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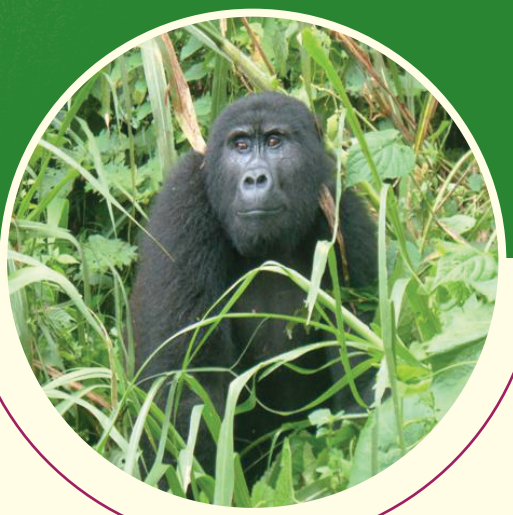

Sharing the Forest: Protecting Gorillas and Helping Families in Uganda

By Gladys Kalema-Zikusoka and Lynne Gaffikin

On the outskirts of remote Bwindi Impenetrable National Park (BINP) in southwestern Uganda, endangered mountain gorillas forage in local gardens that run along the border of the park. Rapid population growth has pushed people to settle near the gorillas' habitat—sometimes leading to conflict. Our innovative community development program, Conservation Through Public Health, seeks to conserve these magnificent animals, and at the same time, improve the quality of life for Ugandans living near Bwindi. Trained community volunteers protect livelihoods dependent on ecotourism by monitoring diseases like tuberculosis (TB) that can pass from humans to gorillas, potentially threatening the rare species' survival. Other volunteers teach couples how to use modern family planning (FP) methods that make it easier for them to provide for their children—and reduce the pressure on the forest and its inhabitants.

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Population and Health in Southwestern Uganda

Uganda's overall population has grown from 6.5 million in 1959 to 28.5 million today; the current annual growth rate is 3.1 percent (UN, 2005; PRB, 2007). Given prevailing trends, the population of Uganda is predicted to almost double to 55 million by 2025. Population density—124 people/sq km in 2002—has increased 400 percent in the last 50 years (UBOS & Macro International Inc., 2007). In rural areas, average total fertility is 7.1 children per woman, and the results of the last two national-level Demographic and Health Surveys indicate that for most age groups fertility rates are stagnating, even in areas where reproductive health programs are in place (UBOS & Macro International Inc., 2007).

Most Ugandans derive their livelihoods primarily from subsistence farming. Land, however, is becoming increasingly scarce, and 56 percent of rural households own farms smaller than one hectare (PRB, 2007; Ellis, 2005). Rural inhabitants depend upon the ever-dwindling natural resource base to meet their basic needs for food, shelter, water, and fuel. While the level of development throughout the country varies, only 67 percent of Ugandans have access to improved water sources and only 11 percent have adequate sanitation, which contributes to high rates of infectious disease and child mortality (UBOS & Macro International Inc., 2007).

Thirty percent of Uganda's population lives near BINP in the southwestern part of the country, which is among the most densely populated rural areas in all of Africa, with 200 people per square kilometer (UBOS, 2002; Gubelman et al., 1995). The area's rapid population growth is caused by high local fertility rates and in-migration (OSA & MUST, 2007; Sylvia Nandago, personal communication, August 2008). The people share the region with one of the most well-known species in Uganda's Albertine Rift, the critically endangered mountain gorilla, which numbers only 760 individuals worldwide, approximately half of which live in BINP. This uneasy combination helps drive local population growth; local women explain their large families by saying that they need half the children to chase gorillas away from their crops while the other half attends school (OSA & MUST, 2007).

Due to its remoteness, among other factors, southwestern Uganda is underserved by social services, including health care (Byrnes, 1990). Consequently, the residents' health is among the poorest in the country (USAID Uganda, 2006). The high levels of poverty in this biodiversity-rich area are associated with low human productivity, poor agricultural yields, and few economic choices. Yet, almost all of Uganda's ecotourism business targets southwestern Uganda, making the area critical for both biodiversity conservation and economic growth.

Shared Land, Shared Health

While working for the Uganda Wildlife Authority (UWA), the official national organization responsible for managing wildlife, I (Gladys) was called upon to control an outbreak of scabies among the BINP mountain gorillas. An infant mountain gorilla died and a number of other gorillas suffered severe hair loss due to the infection. Four years later, another scabies outbreak in a larger group of gorillas at the southern end of BINP led to a two-year postponement of tourist visits to this group, resulting in a substantial loss of income and considerable expenditures on veterinary interven-

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More information on CTPH can be found on its website: **http://www.ctph.org**

Gladys Kalema-Zikusoka was profiled in the June 22, 2008, edition of the Ugandan newspaper *New Vision*: **http://www.newvision.co.ug/D/9/36/634991**

PowerPoint presentations, archived videos, and transcripts from Kalema-Zikusoka's appearances at the Wilson Center are available on the Environmental Change and Security Program's website:

- "Population, Health, and Environment: Lessons from East Africa" (May 8, 2008): **http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topicseventsummary&event_id=404579**
- "Human, Animal, and Ecosystem Health" (May 21, 2008): **http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topicsevent_summary&event_id=405194**

"The Mountain Gorilla and Conservation Medicine," co-authored by Lynne Gaffikin, is available in an online preview of the 2002 Oxford Press book, *Conservation Medicine*: *Ecological Health in Practice:* **http://books.google.com/book?id=r2dsZDsjBrMC**

IUCN has published two articles on protected areas and health by Kalema-Zikusoka:

- "Protected Areas, Human Livelihoods and Healthy Animals: Ideas for Improvements in Conservation and Development Interventions" in *Conservation and Development Interventions at the Wildlife/Livestock Interface: Implications for Wildlife, Livestock and Human Health*: **http://www.wcs-ahead.org/book/chapter16.pdf**
- "Building Support for Protected Areas Using a 'One Health' Perspective" in *Friends for Life: New Partners in Support of Protected Areas*: **http://www.wcs-ahead.org/document/friendsforlife_chapter5.pdf**

A farm and terraced hillside near the boundary of Bwindi Impenetrable National Park. Photo courtesy of Lynne Gaffikin.

tions to contain the outbreak and rid the gorillas of their infections.

Scabies, which is endemic in the local human population, results from poor hygiene, including infrequent washing. DNA studies of the scabies mite from infected humans and gorillas from the same area revealed them to be genetically identical, which strongly suggested that the disease was being transmitted between the two species.

I observed more links between human and great ape health while conducting TB research in high human/wildlife conflict communities surrounding BINP and Queen Elizabeth National Park. I discovered that TB was prevalent among residents living near national parks. TB rates are high throughout Uganda, which has one of the top 22 TB infection rates in the world. The country's high rate of HIV/AIDS, which makes people more susceptible to TB infection, exacerbates the severity of this public health problem; the co-infection rate is greater than 19 percent (USAID, 2006). Discussions with local community leaders helped me realize the gravity of the human TB epidemic—which was driven home when two members of the BINP community died of the disease.

The close genetic relationship between mountain gorillas and humans—suggesting the strong potential for zoonotic disease transmission between the two species—underscores the importance of controlling human TB in communities surrounding mountain gorilla habitat to protect the health of the remaining gorillas. Similarly, studies have demonstrated the importance of testing and treating people for bovine TB as part of a country's overall TB control strategy (Cosivi et al., 1998).

Establishing Conservation Through Public Health

These events—and the emergence of the field of "conservation medicine," which studies the relationships between human and animal health and environmental conditions—convinced me to establish Conservation Through Public Health (CTPH), a local Ugandan NGO. Following an assessment of community needs, opportunities, and the core competencies of its founding staff, CTPH initiated a program around BINP that focuses on the risk of disease transmission between humans and mountain gorillas. I adopted a population-health-environment (PHE) approach for the program that recognizes the complex links between people, their health, and their environment, and targets the most underserved and marginalized communities.

The program's human public health component uses grassroots campaigns to educate communities about zoonotic diseases like scabies and TB and their links to livelihoods and ecotourism. Community drama groups supported by CTPH act out these links through entertaining and educational stories, reaching more than 7,000 people through their performances. CTPH also seeks to reduce human TB around BINP through a community-based direct observation of treatment (CBDOTS) initiative, which is part of a comprehensive effort funded by USAID and the Ugandan government to improve economic opportunities for the rural poor while also conserving biodiversity. Through its wildlife-health monitoring efforts, CTPH trains UWA rangers and community volunteers to collect fecal samples from gorillas and livestock, which are then analyzed for pathogens at a field clinic. CTPH is supporting similar interventions with savannah species in Queen Elizabeth National Park, also in southwestern Uganda.

Family Planning: The Third Pillar

CTPH introduced FP into its integrated program in 2006, after efforts to control TB in the communities surrounding BINP revealed extremely high fertility rates, high maternal and child morbidity and mortality, and dwindling availability of arable land. CTPH understood that adding FP—a component of the Ministry of Health's minimum health care package, but not readily available—would improve primary health care for the local women and children, as well as reduce pressures on the park and surrounding land.

CTPH trains volunteers to be couple peer educators (CPEs) and community reproductive health workers (CRHWs), who educate community members about the benefits and availability of FP services, as well as the links among FP use, household size, health, and livelihoods—including gorilla ecotourism. Community volunteers work closely with two referral clinics where community members can also obtain contraceptives

and follow-up care. John Snow Inc. (JSI), a PHE partner, provides technical support and advice on monitoring and evaluating the program's efforts. When visiting households in remote communities, community FP volunteers identify suspected TB cases, deliver TB treatment for confirmed cases, and distribute contraceptive supplies.

In the first year of the PHE initiative, CPEs and CRHWs referred 480 people for TB testing. Home visits by these community volunteers—totaling 1,800 in one year—have led to more than 150 new people using FP methods in two parishes with a lower-than-average literacy rate and higher-than-average number of children per family. The home-visit model has real potential to impact development in the most marginalized communities immediately surrounding the park, as more than a third of the home visits are targeted to these isolated families, which are also the most likely to encounter gorillas in their gardens.

CTPH has also successfully counteracted myths and misconceptions about FP. For example, some women have expressed fear that DepoProvera use will lead to "rotting" of the uterus due to retained blood, and that fetuses will not thrive in utero after a woman has used FP because contraception expands the uterus excessively (OSA, 2006). To correct such misinformation, CTPH volunteers visit households, speak to groups, provide one-on-one (or couple) counseling, and support listener radio shows and community theater dramas.

As in many areas of the developing world, the preferred contraceptive method among women in the project's focal communities is DepoProvera. Currently, women can access it at the private, faith-based referral health clinic and the public referral clinic in the area. Its uptake is limited, however, by the long distances that women have to travel for the injections every three months. If trained community volunteers could inject women in the comfort of their own homes, this convenience would improve continuation rates and increase the number of new users.

To this end, CTPH is building on the momentum of a Save the Children/Family Health International project in central Uganda that is piloting community-based provision of DepoProvera. Twelve of CTPH's community volunteers were trained in May 2008, and shortly thereafter, they began to offer DepoProvera as part of their package of services. Local Ministry of Health officials are very supportive of this expansion, as are the leaders of the partner referral health clinics.

Challenges and Obstacles

CTPH has faced obstacles common to many PHE programs. For instance, it has been difficult to coordinate the different funding sources of the program's components. Also, local public officials and community members are eager for CTPH to increase both the breadth of its services and its geographic coverage, but CTPH lacks the additional funding necessary to expand.

CTPH has also encountered challenges specific to its FP component. Encouraging individuals to adopt modern FP methods requires modifying cultural norms, which can be a lengthy process, especially in remote areas. Even those people interested in FP can encounter difficulty traveling to clinics, apprehension regarding Western medical institutions, cultural or religious opposition to FP, or unreliable service or unavailable supplies. CTPH has found few NGO partners in the area; the public sector does what it can to support reproductive health and FP services but, as with the overall PHE program, funds and other resources are sorely lacking.

Recommendations

Based on CTPH's experience, we offer the following recommendations and next steps for the program and the region:

- Evaluate the program to identify its strengths and weaknesses;
- Improve the reliability of distributing contraceptives from district depots to participating health clinics and communities;
- Identify reliable sources of funding to support expanding the quality, quantity, and types of interventions in current and new parishes around BINP;
- Facilitate the establishment of income-generating activities among community FP volunteer groups in the two parishes, to reduce volunteer dropout;

- Train local health facility providers to insert birth control implants (in which some women have expressed interest) to expand method choice;
- Share lessons learned about PHE programs with other organizations in Uganda planning to adopt the approach;
- Collaborate with other members of Uganda's PHE Working Group to support the expansion of PHE programs throughout Uganda; and
- Lend support to any transboundary initiatives and advocate for a common PHE program for all communities living around gorilla protected areas in Uganda, the Democratic Republic of the Congo, and Rwanda.

CTPH was founded to meet the health needs of the wildlife within and the human communities surrounding Uganda's national parks. While members of these communities have the potential to serve as model stewards of the country's natural resource wealth—including the rare mountain gorillas—and improve their livelihoods through ecotourism, many instead struggle to eke out a living, suffering from limited economic opportunities, high disease rates, poor nutrition, compromised immune systems, and crowded households. Yet with continuing commitment from our community volunteers, staff members, partner organizations, and donors, we hope to be able to improve the lives of both people and wildlife in Uganda.

References

Byrnes, Rita M. (Ed.). (1990). *Uganda: A country study*. Washington, DC: GPO for the Library of Congress. Available online at http://coutrystudies.us/uganda/20.htm

Cosivi, Ottorino, John M. Grange, C.J. Daborn, Mario C. Raviglione, T. Fujikura, D. Cousins, et al. (1998). "Zoonotic tuberculosis due to*My cobacterium bovis* in developing countries." *Emerging Infectious Diseases 4*(1), pp. 59-70.

Ellis, Frank. (2005). *Small farms, livelihood diversification, and rural-urban transitions: Strategic issues in Sub-Saharan Africa*. Presented at "The Future of Small Farms" seminar, Wye, United Kingdom. Available online at http://www.ifpri.org/event/seminars/2005/SmallFarms/sfproc/SO4_Ellis.pdf

Gubelman, E., J. Schoorl, & I. Achoka. (1995). *Bwindi Impenetrable National Park–Management plan 1995-1999.* Kampala, Uganda: Uganda Wildlife Authority.

Opinion Scan Associates (OSA). (2006) *Independent baseline KAPS survey report on communities in Bujengwe and Mukono Parish, August 2006*. Unpublished report to Conservation Through Public Health.

OSA & Mbarara University of Science and Technology (MUST). (2007, February 7). *Needs assessment for family planning around Bwindi Impenetrable National Park.* Presentation at CTPH PHE Planning Workshop, Savannah Hotel, Kanungu District, Uganda.

Population Reference Bureau (PRB). (2007). *2007 World population data sheet*. Washington, DC: Population Reference Bureau. Available online at http://www.prb.orgDatafinder/Geography Summaryaspx?region=49&region_type=2

Uganda Bureau of Statistics (UBOS) (2002). *Population census report.* Kampala, Uganda: UBOS.

UBOS & Macro International Inc. (2007). *Uganda demographic and health survey 2006.* Calverton, MD: UBOS & Macro International Inc.

United Nations. (2005). *United Nations development assistance framework: Uganda, 2006-2010.* Kampala, Uganda: United Nations. Available online at http://www.unicef.org/about/execboard/files/Uganda_UNDAF.pdf

USAID. (2006, October). *Infectious diseases: Uganda.* Available online at http://www.asaid.gov/ourwork/global_health/id/tuberculosis/countries/afric/uganda_profile.html

USAID Uganda. (2006, July). *Uganda biodiversity and tropical forest assessment*. Available online at http://epiq2admin.web.aplus.net/pubs?uganda_biodiversity_final.pdf

About the Authors

Gladys Kalema-Zikusoka founded Conservation Through Public Health (CTPH) in 2003 to promote conservation and public health by improving primary health care to people and animals in and around protected areas in Africa. She trained at the University of London's Royal Veterinary College and was the first veterinarian for the Uganda Wildlife Authority, the official organization responsible for managing the nation's wildlife. Kalema-Zikusoka completed a zoological medicine residency and master's program in specialized veterinary medicine at North Carolina State University and Zoological Park in 2003. She was selected to be an Ashoka Fellow in 2006.

Lynne Gaffikin founded Evaluation and Research Technologies for Health (EARTH) in 1996 to promote ecosystem health and to provide technical assistance to initiatives linking human and wildlife health, particularly around biodiversity-rich areas. Gaffikin received her doctorate in epidemiology and community health in 1988 and is an expert on research and evaluation, women's reproductive health, and integrated population, health, and environment programs. Her assistance to CTPH in Uganda is supported by John Snow Inc. as part of their work to strengthen FP globally, including in remote, marginalized communities near wildlife protected areas. She has co-authored two book chapters on mountain gorillas and conservation medicine.

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