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Passion to change world

Young Canadians offer their skills to African nations
Toronto-based volunteer group takes flight

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In the southern African country of Zambia, most people die before the age of 35. The average wage is less than \$500 a year, and AIDS and malaria sap the strength of those who try to eke a meager living from the drought-ravaged soil.

Though spectacularly beautiful, it is an unlikely destination for young Canadian professionals seeking work. But a growing number are heading there, and to other impoverished countries, to donate their skills to people in desperate need of help and expertise.

"The situation here is really tragic," says David Damberger, a 24-year-old Calgary mechanical engineer who is living in the town of Choma, in southern Zambia. "This part of the country is in a severe drought that's affecting the food supply drastically. Farmers are scavenging just to get enough food to eat."



Canadian volunteer David Damberger of Calgary, right, watches as Francis welds a treadle pump in Choma, southern Zambia. The 24-year-old mechanical engineer has also worked in India.

Damberger is a member of Engineers Without Borders, an expanding Toronto-based organization whose Calgary chapter he founded. Since it was created five years ago, EWB has sent 145 volunteers on overseas assignments to the developing world.

Damberger's mission is helping local people obtain a simple, but cleverly adapted piece of equipment that may make the difference between life and death for hundreds of rural dwellers.

"It's a treadle pump, and it can be built cheaply and locally," Damberger says in a phone interview. "Basically it's like a StairMaster. You stand on it and step up and down. Zambia has shallow groundwater, and people can dig wells. This device pumps water from the wells and rivers, so that even without electricity, they can expand the amount of land to grow crops."

Damberger, who has also worked in India, arrived in Choma two months ago. He is now living in a "single-room cement shack the size of a bus shelter" and is learning Tonga, the

local language. And he is part of a new breed of university graduates — and undergrads — who set their sights on humanitarian rather than material goals.

In Africa, their expertise is crucial.

"A whole generation of professional people is being wiped out by AIDS," says United Nations envoy Stephen Lewis, the leading expert on the effect of AIDS on Africa. "When they die, who is going to replace them?"

In Toronto, George Roter and Parker Mitchell are striving to fill the gap.

Mitchell, an engineer and Cambridge graduate in African development, and Roter, a biomedical engineer who designed artificial body parts, met at a Timothy's coffee shop five years ago. There, they brainstormed the idea of following the example of Médecins Sans Frontières, which sends doctors to far-flung, often conflict-ridden countries.

To launch Engineers Without Borders, they loaded up their credit cards to a total of \$30,000 and sent the first group of volunteers on their way to battle poverty in regions most Canadians could scarcely locate on a map.

The experiment was a dazzling success. "When I look back on it, I can only shake my head," chuckles Roter "What were we thinking of?"

Roter and Mitchell, both 28, have just been named by Canadian business leaders to the annual list of "Top 40 Under 40," the pick of the entrepreneurial crop. In the past five years they have shepherded EWB to the position of fastest-growing non-governmental organization in the country, with more than 10,000 members and \$1 million raised in the past year alone.

The group also won a prestigious United Nations award for development education, and last year, were selected for two national development awards. It has taken regional prizes for its outreach and other programs.

"The people who volunteer with us are fired up with a passion to change the world, but in a very practical way," says Roter. "Every year we're sending people overseas with higher and higher levels of knowledge. They begin preparing themselves at their own universities, and they know that going overseas isn't the starting point, it's the culmination of a lot of hard work."

Last week three-dozen student volunteers from across Canada gathered in a classroom at University of Toronto for the completion of a three-week training program. They will spend four months in Ghana, Tanzania or the Philippines. Graduate engineers work a one to three-year term.

All volunteers do their own fundraising, and are paid a nominal wage of \$5 to \$10 a day — similar to the pay of professionals in the countries where they are working. Each

student must raise an average of \$5,000 to support his, or her, trip. (In spite of representing a traditionally male-dominated profession, EWB has 50 per cent female volunteers.)

It's a rigorous preparation period, and only the most serious reach the finish line, clambering on to airplanes, trains and rickety buses that will take them to their destinations. First, though, they must go through a crash course in EWB's principles of development through access to technology, using "people-centred" skills that aim at learning as well as teaching.

"When we designed our training programs we borrowed from organizations that had similar goals," says Roter. "Volunteers learn that if they step back and ask questions they'll be more successful. There are no simple answers to deliver. It's important to understand that everything is more complex than it seems."

The warning doesn't discourage EWB's young trainees, many of whom have already visited developing countries, and have a deep interest in humanitarian issues.

"To me it's an equity issue," says Tracey Mann, 24, an economics graduate from Simon Fraser University in Vancouver. "It's my opportunity to exist in a country that doesn't have the advantages of Canada."

Mann, and 22-year-old mechanical engineering student Danny Howard from University of Alberta, are leaving next week for Ghana, where they will work with an EWB partner group to help local people obtain and use power generators called multi-functional platforms. They are simple labour-saving devices that free up rural people from arduous tasks such as grinding cassava root (for flour) by hand.

They'll also wrestle with the same problems as the locals: un-co-operative weather, myriad tropical diseases, food shortages and electricity failures.

"We'll be able to see making a livelihood from a totally different perspective," says Howard. "It's stepping outside of Western society and living the life of the people we're trying to help."

Building the capacity to solve local problems is EWB's mandate. Its main focuses are water and sanitation, food processing and agriculture, energy, and information and communication technology — basic systems that Westerners take for granted, but in the developing world are often lacking. But boosting capacity also depends on building the local economy.

In Zambia, Damberger says, "we find local manufacturers and train them to produce pumps. With those skills they can build a manufacturing sector that sustains itself. We also partner with other organizations to help with micro-credit loans. Some farmers belong to co-op groups that are part of the process. That way we can use traditional and other solutions."

In countries like Zambia, where millions live on the edge of starvation, such aid is far from theoretical.