

Resource Management Goes Wireless in Mozambique



Wireless radio phones are providing an important communications link for forest wardens and wildlife scouts in Mozambique. (Photo courtesy of IUCN)

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Kevin Conway and Marielle Rowan

Being a forest warden or wildlife scout in Mozambique can be a lonely — and sometimes dangerous — occupation. Last year, for instance, a scout working in a new nature reserve in Mozambique's northern Niassa province was struck by a poacher's bullet. Fortunately, he was carrying a wireless, high frequency radio telephone with which he was able to contact his base station. Too far away to help their injured colleague, base station operators in turn contacted a tourist outfitter who arranged to have a small aeroplane airlift the scout to medical help.

Although the Niassa incident is the exception rather than the rule, it underscores the challenges in managing Mozambique's natural resources. To help field personnel and their departmental managers meet the challenge, the International Development Research Centre's (IDRC) [Acacia](#) program initiative, together with Mozambique's Ministry of Agriculture and Rural Development and the [World Conservation Union \(IUCN\)](#), launched a pilot project to see how information and communication technologies (ICTs) can promote conservation and sound resource management. [See related sidebar: [Enlisting Radios Against Deforestation](#)] Radio phones, like the one used by the Niassa scout, were tested in three rugged, sparsely populated areas of the country's interior: the northern Niassa Forest Reserve, the Chimanimani Forest Reserve in Manica province, and the *Tchuma Tchato* conservation project in the province of Tete.

Radios reduce isolation

Designers of the radio communication system had hoped to exploit the technology's advanced functions to transmit data from the field to provincial and national agencies charged with setting quotas for forest and wildlife harvests. However, IUCN's monitoring of radio use points to an impact that is more social and local than technical and central. Wardens and scouts use the radios more often to communicate locally among themselves and less frequently to pass data along to their national offices.

According to Cremildo Rungo, Head of the Provincial Forestry and Wildlife Services in Chimoio, the capital of Manica province, “the radios are part of my team's daily habits. Every morning the wardens are called to make sure that they are safe and activities are in order.”

Abel Otacala, former IUCN Program Officer in Mozambique's capital, Maputo, believes the way the wardens use the radio phones depends on how comfortable they are with the new technology. He describes how, after his initial training sessions, he would “tune in” and get no response from the wardens or scouts. Later, he would be told that the battery had not been charged on the solar panel or be offered some other excuse.

In truth, Otacala believes the wardens often pushed the wrong buttons out of uncertainty. Radio use began to increase as he made more monitoring visits and organized more training sessions.

Community buy-in is key

The 20 high frequency radio phones — some mounted on vehicles, some located in offices, and some hand-held units — may help wardens and scouts enforce existing regulations. But the active involvement of the local people is critical to government plans for sustainable resource use. This is the clear lesson from the *Tchuma Tchato* conservation project in Tete. Established in the early 1990s with support from the Ford Foundation and IDRC, it is the oldest of the three test sites.

Tchuma Tchato means “our wealth” in the local *chiKunda* language and it is an apt description of the rich plant and wildlife populations that have supported local people for generations. From its inception, the project was a partnership between local communities and government forestry and wildlife authorities to protect, manage, and use the local wildlife and woodland resources. Villagers were trained as scouts to promote sustainable and profitable resource use. Local communities were paid to protect animals from poachers — they receive a third of the cost of each sport hunting licence issued by wildlife authorities to “safari” companies.

The radio phones are the latest tool in the communities’ resource management toolbox. Earlier email connections had linked provincial forestry and wildlife staff to their colleagues in headquarters and with supporters internationally. The radio phones improve communication at the community level where the scouts have the pulse of what is happening to the lions, zebras, and impalas.

Replicating success in Niassa

Forestry and wildlife officials wanted to replicate this success in Niassa. Here, 10 000 people live in area about 48 million km². In such a sparsely populated area, community support for wildlife monitoring is critical. But communities did not usually report resource management problems because they had little faith that wardens and scouts would help to resolve them.

As the locally-hired wardens and scouts gained familiarity with the new radio system, they told their nearby relatives and friends how the equipment could help them. The sight of the four-wheel drive vehicles with their big antennae became more common and the radios assumed a more important role in the community's well-being.

Otacala recounts a telling example, a true story about a scout who was told by a villager that a lion was stalking the community’s cows. “The scout was able to bring other wildlife staff to help remove the lion,” he says. “Now the community is confident that it is worth telling the scouts instead of killing the animal. If we say we have radios but then aren't able to respond when a community tells us something, we aren't making the difference we want to.”

Otacala foresees a future when a warden might call ahead to a colleague at a backpackers' camp to say that a guide is needed for employment. This type of service could help local people in Chimanimani and Niassa benefit from the ecotourism potential of their reserves' untouched beauty. He hopes the lessons learned will expand the communication system into a national program and make the broader use of this technology a reality.

Kevin Conway is a senior writer in IDRC's Communications Division.

Marielle Rowan is a liaison officer for IDRC in Maputo, Mozambique.

For more information:

The World Conservation Union (IUCN), Rua Fernão Melo e Castro 23, PO Box 4770, Sommershield, Maputo, Mozambique; Phone: 258-14-99547; Fax: 258-14-90812; Email: iucn.moz@tvcabo.co.mz

Cremildo Rungo, Provincial Department of Agriculture and Rural Development, Chimoio, Mozambique; Phone: 258-51-22075; Email: crungo@dpadrmanica.org

Sidebar

Enlisting Radios Against Deforestation

Charcoal-making is a thriving industry in Mozambique as the metre-high bags stacked along roadsides and sold in markets across the country attest. In cities such as Chimoio, the capital of Manica province, charcoal is the fuel of choice for many of the 75 000 citizens and small businesses. Bakers and other local manufacturers prefer charcoal because it is cheap, accessible, easy to transport, and longer-burning than wood. But the growing demand for charcoal is placing increasing pressure on Mozambique's forests. In the Chimanimani Forest Reserve, it is fuelling illegal logging.

Local and provincial governments license transport operators, loggers, and charcoal vendors. Regulations to control forest harvests dictate how many trees can be cut, their minimum diameter, and when reforestation must take place. Those found breaking the rules are usually fined.

Two years ago, forest wardens in Chimanimani started using wireless radios to inform colleagues at check points of how many logs or bundles of charcoal each operator had permission to take. Cremildo Rungo, Head of the Provincial Forestry and Wildlife Services in Chimoio, says provincial authorities collected almost twice as much in fines from logging operators in 2002 than they had the previous year. He attributes this to the use of the radios.

Other evidence suggests that regulatory mechanisms are working. A year ago, half the charcoal vendors in the markets in Chimoio did not have licences. Now almost all of them do.