

IDRC in Bhutan

For 22 years, IDRC has supported research in Bhutan, a small kingdom located between India and China. This research has had a significant impact, particularly in community-based natural resource management and in the use of information and communication technologies (ICTs) for development.

Until about four decades ago, Bhutan chose to remain largely isolated. Today, a democratization process is underway and the country is negotiating terms of its membership in the World Trade Organization. IDRC-supported research in Bhutan ties into the government's development strategy.

The Royal Government of Bhutan wishes to retain the country's *Drukpa* culture and safeguard its Buddhist values. With this goal in mind, in 1972, Bhutan's then-King, Jigme Singye Wangchuck, coined the phrase gross national happiness (GNH), as an alternative to gross national product (GNP), which is often used as a measure of progress. To determine how to increase GNH, the Centre for Bhutan Studies hosted an international conference in 2004. As part of the many research activities it supports on multidimensional measures of poverty, IDRC, along with the Canadian International Development Agency, the United Nations Development Programme, and other donors, contributed to a

follow-up conference at St. Francis Xavier University in Antigonish, Nova Scotia.

ICTs are an important focus of IDRC support in Bhutan. These technologies promise to play a key role in reducing the isolation of most towns and villages. Centre support helped Bhutan take its first steps in the virtual world. In the late 1990s, a grant supporting work on non-voice data and email communications led to the creation of the national low-cost Internet service, DrukNet. The network continues to expand and is the backbone of the two ICT projects IDRC is currently supporting.

Since 2005, with IDRC support, the Department of Information Technology has been testing the performance of wireless fidelity (WiFi) in remote settlements. At the same time, it is helping the communities determine what kind of information contributes to well-being. WiFi will allow them to leap over the country's geographic barriers to improve people's access to government services, health care, and market information.

Centre-supported research also aims to improve the distance education system for teacher training. The National Institute of Education evaluated the effectiveness of existing correspondence and residential courses for teachers and is using ICTs to add a new dimension to the learning experience, particularly to increase interaction between instructors and students.

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IDRC is also contributing to implementing the Bhutanese government's policy to have natural resources managed by the communities that depend on them. IDRC's research partner, the Council for Renewable Natural Resources Research of Bhutan, which is part of the Ministry of Agriculture, is conducting local research to define what this policy means in practice and training to ensure that all ministry staff understand how to implement the policy.

IDRC has been promoting community-based natural resource management in Asia since 1997. Although this approach is being used in research activities in 10 Asian countries, Bhutan is the first to adopt it as a national strategy. It did so in 2002 following research supported by IDRC and the Swiss Agency for Development Cooperation that enabled the Ministry of Agriculture to develop a national framework and action plan based on the approach.

Bhutan is also participating in an IDRC-supported regional effort to help government agencies involve the most marginalized members of society in community management of natural resources.

IDRC-funded research in the 1980s laid much of the groundwork for these efforts. Indeed, the first activity IDRC supported in Bhutan, in 1984, focused on improving rice crops. The International Rice Research Institute, based in the Philippines, trained 40 scientists and technicians in farming systems research, an approach that improves seeds, access to water, farming techniques, and post-harvest processing. In 2000, the Minister of Agriculture, Lyonpo Kinzang Dorji, said that this research had "laid the foundation for a national agricultural research system in the country."

Since 1984, IDRC has supported 18 projects in Bhutan, some regional in scope, with a total value of close to CA\$5.7 million. Five of these projects are active and represent an allocation of CA\$2 million.

RESEARCH HIGHLIGHTS

Making Community-Based Resource Management a Reality

The people of Bhutan depend heavily on natural resources for food, water, and income. Most of these resources are owned by the state and shared by the people, but population growth, urbanization, and farmers' increasing involvement in the market economy have led to their overuse. Existing community mechanisms cannot manage these changes adequately. Based on earlier research supported by IDRC, Bhutan's Ministry of Agriculture established a policy to sustain the shared assets through community-based natural resource management (CBNRM). The goal is for people to participate in managing the resources in an equitable manner, while improving their livelihoods.

To reach this goal, the ministry set up a CBNRM National Coordination Unit located at the Renewable Natural Resource Research Centre. The unit is supporting participatory research to generate field-based learning and experience and communicating the findings to local and higher levels of government. There are 10 such studies involving integrated watershed management, community forestry, and the management of non-timber forest products and grasslands. The National Coordination Unit and other experts are providing training and guidance to the researchers and the country's Natural Resources Training Institute is developing a CBNRM curriculum for wider training and capacity-building in Bhutan.

(Project # 102569, Implementing the CBNRM National Framework in Bhutan; Duration: 2005–2008; IDRC allocation: CA\$ 488 100; IDRC contact: Oliver Pugnier; Research partner: Pema Choephyel, Council for Renewable Natural Resources Research of Bhutan, c/o Ministry of Agriculture, Bajothang, Wangdue, Wangduephodrang, Bhutan 252; Tel.: 975-2-329124; Email: p_choephyel@moa.gov.bt)

Social and Gender Equity in Natural Resource Management

Efforts to involve local communities in biodiversity preservation and natural resource management are multiplying in Asia. But many government departments, research institutions, and development practitioners involved in these projects have come to realize that the most disadvantaged groups — the very poor, minority ethnic groups, and women — often remain on the margins. For example, development and extension initiatives are still designed for men in locations to which men migrate in search of employment and where women have become primary heads of households.

The need to address social and gender inequity is recognized in principle, but there is a lack of understanding of how to translate theory into practice. Indeed many of the people working in agriculture and natural resource management are still primarily trained in natural sciences.

This project aims to make social and gender analysis the norm in research, rural development, and natural resource management. Bhutan is participating in the Himalayan component, which is part of a larger initiative supported by the International Fund for Agricultural Development and other donors. Leading this component is Barun Gurung, a Bhutanese anthropologist and coordinator of the Participatory Research and Gender Analysis (PRGA) program of the Consultative Group on International Agricultural Research. The PRGA program is developing and testing methods with partners in the eastern Himalayan region to achieve organizational change, particularly in government agencies. The other components consist of local research, training, and curriculum development in China and Vietnam and awards to post-graduate students.

(Project # 102951, Building Capacity for Social and Gender Analysis in Asia: Umbrella Program — Phase II; Duration 2005–2008; IDRC allocation: CA\$869 810; IDRC contact: Oliver Puginier; Research partners: Do Thi Binh, Institute of Anthropology, 27 Tran Xuan Soan Street, Hanoi, Vietnam; Tel.: 84-4-978-4867; Email: binh-dt@netnam.vn; Huguette Dagenais, Department of Anthropology, Université Laval, Pavillon des sciences de l'éducation, Cité universitaire, Québec, Canada G1K 7P4; Tel.: 418-656-7025; Email: huguette.dagenais@ant.ulaval.ca; and Barun Gurung, International Center for Tropical Agriculture, Apartado Aéreo 6713, Recta Cali-Palmira, Km 17, Cali, Colombia; Tel.: 57-2-445-0131; Email: b.gurung@cgiar.org)

Information and Communication for Rural Bhutan

Although Bhutan is a small country, the Himalayan terrain creates barriers to communications in rural areas. People live mainly in the valleys, which generally run north–south and are divided by mountain passes 3 500 metres above sea level. However the main roads linking major settlements run east–west, making travel between the population centres difficult and time-consuming.

Bhutan's government recognizes that ICTs can play a role in overcoming the geographic barriers, linking people in isolated areas, and improving access to often-vital health and government services. And, when people are hours or days away from roads, timely information about outside markets can allow them to get better returns on the sale of agricultural products or other goods.

This pilot initiative with the Department of Information Technology is seeking to identify the best WiFi solutions for Bhutanese conditions. Citizens in the test areas work with researchers to determine their communication and information needs. They have input into the design and testing of the systems, then join in evaluating the social and economic impact. At completion, Bhutan will have gained new capabilities in setting up and running WiFi networks, developing

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content and applications for rural users, and using participatory processes in program planning.

(Project # 102840, Improving Rural Livelihoods by Addressing Information Needs (Bhutan); Duration 2005–2007; IDRC allocation: CA\$417 050; IDRC contact: Phet Sayo; Research partner: Tenzin Chhoeda, Department of Information Technology, Ministry of Information and Communication, Royal Government of Bhutan; Tel.: 975-2-323-215; Fax: 975-2-328-440; Email: director@dit.gov.bt)

Teaching Teachers at a Distance with ICTs

There is a critical shortage of teachers in Bhutan. The average student–teacher ratio is 40 to 1 and, in some cases, reaches 150 to 1. Twenty percent of teachers are expatriates. Most of Bhutan’s teachers hold a Primary Teaching Certificate, which they receive on completion of a two-year program after high school. The government is seeking to raise the minimum professional qualification of teachers to a bachelor of education degree to improve the quality of primary education. Although it has sponsored the Distance Teacher Education Program, interaction between student-teachers in remote locations and their instructors has been very limited.

With IDRC support, the National Institute of Education (NIE) at Samtse, one of the two institutes providing teacher education in Bhutan, has been using ICTs to improve distance learning since 2004. So far, NIE has introduced an open-source learning management system for use with

four course modules — more will be added in subsequent years. Computer literacy classes, a course website, and email accounts are helping faculty and students communicate. NIE established seven regional study centres in schools around the country, each with Internet access and basic facilities such as printing, telephone, and fax services. Work is continuing to improve connectivity and technical support for the system and increase the use of online services by students and teachers.

(Project # 101214, Distance Education for Teachers Supported by Information and Communication Technology (Bhutan); Duration: 2003–2007; IDRC allocation: CA\$234 000; IDRC contact: Maria Lee-Hoon Ng; Research partner: Yangka, Joint Director, Adult and Higher Education Division, Department of Education; Tel.: 975-2-326706; Email: yangka@softhome.net)

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