Photo: Amanda Stronza

CENTER ON CONFLICT AND DEVELOPMENT
TEXAS A&M UNIVERSITY

HUMAN-ELEPHANT CONFLICT WORKSHOP

IN BOTSWANA

In the northern Okavango Delta of Botswana, equal numbers of people and elephants compete for land, water, food, and other natural resources. Ancestral pathways cross through agricultural farmlands and result in inevitable conflict between humans and elephants.

PARTNERING FOR COEXISTENCE

In response, Texas A&M University's Center on Conflict and Development (ConDev, condev.org) teamed up with in-country partner Ecoexist (ecoexistproject.org) and MIT's D-Lab to bring together local farmers and students from Texas A&M, MIT, and the University of Botswana for a five-day workshop in Botswana to co-create innovative solutions to foster coexistence. At the end of the workshop participants developed prototypes of various devices to help mitigate human-elephant conflict in the Okavango Delta.

A team presents their prototype to other workshop participants. Photo: Claire Gordon

This workshop is part of ConDev's greater initiative to empower local people and provide students with high impact experiences by bringing together teams from across cultures and disciplines to innovate and tackle global problems through a series of workshops and mentorship opportunities (condev.org/innovators).

Ecoexist hosted the workshop by bringing innovatively minded farmers, recruiting University of Botswana students, and providing valuable elephant behavior expertise. MIT facilitated the workshop based on their Creative Capacity Building workshop model and brought their engineering expertise to the table.

ConDev helped by leveraging its global network to bring together international faculty, students and development professionals to the event.

ConDev and D-Lab are partners in the "Higher Education Solutions Network," a collaboration between USAID and seven top universities designed to channel the ingenuity of university students, researchers, and faculty towards global development.

The goals for this interdisciplinary and cross-cultural workshop were to help foster co-existence by creating novel solutions to local problems in the hopes of human-elephant conflict in northern Botswana.

CRAFTING LOCAL-LED SOLUTIONS

Upon their arrival, participants split into interdisciplinary teams and created prototypes to address needs identified by local farmers. After mapping out their designs, the groups used local materials to create models for charcoal presses and maize shuckers, which the farmers could take home to test and inspire other new ideas.

Participants designed projects from start to finish: learning the design process and working together with a diverse interdisciplinary problem solving team.

Rodney Boehm, a faculty member from Texas A&M University's College of Engineering, assists in prototype construction. Photo: Christina Harrison

WHO PARTICIPATED?

The workshop brought together
63 participants
from
9 countries

Students came from all over the world –
Texas A&M University
MIT
University of Stellenbosch
University of Botswana

People from diverse backgrounds
Farmers
Elephant Biologists
USAID Professionals
Engineers
Anthropologists
Education Professionals

5 PROBLEMS, 5 PROTOTYPES

Three of the 5 final projects involved chili peppers, a local product Botswanan farmers use to keep elephants and other animals from entering their farms. These peppers are extremely irritating to both humans and elephants. Finding ways to use chili peppers to deter farmers, but not humans was a key challenge!

At the end of the week, the teams presented their designs and prototypes to the entire workshop to get feedback and further improve upon their inventions.

Ultimately, the teams created prototypes for 5 technologies to respond to the farmers' needs:

- A device that uses a moving line to soak rags along fences in chili buckets, thereby avoiding irritating the skin and eyes of farmers while still warding off elephants
- A fence to discourage porcupines and other small animals from entering fields containing high-value vegetable crops
- A chili crusher to safely grind chili peppers without irritating the farmers' skin and eyes
- A millet crusher to grind millet, reducing the time and labor required to process millet.
- A chili bomb burner that can be used in both the dry and rainy seasons. (Farmers make chili bombs—elephant dung mixed with chili peppers—and burn them to keep elephants away without harming the animals).

Learn about more ConDev Student Innovators at condev.org/innovators

As the Human-Elephant Conflict workshop participants departed for their respective homelands, they left behind technical solutions to improve the daily lives of local farmers, which they were able to create by drawing on the diverse knowledge base and experiences of the farmers, themselves, local partners like Ecoexist, and other innovative-thinking scholars from around the globe.

Students expanded their outlook on working in developing communities, understanding diverse team dynamics, and an appreciation for subsistence farming. They took with them friendships forged and lessons learned through the pursuit of a common goal: to reduce the potential for conflict between the inhabitants of Botswana's Okavango Delta and the elephants whose land they share.

Leaving a mark: Children's size 5 shoe inside an elephant footprint near the village of Seronga, Botswana
Photo: Rodney Boehm

WORDS FROM THE WORKSHOP

"You guys are really doing an excellent work adding value to rural people's lives."

Mahlodi Tau,
USAID Southern Africa Office

Photo: Christina Harrison

Photo: Rodney Boehm

"Matombo said, and I'll never forget, 'I can tell that you care.' For those few words, for that small reward, I would do all of it again, ten times over."

Abin Joes, Undergraduate student in Industrial Engineering,
Texas A&M University

Photo: Claire Gordon

"Being able to work so productively with such a diverse group of students and local people is something I didn't really think would be feasible and it was, in the best way possible."

Claire Gordon, Master's student
in Conservation Ecology,
Stellenbosch University in South Africa