

Protecting Wildlife and Human Wellbeing (*Kenya*)

Issue: Humans and Animals Competing for Land

The Laikipia District of north central Kenya is a popular tourist destination, teeming with wildlife. Covering 9,700 square kilometers, Laikipia comprises a patchwork of small farms, large ranches, privately owned conservancies, and government land. Some 5,000 elephants, the second-largest elephant population in the country, inhabit the region. As farmers, ranchers, and these animals struggle to co-exist, the region has gained a reputation for being one of the worst areas for human–elephant conflict, with more than 3,000 incidents occurring annually.

Human-wildlife conflict is a growing phenomenon around the world as human populations place mounting pressure on ecosystems, wildlife habitat is reduced, and animal migration routes are made inaccessible. As a result, humans are susceptible to injury, and even death, and animals suffer attacks by humans. In Laikipia alone, an average of five people and ten elephants are killed each year as a result of human–elephant conflict.²¹

“The tension [in Laikipia] stems from communities having their crops damaged by elephants,” explains Dr. Max Graham, Associate at the Department of Geography, University of Cambridge (United Kingdom), who has been studying and working in Laikipia for almost a decade. “There’s a perception that the elephants belong to the government and ranchers, both of whom benefit from tourism. Meanwhile, communities suffer. Farmers get killed. Elephants get speared or poisoned.”

²¹ *Conservation Kenya: Final Report* (GSM Association & Safaricom Ltd., 2007).

Response: Push-to-Talk Technology Program Launched in Laikipia

Believing that mobile technology could offer a solution, the GSMA Development Fund, together with Safaricom Ltd., Wireless Zeta Telecomunicaciones (Wireless ZT), Nokia, the Nokia Siemens Networks, and local conservation organizations, collaborated in launching a pilot project in Laikipia. Using GSM technology, the project sought to facilitate cost-effective communication among local communities, government wildlife service personnel, and private landowners through an early warning system that would allow farmers to preserve their crops while protecting wildlife.

The pilot utilized ‘Push to Talk on Cellular (Phones)’ (PoC) technology, which combines the functionality of a walkie-talkie or two-way radio with a mobile phone. PoC enables communication between two individuals, or a group of people, and is particularly useful in connecting a user group intermittently over a period of time (e.g., a working day).



Credit: GSMA

CASE STUDY 11 CONTINUED

A benefit of PoC is that it can be used alongside voice and data services on a single handset. Users can make standard phone calls and send text messages, while also accessing two-way communication and group talk through the press of a button. Because network resources are used only for the duration of each talk ‘spurt,’ PoC technology requires less airtime, demands less energy, and is less costly than a conventional phone call.

Equally important was finding a solution that would be sustainable and scalable over the long term. To address this need, the pilot was designed to test the commercial viability of the proposed solution. If the product could be successfully sold—at a discounted rate to nonprofits—it would stand a far better chance of making it in the marketplace.

“The goal was to develop a sustainable project that an operator could use

commercially as an incentive to keep it running in the field,” explains Christina Greenwood, Project Manager, GSMA Development Fund, who worked on developing the pilot. “At the same time, we were looking to offer the service at a



Credit: GSMA

Planning the Push-to-Talk Pilot

The PoC pilot was carried out at three sites in Laikipia from 3 November to 3 December 2007. Prior to launching the service, community members filled out a simple questionnaire aimed at identifying existing warning systems and challenges. The questionnaire pointed to a prevailing atmosphere of mistrust, with ranch owners and government rangers perceived as not doing their part to alert local community members of elephant dangers.

Key indicators for measuring the project’s effectiveness were also identified. These included reducing the number of elephant crop-raiding incidents, improving crop harvests, reducing the number of human injuries and deaths, and reducing injuries to elephants.

Fifty people, including community-elected scouts, government rangers, and private landowners, received training in how to use the handsets, how to make group and one-to-one PoC calls, and the protocol for communication between users (e.g., “copy that” to mean you have received a message, or “over” to indicate that a user has finished speaking).

Once trained, individuals patrolling the fences surrounding farms and ranches were charged with calling other group members to warn of elephants coming in close proximity to private landholdings. The trial was carried out across three different human–elephant conflict sites. Over the course of the 30-day trial, 84 incidents were reported.

subsidized rate, or with lower tariffs, to nonprofits to make sure they could access it.”

Outcome: Successfully managed human–elephant conflict

Based on data collected and exit surveys, the pilot was found to reduce the number and severity of human–elephant conflicts in the four areas covered. Said Dickson Kamau, Chairman of the Rumuruti Forest Association: “Push-to-talk has helped us a lot. Before they [the game rangers] would never come to scare the elephants back [to the forest] but with this they could not make excuses because there were many of us listening.”



Credit: GSMA

One hundred percent of PoC users engaged in the trial found the service to be helpful in managing human–elephant conflict, with 72 percent of users reporting that PoC helped provide an early warning system to reduce crop raiding, and 41 percent claiming that PoC was most useful in improving communication among all stakeholders.

A significant result of the pilot was reduced tension and improved trust among farmers and community members, the Kenyan Wildlife Service (KWS), private landowners, and local law enforcement officials. The PoC trial enhanced communication among these stakeholders and, in particular, helped community members recognize that conservationists were there to help them.

In Mwenji, for example, the trial focused on the monitoring of an electrified fence. When elephants tried to break the fence, security guards hired to patrol the perimeters of private ranches were able to report the incidents to community members and conservancy rangers who could take action. “It forced the guys who were meant to act to act,” says Graham. “Because there were ten people listening it created collective pressure and improved accountability.”

In Rumuruti, the trial had an unexpected effect. Local scouts assigned by a community association to patrol the area used the phones to alert KWS officials of the location of elephants to reduce incidents of human–elephant conflict. With the phones, they were also able to report illegal logging and animal theft in the area. The trial “helped with policing elephants and the forest,” says Graham. “It was the first time we were able to empower the community to play such a role.”

In Ex-erok, the phones were used by security patrols to alert KWS officials to both elephant incursions and animal stock theft. Graham cites three occasions when farm animals such as goats were recovered as a result of easy and fast communication.

Challenges and Lessons Learned

The primary challenge this project faced was securing the right partners to address the diverse needs of the stakeholder groups. Preparations for the program required coordination among a broad range of stakeholders—from telecommunications and technology groups to local nature conservancies. Only a multi-sector partnership could adequately cover all aspects of project work, from assessing the needs of Laikipia communities to the project’s commercial feasibility.

CASE STUDY 11 CONTINUED

The project would only work if local communities adopted the technology solution. Here, non-governmental organization partners such as the University of Cambridge Laikipia Elephant Project and Laikipia Wildlife Forum were essential. These groups developed trusted relationships with the community that engendered good will for the project. They also could identify community users, and assist with the training, monitoring, and assessment.

While the results were positive overall, an important lesson emerging from the trial was the cost and time needed to keep the phones charged. Because they were used more often than traditional handsets, the phones needed to be charged more frequently. This required that users visit charging stations several kilometers away, and incur additional costs. To address this issue, project partners are exploring the inclusion of a solar or wind-up charger in future applications of PoC technology for conservation uses.

Another lesson involved the time needed to train local citizens to use the product. Given that most trial participants were accustomed to more rudimentary phones, each needed to learn to operate the more sophisticated handsets donated for the trial.

Next Steps: Further Exploring PoC Strategies for Environmental Conservation

A decision is still pending with respect to future expansion and/or replication of the PoC trial in Kenya. What is clear is that mobile technology holds considerable potential for strengthening wildlife conservation efforts in such areas as monitoring animals, reducing conflict among humans and wildlife, enhancing stakeholder communication, and increasing public awareness of endangered species. In much the same vein as the PoC trial, a text



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message-based ‘early warning’ system has been established in South Africa, enabling Kruger National Park authorities to contact local communities outside of the park’s borders in an effort to reduce human–elephant conflict there.

Mobile technology is also being employed to raise awareness of endangered species. In 2003 and 2004, Fauna Flora International (FFI), a UK-based global conservation charity, launched Wildlive! with support from Vodafone UK and The Vodafone Group Foundation. Through the initiative, subscribers were able to track the progress of FFI conservation projects, access conservation news, and enter competitions. Customers paid a fee to download animal screensavers and animal sounds as ringtones, with 100 percent of profits going to FFI. The initiative was timed to coincide with FFI’s 50th anniversary celebration and in 2004 raised £100,000 to support FFI’s mission. Similar mobile fundraising efforts aimed at protecting endangered animals have been launched in other parts of the world. ■