill and trust; and increased women's status and self-perception in project areas, especially when programs include microcredit or other livelihood activities.

Even with all the benefits associated with integrated programming, many challenges exist in making these integrated projects work. Traditional funding mechanisms within donor agencies make it difficult to fund such projects. Integrated PHE projects have come under increased scrutiny from development planners and the donor community, with analysts questioning whether they are more cost-effective and at least as successful as single-sector focused projects.[16] Alternative cost-effectiveness analyses may be needed to measure the time and cost savings of integrated approaches. Community members' time is not usually incorporated into cost estimates, for example, yet integrated programs can save their time by discussing several sector-specific issues at a single meeting. And multiple project interventions can be planned, implemented, and monitored using common management plans and evaluation systems.

The institutional capacity for PHE projects is still weak in Kenya. Collaboration between government departments, lead agencies, and NGOs require clear mechanisms such as the Memorandum of Understanding (MoU), but these often do not exist for integrated PHE projects. And communication and publicity efforts are not yet broad enough to garner the support and cooperation of all key stakeholders, particularly at the community level.

Despite these challenges, some successful integrated projects have brought positive change to people and the environment in a relatively short time. The following four projects are among the success stories.

Il Ngwesi Group Ranch

The Il Ngwesi Group Ranch (Laikipia District), which represents a community of approximately 6,000 people, established an ecotourism project to

conserve wildlife and local culture, create employment, and reduce overdependency on livestock by generating alternative livelihood options. An ecolodge generates income to provide benefits to the community, such as new schools and improved community health services, including an improved water supply, distribution of mosquito bed nets, and an intensive AIDS awareness campaign. Through conservation measures such as controlled grazing, watershed protection, and reforestation, the project has reduced environmental degradation and slowed the loss of wildlife species in a relatively short period of time, with significant payoffs for the local community. For example, a pilot program by the Laikipia Wildlife Forum enabled the first black rhino to be reintroduced into Il Ngwesi Group Ranch in 2001. Currently, Il Ngwesi has three black rhinos and is one of the few areas in sub-Saharan Africa where the local communities have mandates to protect an endangered species. Such effective environmental stewardship has helped Il Ngwesi become a popular tourist draw and, with the success of the ecolodge, the project has proved to be self-sustaining after the initial donor investments.

Kibera Water and Sanitation Project

The Kenya Water for Health Organization (KWAHO) has implemented the Kibera Water and Sanitation Project in Nairobi's largest informal settlement—an urban slum with 10 villages and an estimated 500,000 to 700,000 people. The project has helped the community construct ventilated pit latrines, educate community members on health and hygiene, and establish a garbage collection point, among other activities. Solar Water Disinfection (SODIS) was introduced as a simple and cheap technology to purify drinking water for household consumption using radiation from sunlight. The project demonstrated that impoverished communities are willing and able to adopt modern, environmentally friendly technologies to improve their quality of life, and that community-based organizations are critical for mobilizing people to engage in such PHE projects.

Kiunga Marine National Reserve Project

The World Wildlife Fund (WWF) has integrated a comprehensive health component into its Kiunga Marine National Reserve (KMNR) Conservation and Development Project, which encompasses seven villages in Lamu District. WWF, the Ministry of Health, and local partners now provide reproductive health and child immunization services; basic hygiene, malaria, and HIV/AIDS prevention awareness; and have opened a staffed dispensary. Conservation measures, which are implemented by WWF and the Kenya Wildlife Service, have included exchanging illegal fishing gear for legal, sustainable gear and cooperating with WWF to demarcate no-go zones for fishing so that marine life can regenerate. Introducing an effective health component into the larger Kiunga project has prompted an increase in goodwill among community members, improved health, increased access to and use of family planning, and fostered greater participation in conservation activities.

Sauri Millenium Village Project

The Millennium Villages Project is a United Nations initiative aimed at empowering and working with impoverished rural communities in 12 countries in Africa—including Ethiopia, Kenya, Rwanda, Tanzania, and Uganda—to achieve the Millennium Development Goals within 10 years. People in the selected villages work with a wide range of experts including scientists from the Earth Institute at Columbia University and the World Agroforestry Center (ICRAF), as well as local development professionals and community-based organizations with expertise in agriculture, nutrition, health, education, energy, water, communications, and environment.

Sauri Millennium Village, located in Siaya District on Lake Victoria, is a conglomerate of 11 villages and one town of about 5,000 people. When the project began in July 2004, 85 percent of the population was experiencing food insecurity. Notable improvements in agricultural production helped reduce food insecurity to 18 percent by 2007. The Sauri Millennium Village Project helps provide safe drinking water through rainwater harvesting and improved springs; improve sanitation through the construction of pit latrines; reduce malaria cases in the village through the widespread distribution of treated mosquito nets and a malaria prevention communication campaign; and enhance the natural environment with the planting of indigenous tree species around springs and establishing community tree nurseries.

While the projects benefit tremendously from the knowledge and skills of international experts and large financial inputs—advantages few other integrated initiatives enjoy—the Sauri project is providing valuable lessons on PHE integration. Noteworthy lessons include:

- Strong leadership and effective management are essential to successful community-based PHE projects that must integrate a wide variety of interventions and engage multiple stakeholders.
- Cross-sectoral interventions can be introduced at different times and at different scales, depending on the needs and priorities of the stakeholders.
- Low-cost interventions, such as rainwater harvesting, improved cook stoves, and pit latrines, can quickly improve the health and well-being of communities and provide incentives for continued engagement in such longer-term initiatives as reforestation and immunization efforts.

Challenges Remain but Integration Is Worthwhile

Some PHE interventions, such as those promoting household hygiene, child immunization, and reforestation, take more time to achieve results and, therefore, require continuous awareness-raising in the targeted communities to keep stakeholders engaged. Interventions that are relatively simple and cheap are more readily adopted than interventions that require heavier investments, thereby limiting their popularity and sustainability. And interventions to improve livelihoods can be adversely affected by market circumstances outside the projects' control.

Lack of consistent data across sectors, particularly at the local level, makes evaluation of PHE programs extremely difficult. Furthermore, cross-sectoral research is still very limited and without standard methodologies, variables, and indicators. This hinders scientific contributions to the discussion on the benefits and challenges of integration and exacerbates the research-to-policy gap.

The Kenya PHE assessment concluded that integrated approaches—at both project and policy levels—are more complicated and time-consuming in the preliminary planning phases, requiring greater communication and coordination than single-sector efforts. Yet once strategies are in place to implement integrated policies and programs, the results—in terms of program outcomes and bureaucratic efficiencies—surpass those of single-sector programs.

What does Kenya need to do to continue these efforts? The assessment showed that existing policies have embraced the spirit of cross-sectoral collaboration, but that Kenya lacks the clear legal frameworks and institutional guidelines necessary to make integrated projects a reality and help the nation realize the Kenya Vision 2030. Enhancing integration among sectors will require:

- Establishing a strong institutional framework that links existing policies and creates incentives for pursuing integrated approaches;
- Building institutional capacity to link activities among sectors effectively and to manage multifaceted programs;
- Disseminating best practices in PHE approaches;
- Improving communication and networking among organizations in different sectors;
- Maintaining an effective policy advocacy campaign to raise awareness and win policymakers' support for cross-sectoral collaboration; and
- Creating mechanisms for institutional collaboration, which is a key ingredient for PHE integration.

Strengthening human and institutional capacity will make it possible to fully reap the benefits of integration in Kenya's development efforts in the long term. The result will be an improved quality of life for the Kenyan people and a healthier environment for their children to inherit.

References

[1] Francis Mwaura, *Population, Health, and Environment Integration and Cross-Sectoral Collaboration: Kenya Country-Level Assessment* (June 2007), available from info@ncapd-ke.org.

[2] UNFPA, *Kenya Country Profile,* accessed online at www.unfpa.org, on Sept. 17, 2007.

[3] UNAIDS, data accessed online at www.unaids.org, on Oct. 4, 2007.

[4] The eight Millennium Development Goals are: 1) eradicate extreme poverty and hunger; 2) achieve universal primary education; 3) promote gender equality and empower women; 4) reduce child mortality; 5) improve maternal health; 6) combat HIV/AIDS, malaria, and other diseases; 7) ensure environmental sustainability; and 8) develop a global partnership for development.

[5] UNFPA, *Kenya Country Profile*; and UNAIDS, data accessed online at www.unaids.org, on Oct. 4, 2007.

[6] Since 2003, Kenya has tried to improve economic performance through its Economic Recovery Strategy (ERS). By 2005, the GDP growth rate had reached 5.8 percent.

[7] Carl Haub, *2007 World Population Data Sheet* (Washington, DC: Population Reference Bureau, 2007).

[8] UNFPA, *Kenya Country Profile*.

[9] Following UN definitions, East Africa includes Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Reunion, Rwanda, Seychelles, Somalia, Tanzania, Uganda, Zambia, and Zimbabwe.

[10] National Council for Population and Development, Ministry of Planning and National Development (MPND) [Kenya], *Sessional Paper No. 1 of 2000 on National Population Policy for Sustainable Development* (2000).

[11] World Bank, *2006 World Bank Indicators* (Washington, DC: The World Bank, 2006): 105.

[12] Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro, *Kenya Demographic and Health Survey 2003* (Calverton, MD: CBS, MOH, and ORC Macro, 2004).

[13] United Nations Environment Programme, *Poverty and Environment Initiative: Kenya Profile*, accessed online at www.unep.org on Sept. 20, 2007.

[14] John Pielemeier, *Review of Population-Health-Environment Programs Supported by the Packard Foundation and USAID,* accessed online at www.wilsoncenter.org, on Sept. 4, 2007.

[15] Pielemeier, *Review of Population-Health-Environment Programs Supported by the Packard Foundation and USAID*.

[16] Pielemeier, *Review of Population-Health-Environment Programs Supported by the Packard Foundation and USAID.*

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