Some chimps, like this one in Uganda's Budongo-Bugoma Forest Corridor, are habituated to humans. Photo credit: Peter Appell/Jane Goodall Institute

A Win-Win Approach to Biodiversity

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Uganda's Budongo-Bugoma Forest Corridor, situated in the north of the Albertine Rift, is considered to be one the most biodiverse regions of Africa, well known for its chimpanzee population. However, this biodiversity hotspot is under pressure from high population growth, deforestation, and seasonal water supply extremes — and the flash point is often access to water. Elsewhere on the continent in South Africa's dry Eastern Cape Province, the country's last free-flowing river, the Mzimvubu, is experiencing environmental stresses of its own. Surrounding grasslands are overgrazed, free-roaming livestock pollute the river, invasive tree species proliferate the landscape, and the majestic mountain terrain is severely eroded. In spite of this degradation, the river serves as the vital water source for more than one million people (and growing), many of whom are struggling to make a living off the land.

The pressures on these two ecosystems and the humans and wildlife that depend upon them are immense. How does one promote conservation and environmental

preservation in communities lacking in such basic human needs as regular water supply and sanitation? The answer may lie in the intersection of freshwater resource management and water, sanitation, and hygiene (FW-WASH).

Identifying New Solutions to Conservation Challenges

In 2011, USAID began funding a unique partnership of seven U.S.–based international conservation NGOs — the Africa Biodiversity Collaborative Group (ABCG) — to strengthen collaboration to address complex conservation challenges in sub-Saharan Africa and identify solutions. The consortium currently tackles five issue areas, one of which is the link between global health and biodiversity conservation, which includes an exploration of FW-WASH.

In 2016, two ABCG member organizations began implementing two pilot activities in Uganda and South Africa to introduce communities to improved FW-WASH practices. These activities grew out of the FW-WASH integration guidelines and monitoring and evaluation framework designed during the first few years of USAID support. The goal: to provide a model of this integrated approach to other water-stressed communities on the continent.

Uganda: Conservation Supports Human Needs

Forest corridors that provide critical chimpanzee habitat outside of protected park areas are rapidly disappearing. The loss of forest is increasing human and chimpanzee interaction as both of these populations vie for diminishing and increasingly degraded water sources. It's a dangerous mix. Not only have physical confrontations occurred, but the interaction of humans, chimps, and livestock pathogens — through fecal matter and polluted water sources — increases the chances of cross-species disease transmission.

ABCG implementer, the Jane Goodall Institute, has worked in Hoima and Masindi Districts of Uganda for two decades protecting its primates. The communities in these same areas also have low potable water coverage, inadequate sanitation, and minimal handwashing facilities. Women and children spend an average 1.5 hours daily collecting water. Poor sanitation has left children suffering with skin conditions and waterways vulnerable to fecal contamination. ABCG's pilot program provided the institute with an opportunity to explore win-win interventions for humans and wildlife. "Because of the interaction of humans and chimpanzees in this landscape, a healthy human population would mean a healthy chimpanzee population and vice versa. We felt the sanitation and hygiene angle is absolutely critical," explains Dr. Peter Apell, the Jane Goodall Institute's Uganda programs director.

The interventions target 10 villages and range from restoring and supplying new water sources to engaging the community at the school level to improve sanitation and hygiene practices. At every step of the process ABCG engaged the Masindi District government as well as local officials and institutions.

Work in the villages and schools began with the renovation of protected springs and the construction of community rainwater harvesting tanks at five primary schools. Along with the installation of improved potable water sources, ABCG established nine water management user committees for each new water point, trained com-

munity-based artisans in each village to conduct repairs (and provided them with the necessary tools to do so), and conducted water quality assessments to inform the community and local governments.

"We try to integrate any new messaging, be it conservation or WASH, into daily lessons using a simple approach — work with teachers, identify key messages, and integrate these aspects into the lesson plans," says Dr. Apell. "This is making a huge difference." Making these lessons actionable outside the classroom into the broader community is the goal.

Every school in the 10 target communities is working to become WASH-friendly — clean, safe school grounds with well-maintained toilets for boys, girls, and teachers; a place to wash hands with soap; and enough safely stored drinking water for the school community. ABCG established WASH clubs in the schools that are in charge of cleaning and maintaining WASH facilities while raising awareness about hygiene in the broader community, and these messages appear to be spreading.

"Communities always look for incentives on the human side that motivate them to take action for conservation," explains Dr. Apell. "In the eyes of many poor rural households, conservation benefits are not readily apparent. So we balance conservation and human needs. A better conserved environment has long-term benefits for WASH."

New water points, or places where water can be fetched closer to the village, are immediate ways that the communities are already seeing tangible benefits. Women and girls save hours out of their day that would otherwise be spent collecting water. Meanwhile, planting tree seedlings and grasses to protect newly renovated water sources and restore the existing watershed will yield longer term benefits, and in time will provide shade to reduce water evaporation in the dry season.
In the remaining few months of the pilot, the focus remains on building the capacity of the local government to push through bylaws to protect the FW-WASH gains and take ownership.

South Africa: Working Holistically to Support Water Security

The Mzimvubu catchment in South Africa is home to 2,000 distinct plant and animal species. Forty percent of the surrounding rural communities lack access to improved sanitation and 20 percent are without potable water. With ABCG support, Conservation South Africa (CSA, the local branch of Conservation International) launched the "One Health" project to improve ecosystem health and human health in this critical landscape. The organization works hand in hand with the Alfred Nzo District Municipality (ANDM) and other local institutions to pilot the integration of WASH with livestock management and conservation programs.

The name of the pilot, One Health, says it all. As in Uganda, the goal is to improve the health of people, animals, and ecosystems. "People need to understand the connection between freshwater conservation and water access, sanitation, and hygiene activities," says Nolubabalo Kwayimani, CSA WASH and One Health program manager. "The more we degrade our land, the less the water will flow and that means no water access."

Trained community volunteers took on the first phase of pilot work to protect the river and improve water quality in four ANDM sites. Armed with fencing material, water testing equipment, seedlings, and pangas (machetes), this brigade tackled the difficult manual labor of water resource protection — literally hauling stones up mountains to protect perennial springs, clearing alien invasive and water-depleting plants (black and silver wattle trees), regrowing vegetation around springs, and putting up fencing to protect water sources from free-ranging livestock.

Water quality monitors help perform biodiversity analysis to see what improvements in stream quality are taking place. "It anchors representatives of the community to what ABCG is doing — promoting citizen scientists and building their capacity," explains Colleen Sorto, task lead for ABCG's integrated freshwater conservation and WASH task group. This process "also engages people and allows them the space to own and be proud of the changes they're making," she adds.

The second phase of One Health revolves around sustainable WASH improvements, and includes passing along key messages about sanitation, hygiene, and trash disposal to keep the newly restored water sources safe and clean. ABCG works in partnership with the ANDM to conduct house-to-house visits to pass along WASH messages that help residents make the connections between human and environmental health.

A new focus will be peer-to-peer training of the CSA-trained eco-rangers, who spend their time on horseback in the bush conserving grasslands, protecting livestock, and carefully monitoring grazing patterns. In addition to encouraging positive grazing practices among herders, they are being asked to promote and adopt key WASH behaviors, such as safe feces disposal and handwashing, even when spending a few days with the livestock in remote parts of the mountain range. The same messages are also being conveyed to the herders' home villages.

Encouraging information exchange and idea sharing is a key component of ABCG's work. To facilitate this, ABCG supports a vibrant FW-WASH community of practice based in Nairobi that sponsors events and webinars to share practical, on-the-job experiences, tools, and findings based on what ABCG is learning from its African partners and the broader conservation and development community. A full report on the lessons of FW-WASH integration will be forthcoming once the pilot projects conclude this September.

By linking FW and WASH, USAID aims to reduce watershed degradation and pollution and improve the health of the water sources and the populations who depend upon them. Protecting and restoring freshwater ecosystems that serve as drinking water sources for the poor and underserved are considered important measures to reduce water insecurity, an increasing concern in Africa and a key goal of the U.S. Government Global Water Strategy.

Now two years into their implementation, what have the pilot activities taught conservationists about FW-WASH? According to Ms. Sorto, "We've identified a model that can be replicated in other areas — where livestock is very important, where there's pressures from climate. We've seen there's something to the approach based

on how people are being engaged. Water monitors continue to monitor sources after ABCG has moved along."

Dr. Apell agrees that the FW-WASH approach is delivering impressive results so far. "This has been the most successful model that we have used — an integrated approach — that brings WASH into play and links it directly with conservation," he says. "This model has quick wins to get buy-in at the household level, mid-term wins that ensure the community doesn't lose hope, and long-term wins, such as improving wildlife corridors, water quality, [and] soil productivity."

"The community can see progress at every stage," he adds. "And they walk along with you."

By Wendy Putnam

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Additional Resources:

- Africa Biodiversity Collaborative Group (ABCG)
- U.S. Government Global Water Strategy

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