

MOZAMBIQUE: NORTHERN INHAMBANE CASE STUDY

Prepared by Micah Hahn, Master of Public Health Graduate Student
Rollins School of Public Health, Emory University

People and Environment

Northern Inhambane province,¹ like the rest of Mozambique, has a diverse landscape that both supports and challenges the communities that live there. The small town of Vilankulos, the center of economic and tourist activity and the capital of Vilankulo district, is lined with white sand beaches that are the gateway to Bazaruto National Park, a marine reserve made up of a chain of five tiny islands that support thousands of species of fish, marine mammals, whales, turtles, and birds as well as some of the most spectacular coral reefs in the world. The districts of Inhassoro and Govuro are located just north of Vilankulo on Mozambique's largest national highway (EN1). The primary economic activity in Inhassoro is off shore drilling for natural gas by a South African mining company.² Although social investment in the form of hospitals and schools has followed the drilling, so has the threat to the Bazaruto ecosystem and the potentially profitable burgeoning tourist industry. The conservative Ndaus-speaking,³ semi-nomadic people of Govuro live on the banks of the Save River and often migrate in search of the best pastures for their livestock. And finally, to the west, is the remote, landlocked district of Mabote, an area much drier than the coastal districts that with it make up Northern Inhambane province. Although the large forested areas in the district provide timber for commercial sale, the unpaved road that links Mabote to Vilankulos is often difficult to navigate and essentially impassable in rainy season.



Livelihoods

Most of the more than 225,000⁴ people who live in Northern Inhambane rely on rain-fed subsistence agriculture to feed their families. A large number of people also raise livestock, engage in small business, and collect natural resources such as fruits and construction materials to sell. Ganho-ganho (an informal work-for-food system) and fishing are also common livelihood activities in this area, although significant changes in climate over the past few years have forced people to take on

¹ Northern Inhambane Province includes Vilankulo, Inhassoro, Govuro, and Mabote districts.

² CARE Canada and Mozambique. (2006). SEED Project Implementation Plan: First Annual Work Plan and Budget (Revised).

³ The majority of people living in Inhambane Province speak Xitswa.

⁴ Instituto Nacional de Estatística (INE). (1997). Population and Housing Census: Mozambique.

additional survival strategies and in some cases even decrease their food intake in order to compensate for the loss of crops, diseased cattle, and cyclone-ravaged cashew trees and homes.

Changing Climate

Natural Disasters and Shifting Seasons

The stunning coastline of Northern Inhambane comes with dire consequences. Poor soils that limit agricultural production and devastating cyclones like the one that ripped through Vilankulos, Inhassoro, and Govuro in February of this year affecting more than 160,000 people⁵ are two of the more conspicuous effects of a changing climate. Although spared from the lashing winds of the cyclone, Mabote suffers from a more insidious, but just as destructive extreme weather event. Pervasive drought in the interior of Southern Mozambique has had significant deleterious effects on food security in the region. Longer dry seasons and decreasing amounts of rain shifting to later in the wet season have been noticed even within the past five years.⁶ Farmers living deep in Mabote have little or no access to current weather or long-term climate information and therefore cannot plan their agricultural activities accordingly.



Impact on the Population

Food Insecurity

In the first half of last year's rainy season (October-December 2006), Southern Mozambique unexpectedly received less than 70 percent of normal rainfall for that time of the year and as a result the first crop was destroyed.⁷ In late March 2007, above normal rains allowed for a second planting but did not continue for long enough to compensate for the inadequacy of the first crop. Shortages (27 percent below the 2005/06 season production and 18 percent below the five-year average) and soaring maize prices (30 higher than last year at this time and 50 percent higher than the five-year average) have increased so much that even redistribution of the surpluses from Northern Mozambique is not sufficient to feed the 520,000 people that are currently in need of "immediate food assistance."⁸ Compounding the cycle are worries that the late start on the second crop in

⁵ USAID. (2007). Mozambique: Floods and Cyclones. Fact Sheet #2, Fiscal Year (FY) 2007. 16 April.

⁶ FEWS-NET. (2007). Mozambique Food Security Update. USAID. April.

⁷ FEWS-NET. (2007). Mozambique Food Security Update. USAID. April.

⁸ FEWS-NET. (2007). Mozambique Food Security Update. USAID. August.

March might affect this year's planting if harvesting in September overlaps with land preparation for the primary agricultural season.⁹

HIV: Expectation Plagued by Devastation

As food production dwindles, families are increasingly resorting to sending their sons and husbands to work in South African mines to earn remittances to send back to Mozambique. Unfortunately, many families report that they have seen very little money since their family member began working. In fact many say, with a sense of ill fate, that the only thing their sons and husbands bring back to Mozambique is HIV. The prevalence of HIV in Inhambane is estimated at 11.7%,¹⁰ but increasing rates and degree of malnutrition due to an inadequate diet will exacerbate the illnesses and deaths caused by HIV.



Dynamics of Vector-borne Disease

Shifting rainfall, large-scale land changes due to cyclones and floods, and co-infection with HIV^{11,12,13,14} have made prediction of future vector-borne epidemics in Inhambane uncertain and difficult to predict. Malaria is the leading cause of low birth weight in newborns, and anemia due to malaria infection is a major cause of morbidity and mortality of pregnant women in Mozambique.¹⁵ Bednet coverage in Inhambane is inadequate: a recent study in Mabote found that only one in four households own a bednet with up to eight people sharing a solitary net each night.¹⁶ It is likely that standing water left in the wake of natural disasters will increase vector breeding sites for mosquitoes that carry malaria, dengue and lymphatic filariasis as well as sand flies that transmit leishmaniasis, a disease that leaves human hosts with disfiguring and sometimes disabling skin lesions and scars.¹⁷ Even drought could

⁹ FEWS-NET. (2007). Mozambique Food Security Update. USAID. June.

¹⁰ This is the estimated prevalence rate in adults aged 15-49 years based on 2001-2004 data. Ministerio da Saude. (2005). Boletim Dam: Boletim da HIV/SIDA em Moçambique. 1(4). Agosto. Retrieved 21 September 2007 from <www.misau.gov.mz/pt/hiv_sida>

¹¹ Korenromp E et al. (2005). Malaria Attributable to the HIV-1 Epidemic, Sub-Saharan Africa. *Emerging Infectious Diseases*. 11(9): 1410-18.

¹² Whitworth J. (2006). Malaria and HIV. Center for HIV Information: University of California, San Francisco, School of Medicine. Retrieved 21 September 2007 from <hivinsite.ucsf.edu/InSite?page=kb-05-04-04>

¹³ Centers for Disease Control. (2006). The Link Between Malaria and HIV. Retrieved 21 September 2007 from <www.cdc.gov/malaria/features/malaria_hiv.htm>

¹⁴ World Health Organization. (2007). Malaria and HIV/AIDS. Retrieved 21 September 2007 from <www.who.int/malaria/malariaandhivaids.html>

¹⁵ President's Malaria Initiative. (2007). Malaria Operational Plan – FY07: Mozambique. *USAID and the U.S. Dept. of Health and Human Services*.

¹⁶ Hahn M. (2007). Community Climate Vulnerability Assessment in Moma and Mabote Districts: Preliminary Findings and Recommendations. CARE Mozambique.

¹⁷ Chaves L and Pascual M. (2006). Climate Cycles and Forecasts of Cutaneous Leishmaniasis, a Nonstationary Vector-Borne Disease. *Plos Medicine*. 3(8).

potentially increase breeding sites by necessitating water storage near homes and causing extreme drying of the soil that could prevent drainage during seasonal rains.

The Struggle to Adapt

The majority of people in Inhambane have relied on agriculture and livestock for their whole lives, but poor soils, lack of water, and destructive natural disasters have made adaptation to their changing environment necessary for survival. In Mabote, families have been living with drought for several years and have developed systems for food storage for the lean periods. Additionally, many households have large, plastic water storage vessels that were brought back by their husbands from South Africa. However, as the length of dry season continues to creep into the planting period, many families have been forced to guard the little food they can manage to grow for their own consumption rather than selling it in the markets as a source of income.

Adaptation for the coastal districts of Vilankulo, Inhassoro, and Govuro has been limited by recurrent natural disasters that force people to continually resettle, rebuild, and reseed rather than focusing on mitigation and preparation for future shocks. Adaptation efforts at the national level have included the inauguration of the National Disaster Management Institute (Instituto Nacional de Gestão de Calamidades – INGC) in 1999 with an emphasis on coordination of public, private, and non-governmental organizations during disaster recovery as well as integrated long-term management of disasters.