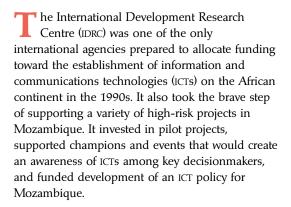**Research Influence on Public Policy: A Case Study**

Mozambique Enters the Information Age

New technologies become tools of community development

A decade ago, Mozambique was on the periphery of the global information society. But today, ask anyone in the town of Manhiça where the telecentre is and they can easily point the way: along the main street, past the general store, down the alleyway next to the evangelical church.

The telecentre, one of a growing number in Mozambique, provides phone and photocopying services, and computer access and training. Even market vendors see the relevance of being "on line." The women want information to support employment and keep their families healthy. And the community recently put the final touches to a CD-ROM about malaria in the local language, Changana, and in Portuguese.

T he International Development Research Centre (IDRC) was one of the only international agencies prepared to allocate funding toward the establishment of information and communications technologies (ICTs) on the African continent in the 1990s. It also took the brave step of supporting a variety of high-risk projects in Mozambique. It invested in pilot projects, supported champions and events that would create an awareness of ICTs among key decisionmakers, and funded development of an ICT policy for Mozambique.

Several developments converged to bring about a focus on ICTs in Mozambique: the country's stability after decades of war; the government's committed search for areas for national development; its exposure to influential global and regional ICT events; its recognition of the need for a national framework to prevent fragmented developments; and the tireless efforts of ICT champions to create an awareness of the importance of ICTs. These opened a "policy window" in the ICT field in Mozambique.

The focus on ICTs began in Mozambique in 1995. Several donor organizations were interested in promoting ICT as a development tool in Africa, and that year the *First African Regional Symposium on Telematics for Development*, co-sponsored by IDRC, was held in Ethiopia. It brought together specialists from 39 African countries, among them influential Mozambicans. One of them, Dr Venâncio Massingue, chaired the Scientific Committee. Then director of the Center for Informatics at the University Eduardo Mondlane (CIUEM) and now the university's Vice-Rector, he has championed ICT use in Mozambique *(see box)*.

A high-risk arena

IDRC's Acacia Initiative emerged a year later at the *Information Society and Development Conference*, held in South Africa, to help sub-Saharan communities use information and communication technologies. Dr Massingue saw the potential and, with IDRC support, organized an international symposium on informatics and development in Mozambique.

"This meeting started the process of consultation between IDRC officials – who were already interested in bringing Mozambique into the proposed Acacia program – and key Mozambican figures," says Dr Zenda Ofir, who evaluated how the Acacia Mozambique projects influenced policy in the country, one of a number of studies undertaken by IDRC's Evaluation Unit. "The discussions led to Mozambique becoming one of the priority countries for implementation of Acacia."

The Acacia project would play a pioneering role by entering this high-risk arena at a time when few

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were prepared to do so. "The Acacia timing was impeccable," says Dr Ofir. "Its timely involvement contributed greatly to the significant IDRC influence in this field in Mozambique."

One theme at the international symposium focused on how to develop a national information policy. Dr Massingue had invited most of the Mozambican Cabinet, and afterwards the prime minister asked him to prepare a policy. "I suggested that what would be better would be some sort of task force led by the prime minister or president," Dr Massingue recalls. "He accepted that and took on the job."

Breaking new ground

Acacia, approved by IDRC in 1997, was one of the first major donor-supported initiatives in Africa to focus on breaking new ground in understanding the role ICTs could play in community development, especially among poor, disadvantaged communities. At the time, precedents in Africa did not exist, notes Dr Ofir's report, and the focus was to be on lessons learned from project experiences.

Issues such as affordability, sustainability, and the easy use of technologies were priorities for study. The need for an enabling policy environment, and thus sound ICT policies in the participating countries, was also considered important.

Activities were focused in four countries – Mozambique, Senegal, South Africa, and Uganda. "At the time there was still considerable skepticism about the development potential of ICTs for Africa," notes Dr Ofir's report. "Donor agencies and governments were not keen to invest in ICTs and even interest from the private sector was limited [...] The IDRC was one of the only agencies prepared to invest in the support of demonstration and policy projects in what was at the time perceived as a high risk area for African development."

In Mozambique, the use of ICTs was being hindered by the lack of a coordinated effort to promote the technologies on a national basis. Imported equipment, connectivity, and Internet access were expensive. The telecommunications infrastructure in rural areas was inadequate. The government feared that efforts to address these problems could become haphazard and fragmented. Policy frameworks were needed.

There were four key projects in Acacia's initial phase: setting up the Mozambique Acacia Advisory Committee Secretariat; formulating an information and communication policy; establishing two pilot telecentres; and introducing ICTs to secondary schools and teacher training colleges.

UEM took the lead in promoting ICTs for development in Mozambique. It organized seminars and worked hard to convince a variety of stakeholders, such as government, academic institutions, and the private sector, to participate.

Energizing the process

The first project Mozambique submitted to Acacia was creation of the Mozambique Acacia Advisory Committee Secretariat. "We needed something to serve as a reference point, a body to energize the process," Dr Massingue recalls.

To demonstrate the value of ICTs, two pilot projects were initiated. One was telecentres: "We wanted something people could see," says Dr Massingue. "For example, they could go to a remote area and see people using technology. This way they would know this is not the fantasy of politicians and academicians!" He adds: "Rural communities in Mozambique have problems with communications, with getting information. By putting telecentres in place, people in these communities can obtain information quickly. Telecentres can facilitate access to education."

No one knew what a telecentre would look like, so IDRC was asked to support a feasibility study. Two pilot sites were identified. To date, photocopying services and the public telephone have proven to be the most popular features. Much less used are email and Internet services. Connecting to the server means a long distance phone call and the high cost is prohibitive for most users. Computer training is one of the most sought-after services, however, and is something people will pay for.

Dr. Ofir's report notes: "There are increasing numbers of telecentres and similar forms of community access ... and so the opportunity is emerging to support networking and shared learning among these to further promote viability."

With 42% of the population 14 years old or younger, the second pilot project targeted youth. SchoolNet Mozambique was born, with education ministry representatives on the team. The aim was to introduce ICTs to schools and other educational institutions. Dr Ofir's report notes that when the pilot projects started to show results, people in various communities began clamouring for their expansion.

In 2000, a national ICT policy was approved, the first in Africa. In 2002, the National ICT Policy Implementation Strategy provided the framework and opportunity for development partners. Mozambique was subsequently selected as one of the first three countries to participate in the Global Digital Opportunities Initiative of the United Nations Development Programme and the Markle Foundation. The work of Dr Massingue had come full circle: research had informed policy to shape development.

Dr Ofir notes: "... Massingue is widely acknowledged as a visionary in ICT who has contributed greatly to the development of this field in Mozambique ... The close links between Massingue and the government would prove to be a key factor in the support by the government of ICT as a national, crosscutting priority for development. Massingue stimulated the interest of government in ICTs at the highest level."

Findings

Of the four Acacia programs studied by IDRC's Evaluation Unit to determine policy influence – Mozambique, Senegal, South Africa, and Uganda – the greatest policy influence occurred in Mozambique. This, notes a synthesis report, was because of some important differences between Mozambique and the other countries: the limited number of policy role players in Mozambique; the influential position and advocacy of its national Acacia Advisory Committee and Secretariat; the small circle of well-networked ICT champions; and exceptional government commitment.

Certain factors supported Acacia's role in influencing policy. For a start, there was the Mozambican government's central planning approach and focus on development priorities, and its open-minded approach to new ideas for development. The small ICT community in Mozambique, with its very well-networked group of key decision-makers, allowed fast and easy transfer of ideas and information. And then there was the keen interest of the President and Prime Minister in ICT promotion.

Other factors included the commitment to Acacia by various energetic and visionary ICT champions, especially during its initial stages; the early demonstration to the government and rural communities of the practical benefits of ICTs, generating enthusiasm for these technologies;

the search by policymakers for action research results and studies of immediate value to inform the policy process; the lack of a significant body of knowledge related to ICTs for development in Africa; and the government's commitment to public consultation.

"The IDRC was one of the first organizations to recognize and address ICTs as a priority area for development in Africa," notes the report. "It chose to focus its actions on community access and services – a difficult arena about which little was known in Africa and in the rest of the developing world. Its pioneering focus increased its risks as funder. Outcomes were uncertain and little was known that could direct strategies and approaches. The early emphasis on feasibility and background research studies, as well as the establishment of pilot projects, laid the groundwork for an integrated, multipronged approach to the Acacia strategies in each country. The approaches and components which characterized Acacia strategies were similar in each of the case study countries and worked together to provide significant policy influence potential."

The case study points out that the Mozambican demonstration projects provided monitoring data that was systematically analyzed to draw out lessons. The research also had a direct effect on the ICT policy. One comment suggested that "the issue the studies raised were not new, but they had more powerful impact due to the fact that there was now documented evidence of the impact factors, such as the high cost of connectivity." The working groups took note of the positive and negative lessons from this and other demonstration projects and found them to be good starting points for implementing ICTs in rural areas and in the field of education.

"Another important feature was Acacia's influence on the policy *process,*" states the case study. "The consultative process used for ICT policy formulation caught the attention of the Minister of Higher Education, Science and Technology. She believes it accelerated the reform process of the telecommunications sector."

Key lessons from Mozambique's ICT champion

Dr Venàncio Massingue bridges the worlds of academia and politics. He has used his knowledge of both these worlds to help bring Mozambique into the "information age."

Born in "one of those little round houses" that dot the Mozambican countryside, he took every opportunity open to him and eventually saved enough to study electricity at technical school. He went on to engineering studies at the University Eduardo Mondlane (UEM), but this interest was cut short when he was introduced to computers. It was during his time at Holland's Delft University, however, that he began to formulate some ideas about how ICTs might help shape his country's development path.

In 1992, he developed a model that became UEM's new Centre for Informatics. "We brought the Internet to Mozambique and set up a computer maintenance centre at the university," he recalls.

He went on to lead Mozambique into the computer age. In spite of being appointed UEM's Vice-Rector in 1997, Dr Massingue has remained actively involved in the ICT arena.

He cites some key lessons learned from the Mozambican experience.

The main message, he says, is to be critical of the way things are done. Second, you have to identify or create or contribute to the creation of champions at all levels. Third, it is important to listen to what people say is relevant to them. "Sometimes donors have their own priorities and ways of doing things," he points out. "New ideas can disturb these, but it is important that they find ways of accommodating new ideas because very small ideas can become very big."

Fourth, is the need to create a critical mass of knowledge. "It is very important that you have people who can carry out research, who can do technical work, and who utilize technology correctly," he says.

Fifth, it is important to maintain an element of research "because research brings knowledge and knowledge can influence policies." He adds: "Policies, when well implemented, can bring the desired development. So it is very important that in all programs, a research program be always present."