

INTEGRATING POPULATION, HEALTH, AND ENVIRONMENT IN TANZANIA

by *Melissa Thaxton*

The number of people, where they live, and how they live, all affect the condition of 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. Rural poverty, a high population growth rate, deforestation, and fresh water scarcity, for example, all pose challenges for policymakers in Tanzania and elsewhere in Africa (see table, page 2).

While links among population, health, and the environment are sometimes acknowledged in national-level policies and development strategies, most development efforts continue to employ a traditional sectoral approach, aligned with the division of government services and institutional structures. In doing so, opportunities for achieving superior results—in cost-effectiveness,



programmatic and administrative efficiencies, and programmatic outcomes—by employing an integrated, holistic approach may be missed.

The Population, Health, and Environment Approach to Development

The population-health-environment (PHE) approach to development recognizes the interconnections 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, such as agriculture and education, and can be successfully applied to a range of development goals, from poverty reduction to food security to gender equity.

To explore the opportunities for and challenges of cross-sectoral collaboration and integrated programming in Tanzania, an assessment of the overall “state of integration” was recently undertaken by an interdisciplinary team led by the Institute of Resource Assessment at the University of Dar es Salaam (see Box 1). The assessment showed that most—but not all—of Tanzania’s major sectoral policies recognize population-health-environment interrelationships, but that cross-sectoral

Box 1

Tanzania Population, Health, and Environment (PHE) Assessment

This policy brief is based on the Tanzania PHE Assessment written in 2007 by the late Dr. N.F. Madulu, formerly of the Institute of Resource Assessment (IRA)/University of Dar es Salaam and the members of the Tanzania PHE Assessment team: Dr. Hussein Sosovele, IRA and World Wide Fund for Nature; Grace Lusiola, EngenderHealth; Joseph Kihale, Vice President’s Office (VPO-Environment); Arnold Mapinduzi, VPO-National Environmental Management Council (NEMC); and Jamal Baruti, Lake Victoria Environmental Management Project (LVEMP).

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



© 2004 Lyda Martin, Courtesy of PhotoShare

Children walk along the beach at Paje on the east coast of Zanzibar.

Population, Health, and Environment Trends in Tanzania, 1990 to 2005

PHE Indicator	Around 1990	Around 2005	% Change
Population size (millions) ^a	24.6	38.2	+55.3
Population growth rate (% per year) ^b	2.8 ('78-88)	2.9 ('88-2002)	+3.6
Population density (people per km ² of arable land) ^b	26	39	+50.0
Total fertility rate (lifetime births per woman) ^c	6.3	5.7	-9.5
Modern contraceptive use (% of currently married women using modern methods) ^c	7	20	+285.7
Life expectancy at birth (years) ^d	51.5 ('85-90) 48.5 ('90-95)	52.5 (2005-10)	+1.9
Infant deaths (< age 1) per 1,000 live births ^c	107	68	-36.4
Child deaths (< age 5) per 1,000 live births ^c	141	112	-20.6
Percent children under five stunted ^c	43	38	-11.6
Urban growth rate (annual percent) ^b	9.2	6.2	-32.6
Urbanization (percent urban of total pop.) ^b	18	23	+25.5
HIV prevalence 15-59 ^e	—	6.8	—
Percent of population living on less than US\$2 per day ^f	—	90	—
Percent rural population with access to improved water source (2002) ^f	—	62	—
Deforestation (% land forested) ^g	45	40	-11.1

— Not available or not applicable.

SOURCES:

- [Tanzania] Planning Commission, Population Planning Unit, Tanzania Population and Development, www.tanzania.go.tz, accessed Oct. 16, 2007.
- Tanzania Population and Housing Censuses, 1978, 1988, 2002, Growth rates refer to periods 1978-1988 and 1988-2002.
- Tanzania Demographic and Health Surveys, 1991/92 and 2004/05.
- UN Population Division, *World Population Prospects* (www.un.org, accessed Oct. 17, 2007).
- Tanzania HIV/AIDS Status*, www.tzdac.or.tz, accessed Oct. 17, 2007.
- C. Haub, *World Population Data Sheet* 2005 and 2006 editions.
- Globalis Interactive World Map: forested area, globalis.gvu.unu.edu, accessed Oct. 17, 2007.

collaboration and integrated programming at the district and community levels are rare.¹

Tanzania's Development Policies

National Development Vision 2025

In 1999, Tanzania unveiled a new development plan known as the National Development Vision 2025 (Vision 2025). This was the first new long-term vision for Tanzania's national development since the Arusha Declaration of 1967, which established many of the country's long-standing ideals such as national unity and self-reliance. Vision 2025 is meant to update its earlier development plan to take into account current economic realities such as intense global market competition. Vision 2025 sets out ambitious goals for high and shared economic growth, high-quality livelihoods, peace, stability and unity, good governance, high-quality education, and international competitiveness.

Vision 2025 aspires to transform Tanzania from one of the least-developed countries to a middle-income country by 2025. In addition, Vision 2025 stipulates that fast economic growth will be pursued while reversing the current degradation of Tanzania's forests, fisheries, fresh water, soils, and biodiversity, and the accumulation of hazardous substances in the nation's air and water.

National Strategy for Growth and Reduction of Poverty

The National Strategy for Growth and Reduction of Poverty (NSGRP, 2005) is a national framework that puts poverty reduction high on the country's development agenda. The NSGRP is based on the goals of Vision 2025, and also takes into account the Millennium Development Goals (MDGs) to reduce poverty, hunger, diseases, illiteracy, environmental degradation, and discrimination against women by 2015.

The NSGRP calls for enhanced participation of civil society, the private sector, and local and international partnerships in social and economic development. The strategy outlines goals, targets, and actions for three critical areas: economic and income growth; improvement of quality of life and social well-being; and governance and accountability. The ultimate goal is to achieve sustained, broad-based, and equitable economic growth through community participation, good governance, and local government actions.

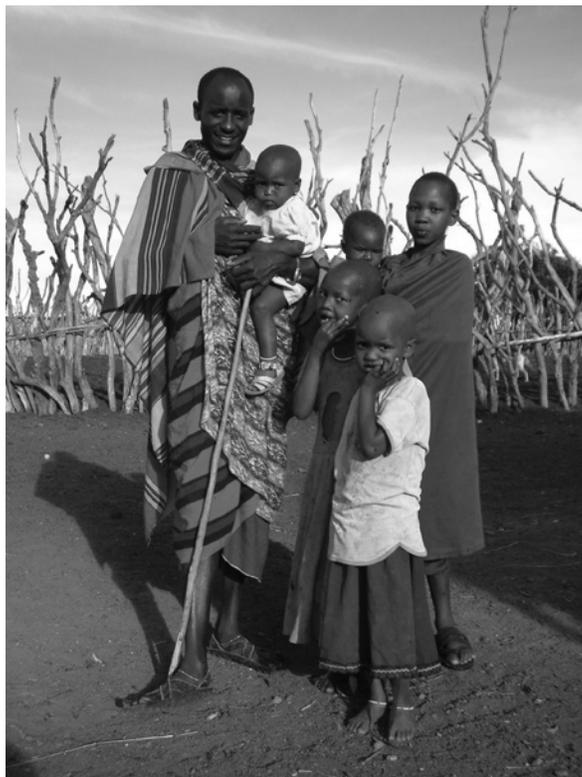
Agriculture remains the most important single sector in the economy in terms of its contribution to gross domestic product (GDP), employment provision, and poverty reduction.² Because the agricultural sector is expected to lead the economy for years—perhaps decades—to come, it is the main focus of the NSGRP. Even with excellent average annual growth—5.8 percent annually between 2000 and 2004—the agricultural sector lags behind the annual growth rate target of 10 percent by 2010.³ Competitiveness in agriculture is—and will continue to be—challenged by a high AIDS prevalence. With an infection rate of 7 percent, AIDS is hindering the productive capacities of households: It is estimated that between 1985 and 2020, the disease will cost Tanzania 13 percent of its agricultural labor force.⁴

The NSGRP identifies environment as a cross-cutting theme and recognizes that the majority of the population, especially in rural areas, depend on such natural resources as forests, fisheries, and soils for their livelihoods. However, the NSGRP makes only a passing reference to Tanzania's population growth. It does not incorporate current population trends into the discussion on poverty, livelihoods, and environmental sustainability.⁵

Population Trends and Policies

Tanzania has undergone profound demographic change since its independence from Great Britain in 1961. The population has more than tripled in less than four decades from 12 million in 1967 to 38 million in 2005. Forty-four percent of Tanzania's population is under age 15, making Tanzanians among the youngest populations in the world.⁶ Population growth has been consistently high over the past 40 years, ranging from 2.6 percent per year in 1967 to an all-time high of 3.2 percent in 1978. Since then, growth gradually declined to 2.9 percent.⁷ The country's population is projected to reach 70 million by 2025.⁸

Women's health status continues to be compromised by early and repeated pregnancies and inadequate family planning and maternal health care services, especially in rural areas. The Tanzania Demographic and Health Surveys (DHS) indicate that the total fertility rate (lifetime births per woman) has stalled at 5.7,⁹ with significant geographic disparities: The rate is 6.5 among rural women and 3.5 among urban women. High fertility has implications for both infant and maternal



© 2004 Peter Verhulst-Brown, Courtesy of Photohore

A Maasai man in Arkaria, Tanzania, and his five children stand by the corral where the family keeps the valuable cattle that provide them with nutrition.

morbidity and mortality. Data from the 2004/05 DHS show that pregnancy-related mortality has not improved over the past decade.¹⁰ During the same time period, the proportion of births attended by trained personnel has dropped from 44 percent in 1990 to 36 percent in 2004.

Tanzania's National Population Policy (NPP) was revised in 2006 to provide a framework for integrating population variables in the development process. Cross-sectoral collaboration is a hallmark of the revised policy, which states that the NPP will be implemented through a "multi-sectoral and multi-dimensional, integrated approach." Furthermore, it recognizes "the linkages between population dynamics and quality of life on one hand, and environment protection and sustainable development on the other."¹¹

Unlike the NSGRP, this policy makes an explicit link between a high rate of population growth and "adverse impacts on various sectors of the economy and the country's environment." Among its policy objectives are to enhance integrated planning, sustainable use, and management of natural



© 2005 Ashley Finanti, Courtesy of PhotoShare

Boys gathered for the African Medical and Research Foundation (AMREF) Bonanza in Dar es Salaam, Tanzania.

resources, along with equitable allocation of safe and clean water in rural and urban areas.¹²

Health

Malaria is the prime killer of children in Tanzania, while HIV is the largest cause of adult mortality. HIV mortality was the main reason that life expectancy dropped from 52 years in the late 1980s to 49 years in the early 1990s. Recent data indicate substantial reductions in infant and under-5 mortality¹³ and more modestly reduced rates of child malnutrition, though the prevalence of stunting (chronic malnutrition) in children is still high at 38 percent. Life expectancy is estimated at 53 years in the 2005-2010 period.

More effective prevention and treatment of malaria are likely to be important contributors to improved health, especially in reducing infant and under-5 mortality.¹⁴ Immunization rates have been sustained at a high level; however, substantial urban-rural, regional, and socioeconomic differences remain. Rural poor children are more likely than their urban counterparts to die. Those who survive are more likely to be malnourished.¹⁵

Tanzania's urban population has grown at a rapid rate: more than 6 percent per year for the past three decades. About 23 percent of the population now lives in urban areas. Environmental problems are serious in the unplanned, often congested settlements. There is lack of separation between hazardous and nonhazardous industrial, domestic, and hospital waste, and poor management of landfills. Industrial effluent, noxious gases, and vehicular exhausts pollute water in lakes, rivers, and the ocean, and the air

in major urban centers like Dar es Salaam, Mwanza, Arusha, and Mbeya. Rapid urbanization has led to the depletion of forest resources once found around cities and towns, increased health hazards and pollution, and intensified poverty.

Nearly two-thirds of rural households in Tanzania have access to an improved source of drinking water.¹⁶ More than 90 per cent of households report having toilet facilities—mostly pit latrines—but the available data cannot reveal whether these constitute basic sanitation.¹⁷ There is a close link between water supply, sanitation, hygiene practices, and waterborne diseases such as cholera. Since the first major cholera epidemic was reported in Rufiji in southern Tanzania in 1977, cholera has spread to most regions of the country and has remained a chronic problem ever since. In some regions like Dar es Salaam, cholera can be considered endemic. Diarrheal diseases such as cholera remain a major cause of child morbidity and mortality, especially in urban areas.

Over the past decade, access to health services has improved, especially in urban areas where private-sector involvement in provision of health services has developed. In rural areas, however, inadequate medicine supplies and too few skilled health providers continue to plague the country's health sector. Improvement in health will require greater cross-sectoral cooperation and coordination, especially between the Ministries of Education and Culture; Agriculture and Food Security; Water; and Community Development, Women, and Children, as well as nongovernmental organizations. The 2003 National Health Policy, along with the National Development Vision 2025, expand the scope of the health policy to include additional aspects of human health, such as food self-sufficiency and gender equality and empowerment.

Environmental Challenges and Responses

Biologically, Tanzania is one of the wealthiest nations on Earth and is a globally recognized natural heritage site.¹⁸ Its diverse terrestrial, marine, and freshwater ecosystems provide habitat for a wide array of plant and animal species. Home to the fifth-largest number of species in Africa, Tanzania is a “megadiversity” country—one of a few nations that together account for a disproportionately large percentage of global diversity.

More than 25 percent of Tanzanian territory enjoys some level of protective status, including 15 percent set aside for biodiversity conservation. About 50 percent of the total land in Tanzania is covered by forests and woodland and 40 percent by grassland and scrub. Only 6 percent to 8 percent is cultivated.

Tanzania's Participatory Poverty Assessment (2002/03) confirmed that most people in the country directly depend on the environment not only for income-generating activities, but also to provide their basic needs, such as food, building materials, fuelwood, and medicine.¹⁹ At the same time, the natural resource base continues to deteriorate as a result of deforestation, overgrazing, overfishing, inappropriate farming methods and soil erosion, pollution, and biodiversity loss.²⁰ Inadequate accountability and governance and institutional weaknesses have contributed to losses from such natural resource revenue sources as forestry, fisheries, and minerals.

The government of Tanzania designed and implemented environmental policies aimed at improving conservation and management of natural resources and people's well-being;²¹ raising public awareness about environmental issues and the links between environment and livelihoods; and promoting international cooperation on the environment agenda.

Tanzania's National Environmental Policy (1997) links major environmental problems to demographic factors and outlines the need for cross-sectoral collaboration to achieve positive environmental outcomes:

"Demographic factors and trends have a synergetic relationship with developmental and environmental issues. In any case, a rapidly growing population, even with very low levels of consumption per capita, implies increasing consumption in absolute terms. This affects the use of land, water, energy and other natural resources.

In view of the multiple linkages involved, environmental policy objectives on population must have a broader focus than controlling numbers. Population programmes are more effective when implemented in the context of appropriate cross-sectoral policies [and] within a holistic view of development."

The policy also directly recognizes public health issues and the linkages between water, sanitation, hygiene, and waste disposal:

Box 2

Population, Health, and Environment Linkages in Tanzania: The Experience of the Usangu Plains

Situated in Tanzania's Southern Highlands, the Usangu-Ihefu ecosystem consists of the Great Ruaha River, a large natural network of wetlands, and expanses of fertile soil. Rich in biodiversity, the ecosystem supports a wide range of economic activities, such as hydropower, large-scale agriculture and plantations, mining, tourism, and small-scale farming and fishing.

Recent years have witnessed significant decreases in dry season flows in the Great Ruaha River, to the extent that long stretches of the river are completely dry for up to three months—a phenomenon unknown prior to 1999. Studies have concluded that rainfall and stream runoff from the highlands have not changed; rather, large-scale dry season water extraction from the Great Ruaha and its tributaries by large rice irrigation schemes, upland tea and coffee estates, exotic wood plantations, and mining activities, and the presence of more than 30,000 small landholders has profoundly altered the level and flow of the river's water.

The rich natural resource base of the area has provided substantial improvements in the livelihoods of the local people, and many immigrants have moved to the area since the 1960s to take advantage of economic opportunities available there. (The population growth rate in the Great Ruaha River catchment was 4.8 percent between 1967 and 1978, and has since dropped to 2.2 percent.) But with the decrease in the river's water volume, human and environmental health have suffered. Rural poor communities have lost an important source of fresh water for drinking, domestic use, and farming; the establishment of a game reserve to protect ecologically important swamps and wetlands has excluded livestock keepers from principal watering and grazing areas; the area has witnessed increased conflict between farmers and livestock keepers over dwindling water resources; decreased river water levels and flows are affecting the breeding, survival, and behavior of wildlife, with possible implications for wildlife tourism; and, perhaps of most concern to the government, decreased water flows have significant detrimental effects on hydroelectric generation, possibly affecting national development over the long-term.

By 2005/06, the problem had become so acute that the government, through the Vice-President's Office, designed and implemented a strategy to address water use and water management in the Usangu Plains. The strategy called for the immediate resettlement of livestock owners and their families. Because the process lacked community participation and was swiftly implemented, a significant loss of livestock and other properties resulted, along with a disruption in local livelihood activities. Despite large numbers of people and livestock being removed from the Usangu wetlands, dry season water flows in the Great Ruaha have not stabilized.

The case of the Usangu Plains demonstrates the inextricable links between population, health, and environment, and underscores the important role that both policy and community participation play in development planning and implementation.

REFERENCE: Ndalalwa Faustin Madulu et al., "Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment" (2007), available from popref@prb.org.

Box 3

Spotlight on Mining

To ensure the long-term sustainability of mining in Tanzania, the integration of environmental and social concerns into the mineral development program is imperative. In the past, environmental management and the enforcement of the health and safety regulations in mining operations were hindered by lack of coordination, insufficient operational funds, and inadequate expertise. As a result, there has been an increase in the uncontrolled extraction of minerals—including gold, diamonds, base metals, and gemstones—and in the use of unsafe mining methods. This has led to severe environmental damage and to appalling living conditions in mining communities. Mining camps are often plagued by poor sanitation, lack of safe drinking water, high congestion, and poor hygiene. To address these problems, government policy mandates actions to reduce or eliminate the adverse environmental effects of mining; improve health and safety conditions in mining areas; and address the special needs of women, children, and the local community. The Environmental Management Act No. 20 of 2004 provides directives regarding management of mining areas, but the capacity to ensure compliance and implement mandates remains inadequate.

REFERENCE: Ndalahwa Faustin Madulu et al., “Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment” (2007), available from

“The main health objective of the National Environmental Policy is to protect public health ... in the broad sense of promoting human well being and informed participation in primary environmental care. The policy objectives to be pursued are: 1) Provision of community needs for environmental infrastructure, such as safe and efficient water supplies, sewage treatment and waste disposal services; and 2) Promotion of other health-related programmes such as food hygiene, separation of toxic/hazardous wastes and pollution control at the household level.”

Despite these policy statements—made a decade ago—resource degradation and pollution have continued to be major problems, due in part to the failure to implement policy recommendations and mandates. Moreover, the failure to adequately engage communities in the planning and implementation of development schemes has hampered efforts to reverse environmental degradation and improve health status at the local level (see Box 2, page 5).

To overcome these shortcomings, the government has renewed its efforts to strengthen human and institutional capacity for the effective implementation of environmental policies. These efforts include the development of a Capacity Building Program (CBP) to implement the Environmental

Management Act (2004); the development of Environment Mainstreaming Guidelines; and the development and integration of environment-specific indicators into the NSGRP monitoring framework.

Furthermore, the government—with leadership from the Vice President’s Office (VPO)—has taken significant steps to mainstream environment into its poverty reduction process through a new (2007) partnership with the United Nations Environment Programme (UNEP). UNEP’s Poverty and Environment Project will contribute to the VPO’s efforts to mainstream environmental concerns into the National Strategy for Growth and Reduction of Poverty. It will do this 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.²²

Integrating PHE in Tanzania: From Policy Mandate to Community Action

Results from the PHE assessment suggest that while some policies in Tanzania—such as the National Population Policy and the Environmental Policy—recognize the links among population, health, and environment issues, few policies have helped implement practical integrated programs at the village and district levels (see Box 3). National policies are generally not well known or understood at the district and grassroots levels. Poor awareness, in turn, has made it difficult for district-level planners to turn national policies into appropriate interventions in the field. Vision 2025 admits past shortcomings in implementation: “Tanzanians have developed a propensity to prepare and pronounce plans and programmes, and ambitions which are not accompanied by effective implementation, monitoring and evaluation mechanisms. As a result, implementation has been weak.”²³

In an effort to empower local and district governments to turn policy directives into community actions, the government is implementing a decentralization program through its Local Government Reform Program. In effect, decentralization means passing the powers, functions, resources, and responsibilities from central government to local government, and from higher levels of

*Box 4***Lake Tanganyika Catchment, Reforestation, and Education (TACARE) Project, Jane Goodall Institute (JGI)**

Implemented by the Jane Goodall Institute in 1994, the TACARE Project works in 24 villages and serves more than 200,000 people in Kigoma region, which borders the Gombe National Park in western Tanzania. The TACARE program aims to protect globally important biodiversity and promote the sustainable use of natural resources at a landscape scale through a community-centered conservation approach.

To achieve its goal, the TACARE Project has developed a portfolio of activities that address community-identified socioeconomic needs and promote conservation and sustainable natural resource management. These programs are in agriculture and agro-forestry, family planning and reproductive health, water and environmental sanitation, HIV/AIDS, community development (microcredit, fuel-efficient stoves, social infrastructure), and environmental education.

The TACARE Project has helped the communities with which it works to obtain better access to health services, safe water, and education through the construction of dispensaries, spring protection structures, gravity water schemes, classrooms, and ventilated improved pit (VIP) latrines. TACARE also conducts regular conservation outreach activities, providing training, support, and supplies to farmers who adopt more environmentally sustainable agricultural practices such as contour farming, planting native grasses on slopes susceptible to erosion, and planting multipurpose trees.

In addition, JGI supports structured land use planning at the village level in 13 communities whose land overlaps the Greater Gombe Ecosystem. This work relies on existing Tanzanian statutes and government structures to guide planning activities, and has resulted in the adoption of formal Participatory Village Land Use Plans in all 13 villages.

The TACARE Project social infrastructure model requires that local communities establish their own project priorities and that they provide one-fourth of the total cost and much of the labor required to complete each project. The community contribution builds an important sense of ownership within the village which has contributed to project success. However, TACARE depends on heavy investments from donors, making long-term sustainability of the project uncertain.

REFERENCE: Ndalaha Faustin Madulu et al., "Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment" (2007), available from popref@prb.org.

*Box 5***Sustainable Coastal Communities and Ecosystems (SUCCESS-Tanzania) Project, Tanzania Coastal Management Partnership (TCMP)**

The SUCCESS Project (formerly the Population, Equity, AIDS, and Ecosystems Project) was launched in 2004 to promote improved biodiversity conservation through the sustainable use of coastal resources, while also seeking to enhance the quality of life of coastal people in Tanzania. The project works in eight villages (total population 13,000) bordering on or surrounded by the Saadani National Park, about 200 kilometers north of Dar es Salaam on the Indian Ocean. The project conducted a threats assessment in 2004 to determine how HIV/AIDS affects the environment in this location. The assessment concluded that HIV/AIDS-affected households depend more than nonaffected households on wild foods, wildlife, medicinal plants, timber, and fuelwood as sources of food, income, and health services.

Specific interventions began in 2005 to address environmental degradation and ill-health in the coastal communities. Alternative livelihoods such as paprika farming and milkfish culture—which do not further stress the coastal resources or threaten coastal biodiversity—were introduced in six of the eight villages. Other interventions include using fuel-efficient stoves and establishing wood lots so local residents do not have to resort to cutting mangroves or coastal forests for fuelwood. The project also communicates culturally appropriate messages, mainly through community theater performances, to reduce risky sexual behavior and promote environmental stewardship.

By 2006, positive results were evident: More than 400 stoves were being used by village households saving approximately 600 tons of fuelwood annually, and demand for the stoves remains strong. In addition, there is some evidence of behavior change in the communities as a result of the popular theater performances. For example, the common practice of marrying off young girls to older men has become increasingly stigmatized, and parents now often reject short-term marriages between visiting fishermen and local girls. Coastal villagers are also requesting that their leaders provide space for fish markets in the village centers, rather than forcing women to buy fish on the beaches where they are vulnerable to being sexually assaulted or exploited. These are important social changes that SUCCESS and other health and environment programs are building upon as work continues in these villages.

REFERENCE: Ndalaha Faustin Madulu et al., "Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment" (2007), available from popref@prb.org.

Box 6

© 2005 Geoffrey Cowley, Courtesy of Photothure

A young mother in Tanzania tends a potato garden near the shore of Lake Victoria.

Lake Victoria Environmental Management Project (LVEMP)

Lake Victoria is the world's second-largest body of freshwater. The lake and surrounding areas are of enormous economic importance to approximately 30 million people who live along the shores of the three countries it touches: Uganda, Kenya, and Tanzania. Population density in the Lake basin is above the national average in all three countries; the population growth rates in the riparian communities are among the highest in the world. The three Tanzanian regions that border Lake Victoria—Kagera, Mara, and Mwanza—have population growth rates between 3.1 percent and 3.3 percent.

The natural resources of the lake basin are used to obtain food, shelter and energy; to secure residential and industrial water supply and transport needs; to irrigate farmland; and to dispose of human, agricultural and industrial waste. In recent decades, with growing population and development, the multiple activities in the lake basin increasingly conflict with each other, and threaten the long-term health of the lake ecosystem.

Heavy human demands on the lake have caused the lake to undergo substantial changes since the 1970s. These include massive algae blooms, increased frequency of waterborne diseases, water hyacinth infestations, and overfishing and oxygen depletion at lower lake depths, threatening fisheries and biodiversity. The consequences are potentially irreversible environmental damage, hardship to the poor, and serious health concerns.

The Lake Victoria Environmental Management Project (LVEMP) is a comprehensive program aimed at rehabilitation of the lake ecosystems for the benefit of the people in the catchment and the national economies of which they are part. The objectives of the program are to: 1) maximize the sustainable benefits to riparian communities from using resources within the basin to generate food, employment and income, supply safe water, and sustain a disease-free environment; and 2) conserve biodiversity and genetic resources.

The first phase of the project (1997-2005) was implemented with funding from the Global Environment Facility (GEF), the World Bank, the governments of Tanzania, Kenya, and Uganda, and several donors. Phase I focused on fisheries management, water hyacinth control, water quality improvement, land use and wetlands management, and support for institutions for lake-wide research and data collection.

Despite the extremely high population growth in Lake Victoria communities, population issues—including the need for family planning services—were not addressed in the first phase of the project. Health issues were addressed through education campaigns that highlighted the links among water quality, sanitation, and human health; and through the building and staffing of new dispensaries. Current challenges for Phase II, launched in 2005, include scaling up initial pilot activities in health, microenterprise, and education; mainstreaming project activities into the district development planning process to ensure the sustainability of the project interventions; and incorporating family planning and reproductive health interventions into project plans and activities.

REFERENCE: Ndalalwa Faustin Madulu et al., "Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment" (2007), available from popref@prb.org.

local government to the community. This brings responsibility and authority to the level where resources are being used. Tanzania's Vision 2025 reiterates the central government's commitment to decentralization:

"It is emphasized that the Development Vision's implementation be [very] participatory. For it is only through such a participatory process that the Development Vision will acquire a people-centered and people-driven character which is the main foundation for obtaining the people's genuine commitment towards ensuring the realization of their goals."

Tanzania can draw on lessons from a number of integrated community-based projects from around the world where decentralization has been practiced. Results from a 2005 review of integrated programs in the Philippines and Madagascar, for example, offer some evidence of the benefits of a collaborative, holistic approach to development.²⁴

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.²⁵ 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; by galvanizing and maintaining greater community goodwill and trust; and by increasing women's status and self-perception in project areas, especially when PHE programs include microcredit or other livelihood activities.

Even with all the benefits associated with integrated programming, there are many challenges to making these integrated projects work. Funding for integrated programs is limited and insufficient human resources and institutional capacities have constrained PHE initiatives.

Despite these challenges, some successful integrated projects and local initiatives have brought positive change to people and the environment in Tanzania. Three projects highlighted in the Tanzania PHE assessment—Lake Tanganyika Catchment, Reforestation, and Education (TACARE) Project; Sustainable Coastal Communities and



© 2006 Anne Gerrard, Courtesy of Photoshare

Local women in Magu, Tanzania, have empowered themselves through working together.

Ecosystems (SUCCESS) Project; and Lake Victoria Environmental Management Project (LVEMP)—are examples of the different types of integrated programs that are addressing population, health, and environment concerns in a holistic manner (see Boxes 4, 5, and 6, pages 7 and 8).

In 2005, the Strategy to Protect Water Sources and Catchment Areas in Tanzania was implemented through the Vice President's Office. Plastic bags and other types of plastics were banned to protect drinking water sources, keep sewage drains clear, and reduce the amount of garbage in public spaces. Alternative, environmentally friendly packaging materials are being promoted in a country-wide educational campaign.

Next Steps Toward Greater Cross-Sectoral Collaboration

The Tanzania PHE assessment concluded that there are many challenges to achieving effective cross-sectoral collaboration in Tanzania, including the need to review sector policies to accommodate recent policy changes and national obligations such as the NSGRP and the MDGs.

Much more research is needed on population-health-environment interactions on the community and national scale to support the creation of robust, evidence-based policies and approaches. To encourage research on PHE issues in East Africa, the Lake Victoria Research Initiative (VicRes) supports interdisciplinary and multidisciplinary research that would contribute toward poverty reduction and environmental restoration in the Lake Victoria Basin.²⁶ Research projects are meant to enhance knowledge on land-human-environment interactions to justify interventions relevant to poverty reduction, improved health, and environmental restoration, and to contribute to effective decisionmaking.

Researchers must have the skills to effectively communicate their findings to decisionmakers so research results and data are used routinely and appropriately in policymaking. To this end, the Institute of Resource Assessment (IRA) at the University of Dar es Salaam introduced a new master's program in 2005 that includes modules on PHE linkages and policy communications for environmental researchers. The modules were developed in part from training programs conducted by the Population Reference Bureau and IRA from 2001 to 2004, and offer a model for additional capacity-building programs in Tanzania.

At the programmatic level, rigorous project evaluations and operations research are needed to scientifically quantify the benefits—and shortcomings—of integrated programming. These types of data are necessary to inform project design and implementation; gain policy support for cross-sectoral collaboration at the district and village levels; and secure and maintain funding for community-based integrated projects. Documentation and dissemination of lessons learned and best practices for integrated PHE programming will also lay the necessary groundwork for scaling-up PHE efforts in Tanzania.²⁷

To more fully integrate population, health, and environment concerns into national policies and community development programs, several steps are suggested:

- Continue to incorporate Vision 2025 and NSGRP (2005) objectives into national policies, strategies, plans, and programs.
- Maintain an effective policy advocacy campaign to raise awareness and win support of

policymakers at district and national levels for cross-sectoral collaboration.

- Harmonize sector policies to clarify priorities and responsibilities for implementing cross-sectoral initiatives.
- Strengthen institutional capacity—especially at district levels—to implement policy mandates and design integrated programs that have the support of communities and local organizations, and ensure that monitoring and evaluation (M&E) systems are in place to document results.
- Prepare and institute appropriate legislation and fiscal arrangements to facilitate the implementation of policies that call for cross-sectoral collaboration.
- Disseminate best practices, research, data, evaluations, and resources on PHE linkages and integrated approaches to development to nongovernmental organizations and policymakers.
- Work with the media to encourage—and build capacity for—reporting on population-health-environment issues in local and national news outlets.
- Work with universities to design and implement capacity-building programs such as short courses and workshops on PHE linkages and cross-sectoral approaches.
- Create funding mechanisms for interdisciplinary research and rigorous project evaluations.

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 PHE integration in Tanzania. Progress in these areas will lay the foundation for more effective, participatory development efforts that increase human well-being and sustain healthy environments.

References

- ¹ Ndalhwa Faustin Madulu et al., "Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment" (2007), available from prb@prb.org.
- ² Agriculture contributes over 50 percent of Tanzania's GDP, employs over 80 percent of the total labor force, and provides 75 percent of total export value. Government of Tanzania, Vice President's Office, *National Strategy for Growth and Reduction of Poverty* (Dar es Salaam, Tanzania: Gov. of Tanzania, 2005), accessed online at www.tanzania.go.tz, on Oct. 16, 2007.
- ³ Government of Tanzania, Vice President's Office, *National Strategy for Growth and Reduction of Poverty*.
- ⁴ Food and Agriculture Organization (FAO), *AIDS—A Threat to Rural Africa: Fact Sheet*, accessed online at www.fao.org, on Sept. 24, 2007.
- ⁵ The National Strategy for Growth and Reduction of Poverty notes that "after taking account of the population growth rate, per capita economic growth rates are more modest and not yet sufficient to generate significant poverty reduction." Government of Tanzania, Vice President's Office, *National Strategy for Growth and Reduction of Poverty*.
- ⁶ Carl Haub, *2007 World Population Data Sheet* (Washington, DC: Population Reference Bureau, 2007), accessed online at www.prb.org, on Sept. 20, 2007.
- ⁷ Tanzania Population and Housing Censuses, 1978, 1988, 2002. Growth rates refer to 1978 to 1988 and 1988 to 2002.
- ⁸ [Tanzania] Population Planning Commission, Population Planning Unit. Accessed online at www.tanzania.go.tz/ppu/index.html, on Oct. 17, 2007.
- ⁹ The total fertility rate (TFR) estimated in the 1991/92 Tanzania Demographic and Health Survey (TDHS) was 6.3 children per woman. However, the 2004/05 TDHS TFR of 5.7 is statistically the same as the 5.8 estimated by the 1996 TDHS and the 5.6 from the 1999 Tanzania Reproductive and Child Health Survey (TRCHS). There is no evidence of fertility decline over the past decade.
- ¹⁰ The 2004/05 TDHS showed a maternal mortality ratio (MMR) of 578 maternal deaths per 100,000 live births, statistically unchanged from the 1996 TDHS MMR of 529.
- ¹¹ Government of Tanzania, Ministry of Planning, Economy, and Empowerment, *National Population Policy 2006*. accessed online at www.tanzania.go.tz, on Oct. 16, 2007.
- ¹² Government of Tanzania, Ministry of Planning, Economy, and Empowerment, *National Population Policy 2006*.
- ¹³ From the 1999 and 2004/05 TDHSs, infant and under-5 mortality declined as infant deaths fell from 99 to 68 per 1,000 births and child deaths from 147 to 112 per 1,000 live births. National Bureau of Statistics (NBS) [Tanzania] and ORC Macro, *Tanzania Demographic and Health Survey 2004-05* (Dar es Salaam, Tanzania: National Bureau of Statistics and ORC Macro, 2005).
- ¹⁴ Insecticide-treated mosquito nets, or ITNs, are a primary health intervention to reduce malaria transmission in Tanzania. Widespread use of ITNs would likely reduce mosquito density and biting intensities. About 16 percent of children ages 0-5 sleep under an ITN; 31 percent sleep under any net. NBS [Tanzania] and ORC Macro, *Tanzania Demographic and Health Survey 2004-05*.
- ¹⁵ United Nations Development Programme (UNDP), *Tanzania Poverty and Human Development Report 2005*, accessed online at http://hdr.undp.org, on Oct. 16, 2007.
- ¹⁶ Access to an improved water source refers to the percentage of the population with access to drinking water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring, or rainwater collection. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. World Health Organization and United Nations Children's Fund, *Meeting the MDG Drinking Water and Sanitation Target*, accessed online at www.who.int, on Oct. 16, 2007.
- ¹⁷ Government of Tanzania, Ministry of Planning, Economy, and Empowerment, *National Population Policy 2006*.
- ¹⁸ Natural heritage site is a designation of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) for places with outstanding physical, biological, and geological features.
- ¹⁹ The Participatory Poverty Assessments (PPA) is a qualitative assessment conducted to provide insights on people's perceptions of poverty and effects of public policies and institutional changes and governance on their livelihoods. The PPA describes various dimensions of vulnerability and contributes to a better understanding of vulnerable social groups, causes of impoverishment, and protection and risk management. United Republic of Tanzania, *Vulnerability and Resilience to Poverty 2002/03, Tanzania PPA: Main Report* (Dar es Salaam, Tanzania, 2004).
- ²⁰ Over 60 percent of the area covered by forests in 1920 has been deforested and about 0.5 percent of current forest area is being lost annually, according to the Planning Commission's National Population Policy.
- ²¹ Tanzania has specific national policies on forests, minerals, wildlife, fisheries, land use, and water. View all of Tanzania's national policies online at www.tanzania.go.tz.
- ²² United Nations Environment Programme, *Poverty and Environment Project: Tanzania Profile*, accessed online at www.unep.org on Sept. 20, 2007.
- ²³ Government of Tanzania, *Tanzania National Development Vision 2025*, accessed online at www.tanzania.go.tz, on Sept. 27, 2007.
- ²⁴ 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.
- ²⁵ Pielemeier, *Review of Population-Health-Environment Programs Supported by the Packard Foundation and USAID*.
- ²⁶ For more information about the Lake Victoria Research Initiative, go to www.vicres.net.
- ²⁷ The term "scaling up" in this context refers to one or more of the following: implementing PHE projects in new geographic areas or expanding current projects to include entire landscapes or ecosystems; including domains outside population, health, and environment sectors such as education and agriculture; or engaging new audiences and/or reaching more beneficiaries within the same project or geographic area.

PRB's **Population, Health, and Environment Program** works to improve people's lives around the world by helping decisionmakers understand and address the consequences of population and environment interactions for human and environmental well-being. For more information on the PHE program, please write to popref@prb.org.

The Population Reference Bureau informs people around the world about population, health, and the environment, and empowers them to use that information to advance the well-being of current and future generations. For more information, including membership and publications, please contact PRB or visit our website: www.prb.org.

Policy Briefs in PRB's "Making the Link" Series:

Integrating Population, Health, and Environment in Ethiopia (2007)

Integrating Population, Health, and Environment in Kenya (2007)

Integrating Population, Health, and Environment in Tanzania (2007)

Linking Population, Health, and Environment in Fianarantsoa Province, Madagascar (2006)

Breaking New Ground in the Philippines: Opportunities to Improve Human and Environmental Well-Being (2004)

Ripple Effects: Population and Coastal Regions (2003)

Women, Men, and Environmental Change: The Gender Dimensions of Environmental Policies and Programs (2002)

Children's Environmental Health: Risks and Remedies (2002)

Finding the Balance: Population and Water Scarcity in the Middle East and North Africa (2002)

All publications are available on PRB's website: www.prb.org.

Acknowledgments

Melissa Thaxton prepared this policy brief in collaboration with the Tanzania PHE assessment team members Hussein Sosovele, Institute of Resource Assessment (IRA)/University of Dar es Salaam and World Wide Fund for Nature; Grace Lusiola, EngenderHealth; Arnold Mapinduzi, Vice President's Office (VPO)—National Environment Management Council (NEMC); Joseph Kihale, VPO—Division of Environment; and Jamal Baruti, Lake Victoria Environmental Management Project (LVEMP). Thanks also to Roger-Mark De Souza, Sierra Club; and Nina Pruyn, Charles Teller, and Richard Skolnik of PRB for reviewing various drafts of the brief and providing insightful comments and suggestions.

The PHE Assessment team and the author of this brief recognize the valuable contributions of Professor N.F. Madulu through his research and teaching to better understanding PHE linkages. Professor Madulu's untimely passing, just after the first draft of the assessment report was completed, has saddened all who knew him. The assessment report and this policy brief are dedicated to Professor Madulu.

Funding for this policy brief was provided by the U.S. Agency for International Development, under the BRIDGE Project (Cooperative Agreement GPO-A-00-03-00004-00).



POPULATION REFERENCE BUREAU

1875 Connecticut Ave., NW, Suite 520, Washington, DC 20009 USA

Tel.: 202-483-1100 | Fax: 202-328-3937 | E-mail: popref@prb.org | Website: www.prb.org

