Internet and radio develop rural businesses in Zambia

With little access to formal extension services, a rural Zambian community set up an internet connection to develop local agriculture, education and energy facilities. The community is now using local radio to encourage other villages to do the same. A report from Gertjan van Stam

There have been very few studies into the effects access to broadband internet can have on agriculture in rural Africa. The reason for that is simple: broadband internet is still very rare in rural Africa. But in Zambia, a rural community, called Macha, does have broadband. There, internet and agriculture – and much more – combine as part of an integrated project to inspire the local community to reach its collective potential.

Macha, in southern Zambia, is 70 km from the nearest town, Choma, and 380 km by road from the capital city, Lusaka. The village is set in open savannah woodland around 1100 meters above sea level, and receives seasonal rainfall. Traditional villagers live in small, scattered homesteads. There are no commercial farmers or industries in the area.

Traditionally, people have earned their living here through subsistence farming, mostly growing maize. Although agriculture always sustained the community, cultivation practices had not changed in many years. NGOs and international consultants came and went. And Macha remained a typical rural area with bad roads, scattered water pumps, limited electricity, patchy mobile phone coverage, dilapidated schools and health facilities.

In the past, the community relied on oral reports from travellers for its news and information about the outside world because Macha had no newspapers and no outside radio broadcasts reach this remote location. They rarely had visits from extension officers, so the travellers were mostly family members, or traders arriving from urban centres to buy the excess crops. Cell phone coverage only arrived at the end of 2006. But, by then, Macha was already connected to the internet.

Internet link

In 2003, in a cooperative effort, community members came together to build a wireless network that would connect Macha to the internet via a satellite connection. They started with a VSAT link that offered download speeds of up to 128 kbps. The service soon became so popular that the bandwidth could not cope with the volume of internet traffic. The problem eased in 2011 when Macha upgraded the connection to a microwave link via a newly available cell phone network, which offers speeds of 2 Mbps, making it truly broadband.

The internet link is further distributed throughout the community via a wireless local area network (WLAN). There are more than 100 wireless access points, offering connectivity to both offices and homes. Surveys and measurements show that Macha has an active internet community of around 200 individuals, 67 per cent of whom are on line for more than three hours a day. Half the users access the internet from home, and 71 per cent use it frequently to surf the web for educational purposes.

As well as having a channel to communicate with friends and family outside of the community, access to the technology produced a discernible difference in agricultural practices within the first year. One community member found information on the web about sunflower farming, and decided to give it a go. A few years later, sunflower farming has blossomed in the village and it is now the community's second most important cash crop.

Professional support

From the outset, the community took the view that the broadband project should be developed by people living in the area. They started MachaWorks, with so-called 'local talent' taking the lead. They take whatever steps the community deems necessary, and implement solutions that work within the context of their own situation. In this way, the community overcomes two fundamental factors that often inhibit rural development projects – the lack of capacity to attract and retain talented local people, and the high distribution and transaction costs caused by inadequate infrastructure and distances from urban centres.

For example, when a talented and

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Credit Macha Works

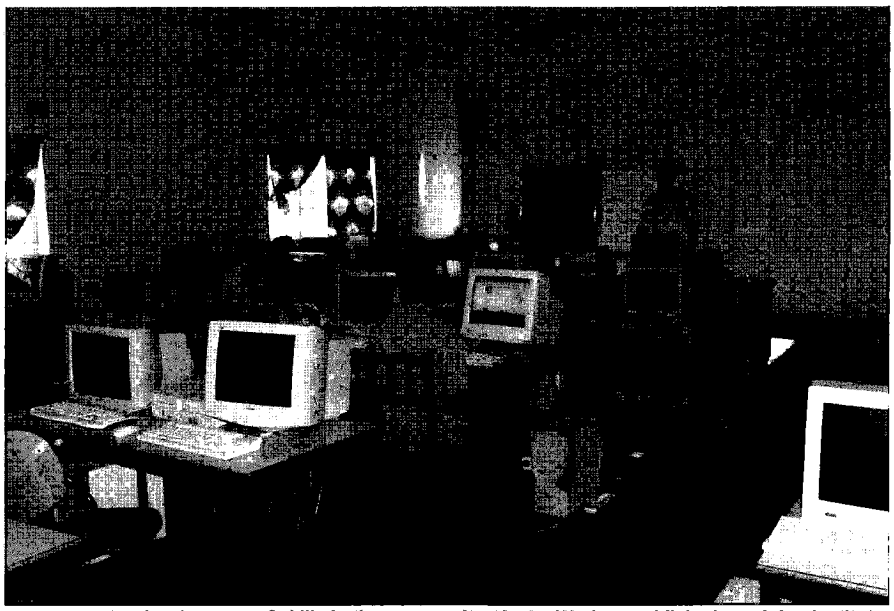
innovative head teacher leaves a village school because there are few possibilities for developing his or her skills in the local area, it becomes harder to retain health professionals and entrepreneurs in the community as they see less opportunity for their children. Also, many one-off interventions and pilot projects fail because they tend to address just a single aspect of rural development, such as agriculture or education, not realising that their implementation might improve some parts of village life, only to create deficiencies elsewhere.

By 2004, Macha had developed the internet connection for the village. While MachaWorks is concerned with the overall development of village services, eight 'focus units' concentrate their efforts on particular sectors within the community, including transport, bio-energy, building, education and health. One of these eight units, known as LinkNet, focuses on developing rural internet networks by training ICT engineers and students, and raising awareness of the benefits of ICTs in other communities.

The initiative inspires people in rural communities to reach their collective and individual potential. It aims to make it attractive for talented people to stay, and even encourage those who have left to return to rural areas. There are several examples of this in Macha. Oscar Kaate, for instance, came back to the village after struggling to make a living selling hair extensions in Lusaka. He is now a network server engineer for LinkNet. Kennedy Hamatunga, works for MachaWorks' hospitality department after gaining experience working in hotels in Livingstone, Zambia's tourist capital. Michael Mweembe chose not to leave the area but stayed in the area to build houses for the ever-expanding activities. He is now a building supervisor.

Partnerships

Macha Works shows that people's decisions to stay in rural areas are linked to opportunities to learn and develop. A good standard of education and an entrepreneurial learning environment are key factors that help villages and small communities to hold on to their local talent. The process evolved in three fundamental steps: 1) internet connectivity, which expanded relationships through the ability to communicate; 2) encouraging the use of locally available skills; 3) support of community initiated ideas.



To support the development of skills in the community, Macha Works established a training institute in early 2004. More than 400 students have since graduated with internationally recognised certificates in computer literacy or advanced ICT engineering skills.

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People in the community describe the introduction of the internet as 'when the light went on'. Many had felt they would have no opportunity to explore beyond their limited geographical area, but exposure to the internet brought new opportunities, and provided the means to build the relationships to act on them.

Because the whole community was involved, with its health institution, schools, entrepreneurs and professionals, the high cost of internet connectivity (which is far higher than in most developed countries) is shared, and the expense becomes bearable. Institutions and donor-organisations came together in public–private partnerships to provide funds for the initial investment. Donors also subsidised the sending of large consignments of second-hand computers for use in health and education programmes. Users pay through a voucher system, which varies according to how much they use. This has enabled LinkNet to break even over the past few years in their not-for-profit-not-for-loss endeavour.

With the combined efforts of each of the eight focus units in Macha, and their ability to use the internet to make connections and build relationships with government and other organisations, they are now enhancing the local infrastructure. Water supplies and energy sources are being developed in the community to ensure that it will continue to grow. Each of the units, along with other institutions in Macha, has set about developing the skills and services on offer in the community and in neighbouring villages.

For example, the village is connected to the electricity network, but there are frequent power cuts. So Macha Works is supporting the construction of a bio-oil plantation of 500 hectares on previously unused land. The aim is to be energy self-sufficient, prevent soil erosion and start spin-off businesses such as soap production.

Information spread

The broad inter-disciplinary approach of Macha Works has led to economic improvement throughout the community. New buildings have been built and local people have been given the opportunity to take part in training programmes in nursing, agriculture, education, communications and other areas. This progress was possible because all the ideas, projects and

improvements are fully managed by local people. They are put into place as part of a gradual process; first by developing awareness, then concentrating on acquiring the necessary skills, and only then implementing the plans and taking on operational control.

The sensitisation phase involves a lot of interaction with local, regional and national leaders, especially with traditional leaders. This stage aims to bring together everyone concerned and to encourage 'local talent' to get involved and catalyse progress. As the people then develop their skills and learn more about a particular subject, whether agriculture or health, the talented individuals work with the community, to build the necessary infrastructure(s) and takes charge of the project's operations.

This whole process, within its specific cultural setting, can easily take more than five years. But the gradual and grounded approach adopted by Macha ensures that the aims of each project are attainable, sustainable and can be replicated by others. It is an approach that helps to ensure support from the majority of people, all of whom are aware of the local situation, the obstacles and opportunities.

For instance, in 2004 Macha was looking to speed up the process of distributing the information acquired through the internet to all members of the community, particularly those who did not yet have web access. For seven years, they lobbied for a local radio licence, then in 2011, the community FM radio station finally started broadcasting. It was able to reach villages within an 80-km radius. Local people decide what programmes to broadcast, based on the priorities of the day and their own research. This participatory approach proved very popular, and encouraged the villagers to set up a video channel on YouTube to spread their ideas and successes further afield.

Local content

To support the development of skills in the community, Macha Works established a training institute in early 2004. Known as the LinkNet Information Technology Academy, it was initially housed in storage rooms, and later moved to purpose-built facilities. More than 400 students have since graduated with internationally recognised certificates in computer literacy or advanced ICT engineering skills.

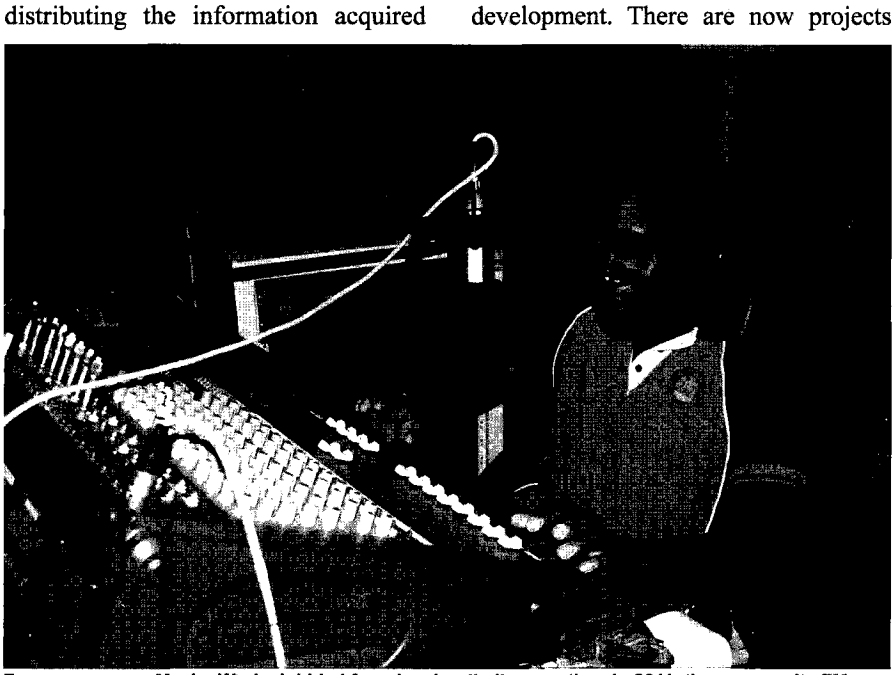
The community is also working with tertiary level institutes such as the University of Zambia. This has brought many national and international students to the area to work on applied research projects in various aspects of rural development. There are now projects covering agriculture, energy, engineering, transport, finance, and management.

In 2009, after planting 600,000 Jatropha trees as part of the bio-oil project, people from other communities started to notice what was happening in Macha. They too wanted to set up a bio-oil plantation, so they received training from Macha villagers, planted seed, and now another 400,000 trees have been planted.

While most internet users in Africa access material that originates outside the continent, Macha has encouraged more intra-village conversation, mainly through instant messaging on social networking sites. Facebook and Twitter are the most popular, accounting for about a quarter of all internet traffic in Macha. Analyses show that more than half of the messages sent were between local users.

Since it was established, Macha Works has created about 300 full-time jobs and 700 seasonal jobs. The community is thriving, with lots of activity in other areas of life too. Many people are building new houses or setting up businesses and support activities. As word of success spreads, other villages are starting to adapt and replicate the processes.

Seven rural communities in Zambia and one in Zimbabwe have now started their own cooperative activities, including developing rural internet access. These have come about through working with, for instance, the Zambia House of Chiefs, and through an active, open invitation to other communities to be supported and trained. As many as 40 other rural communities in the country are either in the process of learning more about Macha Works, and establishing their own <Community Name> Works, or already developing local skills to put the holistic programme into action.



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Gertjan van Stam is social entrepreneur at Macha. This article was first published in ICT update, October 2011.

For more information contact Macha Works, Macha Mission, P.O. Box 630 722, Choma, Zambia. Tel: +260-97623611; E-mail: info@macha-works.org; web: www.machaworks.org