



HECTOR GONZALEZ

# UA and Soviets Join to Help Botswana

BY JESSICA BELL

**R**esearchers in the Office of Arid Lands Studies are about to embark on a new land-use monitoring study in Africa. This time they are going to Botswana, a country of 1.8 million people located just north of South Africa.

University of Arizona and other American scientists will work there with researchers from the Soviet Union in an attempt to monitor desert encroachment in productive agricultural lands.

"The logical place to work was Botswana because of the appropriate conditions that exist there," says Timothy Frankenberger, a member of the UA research team.

The area they plan to study is the southwest corner of the country, where the Kalahari Desert is spreading into range lands at an alarming rate.

Using techniques that Frankenberger and others developed during a similar project in West Africa, researchers plan to look at the current land-use patterns there and see what is detrimental to the environment and what is not. From there, researchers can develop alternate

resource management strategies to help stop the growing desert.

"People farm and graze animals in this part of Botswana," Frankenberger says. "Now cattle are moving more and more into the southwest areas of the country that are environmentally fragile."

Because the environment is already stressed, the addition of cattle into the region may cause wind erosion that strips the land of precious soil. Many people also are cutting and burning areas of the forest to make charcoal, which also may cause erosion.

Charcoal-making is one of the ways limited-resource farmers in this country make enough money to feed their families, even though they know in the long run it is detrimental, Frankenberger says. They also collect palm leaves to make baskets and kill wild animals for their skins, which they sell to tourists.

"They are trying to generate money for themselves through the tourist trade, but they haven't done it in a way to effectively manage the resources, which are all renewable. We need to find out how flexible their economic strategies are and come up with viable alternatives for managing these resources," he says. "We need to learn what are the most appropriate strategies, given the resource base."

In addition to on-the-ground studies, UA researchers plan to use remote sensing equipment to give them a better look at what is happening to the land. Using satellite imaging and aerial photography, remote sensing captures an area in point and time and allows researchers to track land-use patterns and environmental changes more closely, says Charles Hutchinson, the associate director of

OALS and head of remote sensing for the project.

One of the things OALS scientists hope to find is how farming and grazing practices affect wild animals. Because cattle are such a valuable commodity in Botswana, huge fences have been erected across the desert for miles in an attempt to control disease and other problems. But during times of drought, these fences cut off water sources and grazing areas for wild animals, killing many of them.

Botswana is ahead of many other African countries in terms of research management, and officials there are excited by the project because it is a way to further train their own people, Frankenberger says.

"Our expertise will help the government. And we're not duplicating work already being done because we're going to a part of the country where very few others are working," he explains.

Botswana also is attractive to OALS because its government is stable and its economy strong. The stability and relative wealth of Botswana should assist in the successful implementation of this project.

Currently, OALS is looking for both private and public funding sources and has presented a concept paper on the project to various organizations.

The UA is working with The Desert Institute at the Turkmen Academy of Sciences in Ashkhabad, Turkmen, USSR, and with the African Studies Center and the School of International Relations at the University of California at Los Angeles.

Contact Frankenberger and Hutchinson at the UA Office of Arid Lands Studies, 845 N. Park Ave., Tucson, Ariz., 85719, (602) 621-1955.