

Pushing the frontiers of knowledge for the advancement of humanity







Photo (front cover): McGill University has worked with the Caribbean Institute for Meteorology and Hydrology (CIMH) to strengthen its regional leadership in water management and training. (McGill University/CIMH). Photo: McGill University.

regions of the world. (University of Calgary/Mbarara University). Photo: Healthy Child Uganda.

For more information please see: **www.aucc.ca**. All rights reserved. © November 2013.



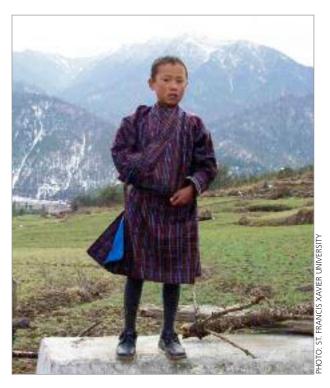
Every day, university researchers and students work in partnership with governments, businesses and communities to tackle the world's most pressing problems.

They innovate and advance knowledge in all sectors and, more importantly, apply learning to improve the quality of life for the most vulnerable, thereby contributing to the advancement of humanity. They help keep children in school with high-quality and relevant education. They improve incomes, advance food security and protect the natural environment. They champion human rights and engage civil society. They co-create knowledge with communities and keep governments abreast of the latest innovations and techniques, supporting them to develop effective policy frameworks.

As a result, universities working with communities strengthen the greatest global resource of all: people. Healthy, safe, educated children and youth are future contributors to Building local environmental governance
— an interview with Bangladeshi villagers.
(University of Manitoba/North South University)

society. Improved individual livelihoods mean an increased tax base for emerging economies. Food security and a thriving environment are fundamental to human health, security and sustainable natural resources. Engaged citizens make for more representative governance and national human resources. Governments equipped with the best knowledge make better decisions.

In this time of radical change and heightened global interdependence, our vast community of learners is reaching every corner of the world for the benefit of all.



Children and Youth

To learn well, thrive and grow, children need to be healthy and safe.

BHUTAN

Leadership for Quality Basic Education

St. Francis Xavier University, Canada Ministry of Education, Bhutan

Keeping children around the world safe, healthy and in school today is the best way to foster greater prosperity and quality of life tomorrow. The first step is making sure those who teach children have the best possible education themselves.

In Bhutan, hundreds of teachers, school principals and administrators have received training at the master's level, as well as at a diploma level, through the development of a Bhutanese Leadership Diploma Program. Educators from St. Francis Xavier University in Nova Scotia worked with Bhutan's National Institutes of Education and Sherubtse College to develop the most relevant training possible. They also helped upgrade libraries and improve communication resources for students.

The project has had unprecedented positive impacts on the basic education system in Bhutan. Through an exchange of ideas and approaches,

Canadian educators developed strong relationships with their Bhutanese counterparts. Bhutanese educators learned to use real-life local examples in their teaching and to allow students to learn according to their own learning styles and goals.

Today, Bhutan's educators do not have to rely on outside experts to meet their unique teaching challenges. Eighty percent of the country's educational leaders (250 school leaders and 20 university instructors) participated in the project and now form the pool of formally trained people needed to move forward in building a successful education system.

Bhutan, famous for its Gross National Happiness Index (http://www.grossnationalhappiness.com/), has a national goal to improve its human resources. The country knows that it is essential to provide greater access to quality education for its rapidly growing population, especially for marginalized groups and under-served communities. Graduates of this program – teachers, principals and administrators – have gone back into their schools and classrooms with improved abilities to deliver key curriculum and accommodate a greater number of school-age children.

Children now have better access to classrooms headed by well-trained teachers, in schools run by highly effective administrators. These educators in turn know what knowledge and skills Bhutan needs to succeed in the future, and have the ability to provide a quality education to the country's next generation of workers and leaders.



Graduates with improved abilities to deliver key curriculum.



A Ugandan mother learns how to use her family's new bed net. (University of Calgary/ Mbarara University of Science and Technology)

UGANDA AND DOMINICAN REPUBLIC

Canadian academics are uniting with partners worldwide to improve the health and well-being of children and youth. Collaborations in Uganda and Dominican Republic, for example, have enjoyed remarkable success – and will carry on for the foreseeable future.

Uganda Sustainable Clubfoot Care Project The University of British Columbia, Canada Makerere University, Uganda

This successful Ugandan partnership has led to a significant increase in the number of young children treated for clubfoot. Using an innovative and inexpensive technique called the Ponseti Method, doctors at the University of British Columbia and Makerere University are ensuring these children will grow up without a disability that would likely condemn them to poverty. This project is also contributing to the World Health Organization's development of standards for the consideration of disabilities in development work.

Strengthening Child Health in Rural Uganda University of Calgary, Canada

Mbarara University of Science and Technology, Uganda

Strategic training and coordination provided by Mbarara University of Science and Technology, in partnership with the University of Calgary's Faculty of Medicine, has built a model health system infrastructure to support the health of children that is serving 175 villages. After five years, Community Health Workers trained by the project report dramatic declines in child



A mother shows off her baby's healing feet with Canadian surgeon Shafique Pirani, who has championed the project with Ugandan colleagues, and Tanzanian orthopaedic surgeon, Shariff Shariff, trained by Shafique Pirani in the Ponseti Method. (The University of British Columbia/Makerere University)

mortality and one-third fewer young children sick with malaria, pneumonia or diarrhea and malnutrition. Bed net use, safe deliveries, maternal tetanus vaccination and vitamin A are more prevalent. Notable community-building spin-offs have resulted, including Community Health Worker income-generating projects, transportation and water initiatives, improved family relationships, hygiene and sanitation, and new opportunities for small business (especially among women). Community Health Worker retention has been impressive: 85 percent after five years.

Child Protection and Interfamilial Safety

Ryerson University, Canada Autonomous University of Santo Domingo, Dominican Republic

Through a partnership between Ryerson University's School of Social Work and the Autonomous University of Santa Domingo in the Dominican Republic, a new generation of social workers is being trained to go into communities and educate young people and their families about their rights. They are undertaking groundbreaking research and launching community projects that help protect women and children in the country's most vulnerable populations from prostitution, violence and abuse, while improving their overall quality of life. The partnership extends beyond the university to include key members of international, government and community organizations.



Economic Growth

Building a successful local economy takes a high level of community participation in the learning process: 20 percent theory, 80 percent practice.

VIETNAM

Beekeeping development and rural extension in Vietnam

University of Guelph, Canada Vietnam Bee Research and Development Centre, Vietnam

Communities struggling with poverty in rural Vietnam are reaping "sweet" benefits from this partnership, unique in Asia. Scientists from the University of Guelph partnering with the Vietnam Bee Research and Development Centre (BRDC) are increasing the numbers of rural beekeepers in Vietnam. They are also helping beekeepers produce greater yields of honey more efficiently and bolstering incomes in the process. Rural women, in particular, are benefiting from the project.

Beekeeping is the gateway to important social benefits and indirect economic benefits: a woman who once worked eight hours a day hauling rocks out

Gard Otis, a University of Guelph faculty member, helps a local beekeeper assess the health of her hive.

of icy water can now be a small entrepreneur; children are able to go to school because parents can now afford to pay education fees; higher yields of fruit and other crops due to bee pollination means more produce to sell.

BRDC researchers, trained to deliver relevant workshops, videos and apiculture manuals, help farmers to build on their traditional beekeeping techniques to substantially increase honey yields.

The results have been remarkable. The farmers, both men and women, are learning about the ecological benefits of bee pollination and better farming techniques. They have tripled the number of hives they manage and increased their annual incomes by 15-20 percent on average. Most significantly, the beekeepers are contributing their own innovations to hive management. Researchers continue to monitor success of the project by tracking how it affects the lives and incomes of trainees. Input from the farmers themselves and close interaction with BRDC researchers have been key to the project's continuing contribution to Vietnam's comprehensive poverty-reduction plan.

BOLIVIA

Bolivian Specialization in Community Economic Development

Simon Fraser University, Canada San Andres Mayor University, Bolivia Simón Bolivar Andean University, Bolivia

At a time when 1.22 billion people still live on less than \$1.25 a day, sustainable economic growth is critical to reducing poverty. (World Bank, 2013)

For many of the Aboriginal people participating in this project, attending Community Economic Development courses was the first opportunity they'd ever had to set foot inside a university. Working with a team of academics from

Simon Fraser University's Centre for Sustainable Community Development, San Andres Mayor University and the Simón Bolivar Andean University, and learning alongside members of non-governmental organizations, these community leaders co-created the curriculum. This model allowed them to learn skills and gain knowledge that they have used to hold participatory workshops in their home communities to promote socio-economic development that is beneficial to all community members.





Community leaders, including youth, with support from university faculty and staff, develop an educational model that is strengthening local governance. (Photos above and below.)

Ongoing support from trainers and researchers is critical to the success of these initiatives. The highly participatory training method used is being adopted by a growing number of non-governmental organizations that recognize the value of involving all stakeholders in every stage of the educational process, from curriculum design to learning to action.

Through relationships formed in Bolivia, Simon Fraser University also tested and developed an online tool to help communities plan their own development. (See http://www.sfu.ca/cscd/ BoliviaCED/.) They presented it at the World Congress of Local Governments for Sustainability in Brazil in June 2012.

Another exciting dimension of the project has been the exchange of ideas and experiences between Aboriginal groups in Canada and Bolivia. In 2011 a group of Bolivians visited the Stó:lō Nation in British Columbia. And in 2013, a member of the Stó:lō Nation visited Bolivia to share knowledge and broaden understanding of how each community approaches economic development.

Canadian universities partner internationally to advance knowledge and practice in all fields. These collaborations demonstrate practical contributions from universities in a range of fields that promote economic development, food security, health and well-being, and sustainable energy and waste management.





Renewable energy: A school, situated in a village of 6,000 people in Burkina Faso, now has use of solar-powered electricity thanks to collaboration between project partners and the Ingénieurs Sans Frontières Québec. The maternity clinic and dispensary have equally benefited from solar-powered lighting, as well as fans and refrigerators. (École Polytechnique de Montréal/ Applied Science and Technology Research Institute)

Urban development for fragile communities: Rebuilding after the earthquake in Haiti is not just about constructing buildings, but also restoring conditions for basic necessities. Many citizens initiate their own restoration efforts. Since before the earthquake, this project has provided training for planning and development for fragile communities. (Université du Québec à Montréal/Quisqueya University)



Social work: The education of social workers in Nigeria as positive agents of change has been strengthened. The project stimulated the formation of the Nigerian Association of Social Work Educators (NASOW). (University of Windsor, York University/University of Benin – Nigeria)



Aquaculture: Mozambique's national goal to increase artisanal aquaculture has been improved by this collaboration between the University of Victoria, University Eduardo Mondlane's School of Marine and Coastal Sciences and Brazilian counterparts. Food security and employment have been increased by training specialists in aquaculture methodology, establishing teaching and research laboratories, and promoting micro-enterprises in rural coastal areas. (University of Victoria/University Eduardo Mondlane)





Aquaculture: Members of a women's community group being trained in how to construct a raft of floating fish cages for culturing tilapia in a lake, a method previously not used in that locale in Kenya. (Memorial University of Newfoundland/MoiUniversity)

Agriculture: Women farmers in Honduras learn about natural pest control methods. Farmers in Central America can now make better decisions, including safer pestmanagement practices. (University of Manitoba/University of Costa Rica/National Agricultural University (Nicaragua)/ National Autonomous University of Honduras)



Health and preventative medicine: University of Manitoba faculty trained Sichuan University faculty and graduate students, and public health workers of the Zigong Centre for Disease Control and Prevention, to map and enumerate HIV high-risk groups, as part of evidence-based planning and evaluation to reduce sexually transmitted infections. (University of Manitoba/Sichuan University)



Sustainable waste management: Transforming plastic bottles into washing line at Coopcent recycling cooperative network in Diadema, Brazil. (University of Victoria/ University of São Paulo)



Food Security

Growing Hope: "A new generation of agronomists, better trained farmers, higher quantity and better quality of food, healthier families – this is just the beginning of our harvest." *

DEMOCRATIC REPUBLIC OF THE CONGO

Strengthening food security capacity in the Democratic Republic of the Congo Laurentian University of Sudbury, Canada University of Kinshasa, DRC

Food security and safety is a key goal for many international development projects throughout the world. In the Democratic Republic of the Congo (DRC), Canadian and Congolese universities have teamed up to take an innovative approach to this critical aspect of poverty reduction with far-reaching consequences for the country's citizens.

By introducing a new and more nutritious strain of corn to Congolese farmers, researchers are helping to improve the health of nursing mothers and reduce malnutrition among infants and people with HIV/AIDS.

Researchers are also helping farmers combat the devastating effects of climate change on traditional crops – hardier crops mean substantially increased yields, which in turn mean larger incomes for farmers

Not only have 250 tonnes of improved corn and legume seeds been produced, but, more importantly, local capacity to sustain high-quality seeds has been created.

who can use this extra money for necessities such as school fees and medicine.

More than 1,800 families received help with activities related to harvesting and food preservation. Two hundred and fifty tonnes of improved seeds (corn and legumes) were produced. Eighty-five community members representing non-governmental organiza-

tions and the government took part in training sessions on seed production and preservation.

The doctoral program at the University of Kinshasa focusing on food safety has been reestablished. Students at the master's level, many of them women, now have access to new computer labs and expanded libraries. Laurentian University has also established permanent access to its virtual libraries, making precious information available. A documentation centre including a library, computer room and classroom were set up for the community.

The project is seen as a model and has attracted funding from the Africa Development Bank and the European Union. Thanks to this project, the Congolese partners attracted an additional \$20 million to further extend food security goals in the DRC and beyond.

Despite facing both political instability and unpredictable climates, this project has had a profound impact. It has enhanced the capacity of the Faculty of Agronomy of the University of Kinshasa and the non-governmental organization Caritas to offer a first-rate food safety and agronomy education. What's more, participants restored a proud tradition of agricultural excellence to communities.

^{*} Bruno Miteyo, National Director of Caritas Congo, Deputy President of Caritas Africa Uniworld, Spring 2011, p.4.

ETHIOPIA

Sustainable rural agriculture development

University of Saskatchewan, Canada Hawassa University, Ethiopia

Ethiopia's economy is heavily based on agriculture, yet the country struggles to be self-sufficient in its food production. Rapid population growth and longer periods of drought due to changes in climate have compounded the problem. A successful collaboration with researchers at the University of Saskatchewan has strengthened Hawassa University's College of Agriculture and its School of Food

Science, Human Nutrition and Technology, and established an outreach program to help farmers increase food production.

The project's aims fit well with the Ethiopian government's goal of securing long-term sustainable agricultural development and food security for its people.

Increasing the capacity of Hawassa University's College of Agriculture has enriched the learning experience for many students and farmers in rural communities. Women farmers in particular enjoyed interacting and learning from female researchers. Faculty developed new courses in animal and plant sciences and nutrition. Professors at the college upgraded their



Sheleme Beyene from Hawassa University's College of Agriculture inspecting the intercropping of maize and dry bean research plots in the Butajira district.



MSc student from Hawassa University's College of Agriculture explaining her research progress to farmers, faculty members and agriculture development agents during a field day in the Halaba district.

teaching and research skills and enhanced their career development. Special scholarships for female students were also available – one female researcher, for example, received a fellowship to upgrade her computer skills at the University of Saskatchewan. Over 100 students have graduated with MSc degrees, and employment and retention is high for this group. A PhD program in Agricultural Science has also been established.

Through the instruction of faculty and researchers at Awassa, farmers – many of them women – learned about production system technologies and safer environmental methods both in the classroom and in the field. Follow-up surveys have shown that the highland farmers who received this form of education continue to use the improved farming practices.

The project's partnership now extends beyond the University of Saskatchewan's College of Agriculture and Bioresources to include collaborations with its faculties of Pharmacy and Nutrition, Nursing and Veterinary Medicine.

"The most remarkable achievement was the retention of all the MSc graduates in Ethiopia, reversing the usual "brain drain" effect. All these individuals are now working as agricultural professionals and are contributing to agricultural development and improvement of human nutrition in Ethiopia." (Impact Study, cited in the project's Final Report)



Governance

Universities champion equality: Everyone has the right to develop the knowledge and skills they need to make positive change in their lives.

BANGLADESH

Building Environmental Governance Capacity in Bangladesh

University of Manitoba, Canada North South University, Bangladesh Center for Natural Resource Studies, Bangladesh

There is hope that micro-credit programs can become a tool for Bangladesh's environmental governance.

Local management of natural resources such as wetlands, fisheries and floodplains is the best way to ensure that the environment and community livelihoods are protected. The 'greening' of micro-credit – a key tool in many countries seeking to eradicate poverty and enhance citizens' quality of life – is a great way to involve people in managing resources to their benefit.

In Bangladesh, a new and innovative interdisciplinary degree at North South University gives people the skills needed to bring together pro-poor economic development with environmentally sustainable resource management. Students in the Master's of Resource and Environmental Management Program (as well as a related professional certificate) have come from a number of fields, including environmental

Fishing in winter: local people depend on the environment to survive and have a motivation to protect it.

science, engineering and economics. Graduates are employed in government, non-governmental organizations and at state-owned and private enterprises.

The project, championed also by the Center for Natural Resource Studies, a non-governmental partner, has fostered green micro-credit through a number of community initiatives that are empowering citizens, women in particular. It's allowing them to become self-sufficient, get involved in local leadership and sustainably manage businesses such as bed-weaving, organic crop cultivation and handicrafts. The project demonstrates

that involving women in the decision-making process is key to any successful natural resource management plan in Bangladesh.

The project has been attracting attention and extensive media coverage. The women involved continue to be part of their communities' leadership, engaging in dialogue with partner organizations and major stakeholders – including one of the leading policy advisory bodies for the Government of Bangladesh. National and South Asian regional organizations have approached the project with proposals to form an advocacy coalition, with the aim of influencing national policies throughout the region.



In Bangladesh, local approaches to greening micro-enterprises combine pro-poor economic growth with sustainable resource management and are strengthening environmental protection.

Environment

CARIBBEAN

Caribbean Water Initiative (CARIWIN)

McGill University, Canada Caribbean Institute for Meteorology and Hydrology, Barbados

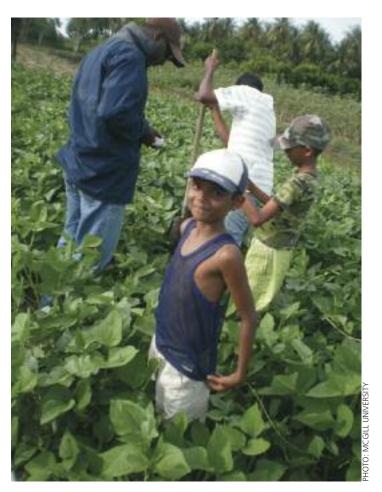
Well-managed water resources are essential to the health and well-being of every human being on the planet. Without a safe and reliable water supply, citizens face serious health risks and threats to their livelihoods. Caribbean countries such as Guyana, Grenada, Barbados and Jamaica grapple with the additional challenge of dealing with the catastrophic effects of hurricanes and floods. The region's governments know they must seek ways to improve hydrologic data, train more water-resource specialists and increase institutional capacity for training and research.

This joint project between McGill University's Faculty of Agricultural and Environmental Sciences and the Caribbean Institute of Meteorology and Hydrology (CIMH) has upgraded the regional training facility for water specialists, in keeping with the strategy to integrate the water policies and practices of national governments in the region.

The project has overseen the training of waterresource managers with an emphasis on environmentally sustainable techniques, the involvement of women in decision-making and the water needs of the region's most poor and vulnerable people. Local governments, women's agencies, students and faculty at collaborating institutions, farmers, ethnic minorities and other marginalized groups have benefited.

Participants have developed training programs suitable for national policy-makers and senior water technologists. Installation of functional hydrometric equipment such as rain gauges and stream-level recorders generate data for Jamaica, Grenada and Guyana. They've implemented a software data system to analyze and present critical water information. And they've developed a water-strategy governance model in each country, so that information can be gathered and shared throughout the Caribbean.

The CIMH is now recognized in the region as a credible leader, with influence on government policy and collaborative relationships with decision-makers. It is a valuable institution with modernized data



Improved water management protects communities and crops from drought and flooding, and supports food security.

management and the ability to deliver first-rate training courses in water management. Students have conducted surveys of water usage to develop solid scientific data on which to base the region's future water strategies. Through the Drought and Precipitation Monitoring Network, CIMH has provided information to support regional decision-making, including monitoring and early warning of drought and flood conditions in the Caribbean basin.

Successful project spinoffs include National Water Information Systems in Grenada and Barbados that may serve as models for other Caribbean countries, and a collaboration with the United Nations Development Fund for Women on aspects of the project that foster gender equality, such as scholarships and leadership roles for women in regional water management and policy making.

Equality

MEXICO

Women, Poverty and Education in Mexico

Simon Fraser University, Canada University of Northeast Iberoamerica, Mexico

The women's centre model in Mexico was so successful in getting women more involved in community building and furthering their own education that project managers explored applications of lessons learned at an Aboriginal mothers' drop-in centre in Vancouver. It's an example of how Canadian researchers learn valuable and transferable lessons from their international partners.

Lives are changed by education – especially the lives of the most vulnerable. In Mexico, Simon Fraser University partnered with University of Northeast Iberoamerica and several non-governmental organizations to improve the quality of basic education offered to adult women in Tijuana. Many now act as health and development promoters (promotoras) and use their new skills to share the knowledge they gained with their communities.

The new model developed by the educators seamlessly melded the teaching of basic skills such as mathematics, computing and English with courses in social development, human rights, ecology, health, disaster planning, negotiation skills and border-to-border issues.

Many of the women who took courses went on to get jobs in local non-governmental organizations and businesses. Employers reported they were impressed with the women's level of confidence, efficiency and rapport with their communities. Some, including a 65-year-old mother of 12, went on to





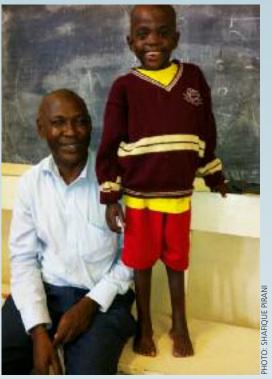
Advancing the education and rights of women has created a cadre of women who use their confidence and skills to improve their communities and empower others. (Photos above and below.)

attend university. Others started their own community projects or businesses. One group of women received funding to establish a women's centre in a remote indigenous community.

Most profoundly, receiving a diploma or degree changed how community and family members viewed the women – and how women saw themselves. Today, many are key decision-makers, private entrepreneurs and respected community leaders. They understand their own rights to equality and are determined to share what they've learned with others – both in Mexico and beyond.

For Canadian and Mexican project partners, it was the most gratifying and tangible result of their collaboration: watching their former students teach others what they had learned, and seeing the ongoing positive impact on their communities.





Excerpt of a letter from Luutu Muwanga, father of Ibrahim, in gratitude for having his son's clubfeet fixed, thanks to the University of British Columbia and Makarere University partnership to establish the innovative Ponseti treatment in Uganda:

I am a farmer and my wife is a house wife. We now have five children. Ibrahim is the last. After birth, when I saw the baby with both legs abnormal, I lost hope. I could not believe that my child's legs will come back to normal as they are now. We attended the foot club seven times. Bear in mind that it's a long way from my home village to the foot club in Mulago and we are poor financially, but we tried to bring the baby. Now the baby is okay. It is unbelievable but true. Thank you. Thank you. I will never forget you. If my child grows up and starts understanding and reading, I will keep the copy of this letter for him to know who made him to be as he is now. If my child grew up in that previous state with birth legs abnormal, his education would have been very difficult, and looking after him, because he would have been a disabled person. But now his future life is clear. I am ready to give foot club 10 acres of land free to construct a big hospital to continue helping the people in Uganda. I pray to the Almighty God to bless you all in whatever you do.

The partnerships featured in this booklet are a small sample of the powerful ways that Canadian universities, collaborating with other higher education institutions, non-governmental organizations, governments and the private sector, are changing lives for the better.

These partnerships advance knowledge and practice in many fields — renewable energy, forestry and wood processing, mining, aquaculture and fisheries, maternal and child health, social work, basic education, and community economic development — all for the benefit of those in greatest need. The applied education programs put in place in partner countries produce cohort after cohort of capable professionals. Those empowered by the higher education they receive go on to serve and strengthen their communities, resulting in lasting impacts that can and do positively affect entire countries and regions of the world.

For more information please see: **www.aucc.ca**. All rights reserved. © November 2013.



