

CHAPTER 5

Modeling Conservation-induced Household Resettlement in Mbangweni, South Africa

Jennifer L. Jones

Centre for Environmental Studies, Geography Building 2-1, University of Pretoria,
Pretoria 0002, South Africa, jenleejones@sun.ac.za

Keywords: transboundary, GIS, community co-management, KwaZulu-Natal

Published in R. Kloppers (ed.) *Tshanini: a Glimpse into the Future of Conservation in Northern KwaZulu-Natal*, EKZN Wildlife Press, Pietermaritzburg, 2005.

Abstract

Research on household resettlement has traditionally focused on economic implications of involuntary displacement resulting from large-scale development projects (*i.e.* dams). In Southern Africa, resettling households in exchange for community development has been proposed to ensure the sustainability of biodiversity conservation areas. However, minimal research exists on the costs and benefits to local residents. I used Geographic Information Systems for spatial analysis of the community of Mbangweni, South Africa, before and after potential conservation expansion and resettlement. To explore livelihood implications, results were qualified using Cernea's Impoverishment Risks and Reconstruction model. In addition to disruption of economic livelihoods, the project is likely to have significant social implications for the community and throughout the entire region.

Introduction

Biodiversity conservation and protected area management in South Africa have moved from historical forced removals of local people to participatory schemes with enhanced equity for local people. During the country's colonial and Apartheid eras, communities were forcibly evicted from traditional lands and involuntarily resettled elsewhere, often without compensation, to make way for 'fortress' parks. Post 1994 democracy, new land reform legislation allowed displaced communities to seek restitution. Land claims against parks resulted in local communities receiving reparation for past injustices. In parts of national parks, title was restored to local communities, although the land was still used for conservation (Robins, 2001; Ramutsindela, 2002). However, communities were empowered with increased benefit sharing and decision making powers.

In addition to biodiversity, current South African conservation focuses on protected areas as tools for rural poverty alleviation. 'Conservation and development' are seen as interdependent on one another, with conservation spurring local development, and a subsequent increase in the sustainability of protected areas that provide the economic benefits (Jones, 2005). In particular, nature-based tourism is cited as an engine for economic development via community-based initiatives. Community projects are promoted as win-win: local economic stimulus from tourism-related jobs and biodiversity protection by communities whose new livelihoods are dependent on a healthy resource. Community nature-based tourism has been heavily endorsed in South Africa by government and multilateral development agencies, but there have been few unqualified successes. Criticisms of their efficacy include

questionable long-term economic sustainability, negligible biodiversity protection, revenue leakage away from local communities, heavy dependence on a fickle tourism industry, and a trend to overemphasize ecology and not focusing sufficiently on affected communities (Loon & Polakow, 2001; Mulholland & Eagles, 2002; Adams & Infield, 2003; Kiss, 2004).

The case study presented here analyzes *a priori* potential voluntary resettlement of a community from part of their land to make way for expanded conservation. In exchange for ceding land to conservation, the community could potentially receive access to agricultural land currently located inside a park, increased jobs and revenue sharing from future nature-based tourism enterprises, funding for basic development (schools, water taps, etc), and a co-management agreement over the new conservation area. The community would not give up title to the land, but would concede rights to access, settle, develop, or otherwise use the land in a manner unsupportive of conservation. To explore the implications of expanded conservation and resettling households, a multi-disciplinary approach was used to examine both quantitative and qualitative impacts. The primary aim of this paper is to quantitatively assess and compare several possible resettlement scenarios, and then qualitatively examine the social impacts of resettlement in general. The approach and results presented here differ from most literature in that the analyses were conducted before the completion of resettlement negotiations and implementation; the conclusions presented are predictive rather than an *a posteriori* summary. First, spatial analyses using Geographic Information System (GIS) were conducted on the locations of households, community infrastructure, and livelihood resources before

and after potential resettlement. Cernea's Impoverishment Risks and Reconstruction Model was then used to explore potential social and economic impacts of resettlement on households, the community as a whole, and the larger study region. I begin by presenting a brief review of resettlement research.

Perspectives on community resettlement research

Most resettlement literature concerns involuntary or forced displacement resulting from large-scale development programs (*e.g.* dams and mining). Displacement schemes often lead to an increased risk of impoverishment stemming from altered livelihoods, lost natural resource access, and disruption of cultural and social services (Cernea, 1997). Research of development-induced resettlement has traditionally focused on the economic benefits of large-scale projects and the cost effectiveness of acquiring new land for community relocation. In the late 1990s multilateral institutions began conducting *a priori* social impact assessments to appraise non-economic impacts on local communities. Building on extensive research for the World Bank, Cernea (1997) developed the Impoverishment Risks and Reconstruction (IRR) model. The model differs from most development related exercises by exploring the collective and cumulative social impacts of displacement and reconstructions on local communities; it is not a simplified cost-benefit analysis. The IRR model examines eight major resettlement risks: landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, lost access to common property resources, and social disarticulation. In an attempt to qualify impoverishment risks, it builds on four distinct, but interrelated functions:

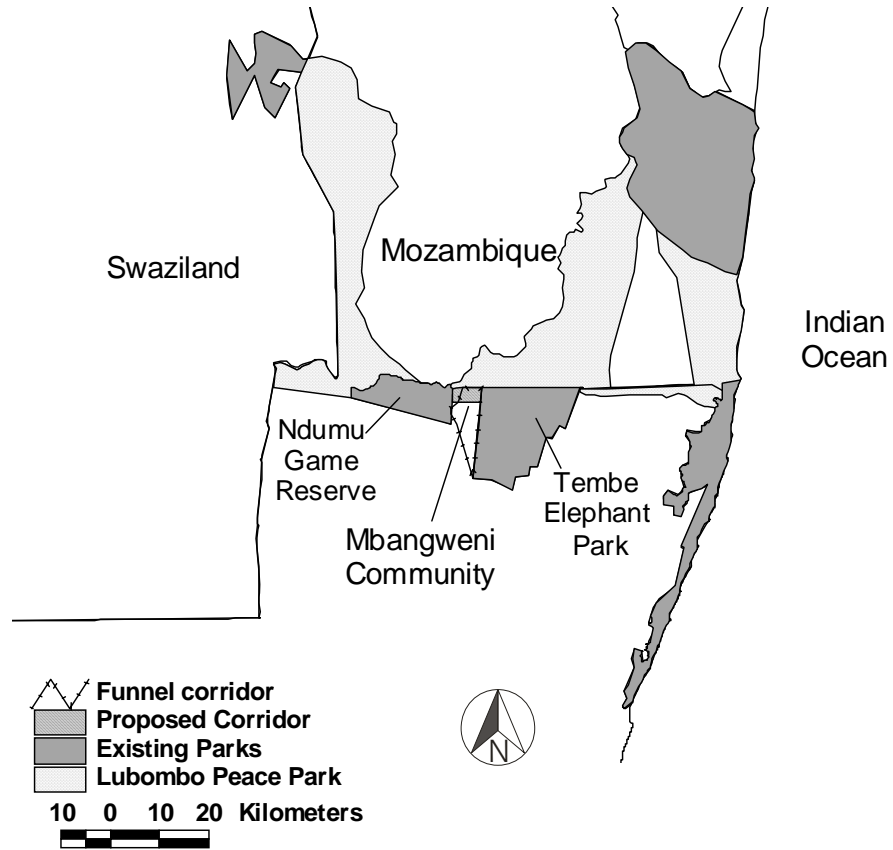
predictive, diagnostic, problem-resolution, and research capacity (Cernea, 2002). While the IRR model was designed for the World Bank to analyze involuntary resettlement resulting from large-scale development programs, it has since been used to examine other involuntary resettlement schemes.

Resettlement that is either voluntary (i.e. negotiated or approved by residents) or conservation-induced remains poorly investigated. Research in Central Africa focused on involuntary displacement from pristine natural areas to create new national parks (Schmidt-Soltau, 2003; Cernea & Schmidt-Soltau, in press). However, those resettlement efforts were similar to large-scale development projects in that local people did not support the end goal. While nature reserves and parks are thought of as wild places, the conservation of resources via protected areas is increasingly marketed in South Africa as a tool for local economic development. Conservation-induced resettlement enticements are similar to large development projects such as dams: it is good for the majority (biodiversity protection), while the resettled minority will be provided direct benefits (job, co-management, revenue sharing). Thus, research on negotiated and/or voluntary resettlement is needed as conservation-induced displacement is expected to grow in Southern Africa with the development of international transboundary parks that require resettling large numbers of people (Bice, 2004).

The study area

The community of Mbangweni is situated in northern KwaZulu-Natal, South Africa (Figure 1). Mbangweni is part of the Tembe Traditional Authority (successor

Figure 1. Northeastern KwaZulu-Natal and the Lubombo Peace Park.



to the Tembe Kingdom) that historically encompassed people on both sides of the South African-Mozambique border, stretching from the Lubombo Mountains to the Indian Ocean. Today Mbangweni encompasses an area of 46km² bordered on three sides by Ndumu Game Reserve, Tembe Elephant Park, and Mozambique. The international border is officially demarcated and fenced but remains porous with people and goods flowing in both directions in support of shared kinship, cultures, and co-dependent livelihoods. Most of the 118 households (677 residents) in Mbangweni pursue livelihoods dependent on subsistence agriculture, the sale of locally harvested natural resources, government grants (pension and childcare), and remittances from family members working in urban centers. Household cash is spent on basic foodstuffs, transportation, healthcare (including traditional medicine), and school fees. There are no natural water sources, piped water, electricity mains, sanitation, or healthcare facilities in the community. Households typically have a small dry land agricultural plot at their homestead, but yields are low due to water scarcity and poor, sandy soils. Wild fruit and trees supplement nutritional requirements as well as provide income through the production of wild products (Cunningham, 1988). Energy needs are met by local fuelwood collection and homesteads are constructed using traditional materials and methods. The community is accessed by a single-track dirt road that runs 22 km south to the main regional tar road. The prevalence of HIV/AIDS throughout the region is estimated around 38%, one of the highest in the country (Hlongwe, 2003).

Annual population growth in Mbangweni between 1996 and 2001 (extrapolated from government censuses) was 2.87%, well above the South African

average of 2.01%. New households are growing at a rate of 6.8% *p.a.*, partly due to a decline in the average number of persons per household from 6.7 to 5.4 (-4.22% per year). A decline of people per household results in decreased resource use efficiency as land for homesteads, materials for building, and wood for cooking and heating are partitioned among fewer household members (Liu, Daily, Ehrlich & Luck, 2003). It is difficult to model future population trends due to the massive prevalence of HIV/AIDS. Understanding local demography is complicated by the underreporting of mortality due to the epidemic and unknown effects of future prevention/treatment strategies (Statistics South Africa, 2005). Mbangweni is likely to experience a significant decline in yearly population growth, but real numbers and the growth rate are not anticipated to be negative.

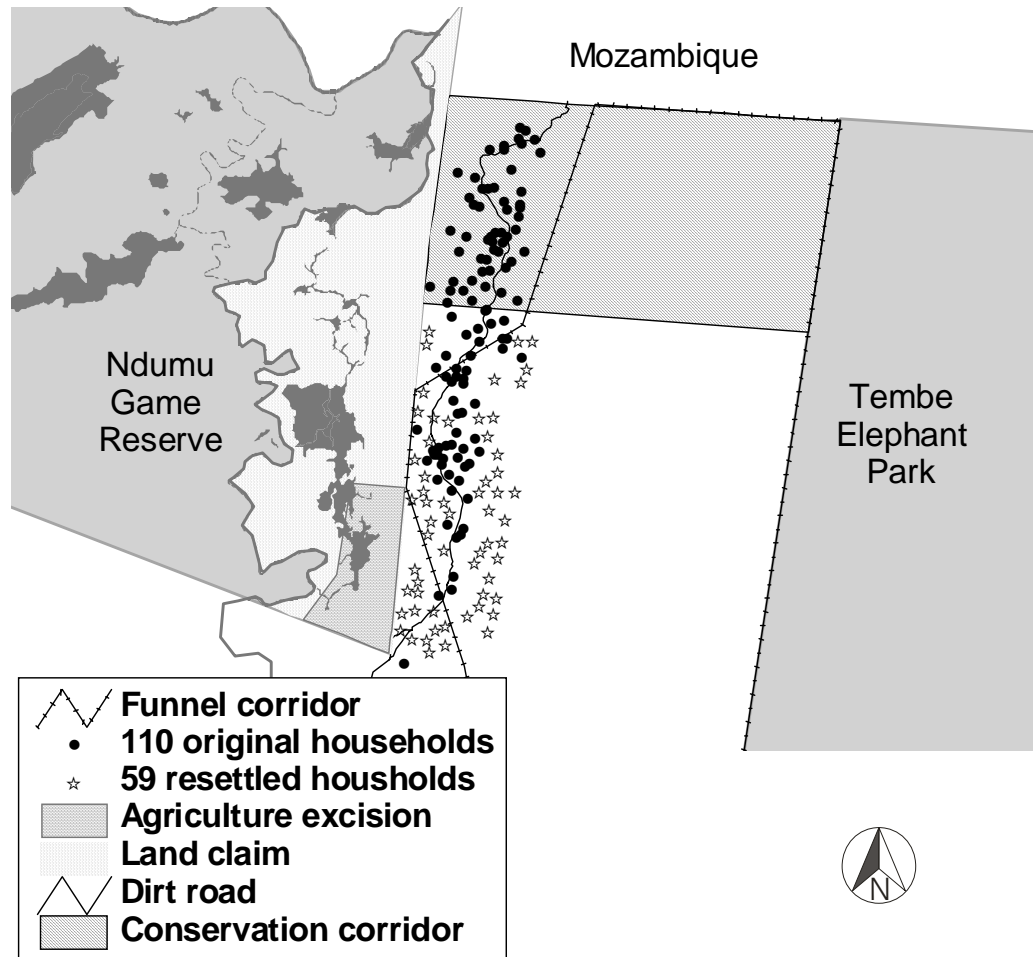
Mbangweni's social, nutritional, and economic livelihoods are directly linked to neighboring Mozambique (Jones, 2005). Many households have an additional agricultural plot on productive floodplain land located several kilometers inside Mozambique. Bush meat is actively traded throughout the region, most of which probably comes from southern Mozambique. Women from Mozambique sell wild fish to Mbangweni women, who resell it at South African markets. The fish trade also supports the informal South African taxi economy, which transports the women and fish along the 22km² dirt road to regional markets located along the tar road. Informal markets located on the border provide access to goods and service for both countries in lieu of formal shops. Taxis transport South Africans to the border market and Mozambicans from the border to other shops, healthcare, and services located in South Africa. Residents routinely cross the porous border in both directions to visit

friends and family. More than 26% of Mbangweni households regularly conduct social visits to Mozambique (Jones, 2005).

Conservation Conflict: past injustices and the path to future equity

Members of Mbangweni historically resided on land that is now inside Ndumu Game Reserve (Figure 2) (Jones, 2005). Established in 1924, the state-owned park invoked racially discriminatory laws and practices between the 1940s and 1960s to forcibly remove local people (Tong, ca. 2002). In contrast, Tembe Elephant Park was created during the late 1980s in consultation with the Tembe tribal authorities who agreed for some residents in the southern portion of the park to resettle outside the soon-to-be-fenced park. After democratization in 1994, and subsequent land restitution legislation, the Mbangweni community filed a land claim against Ndumu Game Reserve for all land east of the Pongola River inside the park. The community maintained that not only did they regularly access the land for natural resources, but some community members and/or their ancestors had resided on the land. The managing conservation agency, Ezemvelo KwaZulu-Natal Wildlife, agreed that Mbangweni livelihoods were dependent on floodplain resources inside the park, but denied that community members ever resided on Ndumu land. The Department of Land Affairs settled the land claim in 2000. The settlement acknowledged the Mbangweni community as rightful owners of the land, and restored full tenure and ownership to the community. However, the settlement required the land to continue

Figure 2. Mbangweni settlement pattern before and after resettlement.



to be fenced for conservation under the management of Ezemvelo KwaZulu-Natal Wildlife (Tong, ca. 2002). The parties agreed to negotiate a separate management agreement to determine future access rights, revenue sharing, and possible co-management. The community was also afforded the right to pursue the excision of a small piece of land from Ndumu Game Reserve to convert to agriculture in exchange for a portion of community land to become conservation (Tong, ca. 2002). This land exchange could require household resettlement and is the focus of this study.

An alternative to the agreement would be to excise 200 ha (2%) of highly productive riverfront agricultural land from the southeast corner of the Ndumu Game Reserve; in return, Mbangweni would allow 1650 ha (36%) of its communal land – marginal for agriculture- to be managed as a fenced conservation corridor linking Ndumu Game Reserve and Tembe Elephant Park (Felton & Hanekom, 2000). Ezemvelo KwaZulu-Natal Wildlife seeks to join the two parks to allow the overstocked elephant population in Tembe to disperse to Ndumu. The joined Tembe-Ndumu complex would also drop its northern fences to become part of the transboundary Lubombo Peace Park linking reserves in South Africa, Mozambique and Swaziland (Figure 1). The goal of the mega-park is to enhance biodiversity conservation, provide for elephant migration, and support economic development in neighboring communities through nature-based tourism. The Mbangweni conservation corridor linking Tembe and Ndumu could be administered by a co-management agreement or as a community conservation project. Ezemvelo KwaZulu-Natal Wildlife would probably provide ecological management, but the community could be granted rights to pursue nature-based tourism inside the corridor. The exact

size, shape, and location of a potential corridor must still be negotiated, but two proposed alternatives are examined here. Both of these options require a portion of Mbangweni households to be resettled so that a conservation corridor devoid of human settlement could be created.

Methods

Most resettlement research and use of the Impoverishment Risks and Reconstruction model has focused on involuntarily resettlement. Here a complementary approach is used to quantitatively and qualitatively analyze potential voluntary resettlement of the Mbangweni community. First, spatial analyses were conducted in a Geographic Information System (GIS), including comparisons of pre and post resettlement distances to natural, social, and economic resources. Global Positioning System (GPS) coordinates were obtained for all 118 households in Mbangweni. Of these, eight households were excluded from analyses because they were situated outside recognized community boundaries. Distances were calculated from each household to other households, the nearest gate into Ndumu Game Reserve, the nearest route to Mozambican border, the possible agricultural excision, the dirt road through the community, the main tar road south of the community, the Pongola River, and the existing school and shop. The spatial analyses were then qualified using the Impoverishment Risks and Reconstruction Model. Each of the IRR risks was examined for Mbangweni residents, neighboring communities, conservation interests, and other local actors.

In the case of conservation corridors, research is lacking on determining viable minimum dimensions, but bigger is thought to be better for elephants and general biodiversity conservation (R. Guldmond, personal communication, 1 October 2004). To conduct a modeling exercise two likely options were identified. The first alternative, proposed in an initial Ezemvelo KwaZulu-Natal Wildlife assessment, is a 1650 ha rectangle bounded by the Mozambique border to the north (Figure 2) (Felton & Hanekom, 2000). The second alternative, from an initial Peace Parks Foundation proposal, identified a large funnel shape with a narrow funnel mouth starting at Ndumu Game Reserve and widening to a large base encompassing the entire western boundary of Tembe Elephant Park (Figure 2) (PPF, 2002). The funnel's narrow mouth would join to Ndumu Game Reserve south of most Mbangweni households, therefore requiring little or no resettlement. However, several obstacles are inherent in this alternative. Such a large corridor would require incorporating land from other communities and complicate negotiations. In Mbangweni, the funnel would divide the community in two; the narrow mouth would be bordered on the north and south by human settlements that might disrupt animal migration. Lastly, the extensive north/south human and vehicle traffic along the dirt road stretching from the tar road all the way into Mozambique would be disrupted. Solutions to the human traffic issue would have to support or substitute the social and economic flows without impairing the ecological functions of the funnel mouth. Comparing the two alternatives, the rectangular corridor proposed by Ezemvelo KwaZulu-Natal Wildlife or a similar variant, seems the most likely of the alternatives to succeed and was, thus, used for analysis.

Modeling resettlement in GIS: quantitative impacts of resettlement

Past Mbangweni settlement patterns have been influenced by access to infrastructure, primarily roads and water, which explains why there is no settlement in the eastern region bordering Tembe Elephant Park. Of the 110 households analyzed in Mbangweni, 59 (54%) would require resettlement out of the potential rectangular conservation corridor. These were modeled for resettlement around the remaining 51 fixed households not requiring resettlement. An average of 148 meters between households was computed by calculating the distance from each household to its nearest neighbor, then taking the mean of these minimum distances. Assuming circular homesteads, the average radius, including a vegetation buffer, was 74 meters (half the distance to the nearest households). To calculate homestead area, the 74-meter radius was used to create non-overlapping homestead perimeters in ArcView (Thiessen polygons). Areas were calculated based on each homestead's unique perimeter, and then the mean was calculated for all 110 households resulting in an average parcel size of 1.38 ha. Buffers of 74-meters were created around the 51 fixed households so that resettled households would not overlap with existing homesteads. Next, the 59 resettled household locations were randomly generated around the existing homesteads within the following criteria: the new resettled households also had a 74 meter buffer which could not overlap the fixed homesteads, and new homesteads had a maximum distance of 930 meters to the dirt road (based on the average of 110 households before resettlement). Distance to the road was used since current settlement pattern has clearly grown organically adjacent to the road. These

spatial criteria provide a conservative resettlement pattern since they use previous averages to generate new minimum distances.

Once all 110 households were distributed in the community, possible impacts were examined, based on new proximities from households to other features by comparing average distances before and after resettlement. Averages linear distances were calculated from the 110 households to the dirt road running through the community, the existing primary school and shop (neither lie within the potential conservation corridor), the most direct route to the Mozambique border, the nearest access gate into Ndumu Game Reserve (of three existing gates), the Pongola River inside Ndumu River (calculated as the sum of the distance from homesteads to an Ndumu gate and the distance from that gate to the river), the most direct route to the possible agricultural excision, and the regional tar road south of the community. For post resettlement analysis, the distance to an Ndumu gate and Pongola River access were measured from homesteads to the site of a likely new access gate from the excision into the park. Table 1 compares the distances before and after resettlement.

By modeling future household locations based on past settlement patterns the modeling exercise provided a plausible scenario of community settlement. However, this did not include the influence of new community infrastructure negotiated as a product of the land exchange. New schools, water taps, shops, and roads could alter new settlement patterns as households voluntarily settle in proximity to new features. But rather than modeling future homestead settlement around new infrastructure, these results could be used to decide where to place new infrastructure based on

Table 1. Average distance in meters to community features before and after resettlement.

| | <u>Before</u> | <u>After</u> |
|---------------------------------|---------------|--------------|
| Nearest neighboring household | 148 | 170 |
| Dirt road | 210 | 310 |
| School/shop | 1454 | 2176 |
| Mozambique border | 3009 | 5425 |
| Nearest Ndumu Game reserve gate | 1146 | 1134* |
| Pongola River | 2024 | 2040* |
| Agriculture excision | na | 1134 |
| Tar road | 15,554 | 14,725 |

* This assumes new access into Ndumu constructed at the excision.

historic settlement patterns. Building on the spatial analyses, the IRR model was used to qualify resettlement impacts.

Qualitative impacts of resettlement: the IRR model

Resettlement will most directly impact the residents of Mbangweni, but other South African communities and Mozambicans north of the border will also be impacted. Here the focus is on Cernea's (1997) eight risks for all potentially affected people. Building on the IRR assessment, a ninth locally relevant risk was incorporated that will affect the outcome of any resettlement and conservation project, namely, the collateral impact of HIV/AIDS.

Landlessness (including the social and spiritual value of land)

The existing settlement pattern developed in accordance with local cultural and social traditions, natural resource access, and infrastructure limitations. Most homesteads are located in a north/south pattern, with the dirt road as the main attractor. Homesteads cover approximately 1.38 ha and are separated from each other by trees and vegetation, allowing for privacy. Residents have noted an increase in the number of new households, which was accompanied by a perception of crowding in the community, but not a fear of resource scarcity due to the increased population (Jones, 2005). The 110 homesteads currently occupy 3.2% of the community's land, and would consume 4.8% of the communal land after the 1650 ha corridor is ceded to conservation.

The land exchange would result in a loss of approximately 1650 ha (34%) of Mbangweni land in exchange for 200 ha of productive agriculture land excised from Ndumu Game Reserve, a net loss of 31% of Mbangweni land. Depending on negotiations, the community would not lose title to the land, but forfeit certain access and development rights in favor of conservation. Land for homesteads has not been a limiting factor in Mbangweni development, nor does a land deficit appear to be a serious risk after resettlement. Spatial analyses demonstrated that the 59 resettled homesteads would easily fit within modeling parameters based on current settlement and demographic patterns. For the social, cultural, and spiritual value of land, a participatory corridor-planning exercise would help identify significant sites (*e.g.*, ancestors' graves and rain making areas), which would either need to be excluded from the corridor or require that concessions be granted to visit and conduct traditional ceremonies at sites that might become fenced.

Joblessness (including loss of income and subsistence activities)

The proposed conservation corridor would divide South African and Mozambican communities and disrupt important economic activities on both sides of the border. Some people would benefit from access to increased jobs, income, and economic opportunities; others will have decreased or lost access (Jones, 2005). Women in both countries dependent on the fish trade could suffer lost opportunities. Taxis that service the fish trade and provide transport to residents in both directions would lose part of their customer base. If a formal transport system was established through the corridor to service local needs, the taxis could benefit from an authorized

route through the corridor to and from the border. However, residents have historically walked across the border and paying for taxi transport through the conservation corridor might cause increased financial hardship.

During the late 1990s, Mbangweni was a well-known hotspot of criminal cross-border smuggling. A joint 2000-2001 military and police task force on both sides of the border helped stem the flow of stolen vehicles from South African and illegal firearms left over from the Mozambique civil war. More recently, anti-smuggling efforts have targeted counterfeit clothing, cigarettes, and illegal drugs (A. Beukes, personal communication, March 20, 2003). The level of participation of Mbangweni residents in illegal border activities is unknown, but it is likely that some community members, particularly taxi operators, benefit by approving and/or facilitating the smuggling. Aside from legal and ethical implications, disruption to all economic activities needs to be addressed and incorporated into resettlement plans.

Nature-based tourism could provide much needed jobs for the community and a positive economic multiplier effect for other local households. However, the economic sustainability of nature-based tourism, particularly community-based ventures, is questionable (Adams & Infield, 2003; Kiss, 2004). Recently a prominent nature-based enterprise operating in Ndumu shut down after failing to make a profit during its 10-year operation (Poultney & Spenceley, 2001). Ezemvelo KwaZulu-Natal Wildlife acknowledged that many of the community-based nature-based tourism ventures in the region have not achieved long-term sustainability, but attributed the failure to indigenous social, cultural and economic organization (Goodman, James & Carlisle, 2002). If not addressed, *a priori*, differing

epistemologies between the community and conservation authorities could contribute to hostility and interfere with negotiations and project success.

The 200ha agricultural excision could provide an additional source of household income from products sold at regional markets. An economic assessment of the excision determined that each if household utilized 0.8 ha (based on regional averages), they could earn R3,500 per year (Moodley, n.d.). A lack of reliable data on Mbangweni's household incomes makes it difficult to determine the contribution this would add to household livelihoods. The South African Poverty Fact Sheet suggests that 70-80% of households in the region have a yearly income of approximately R21,672 (Fenske, 2004). Without including forgone economic opportunities listed above, the agriculture excision could provide a 16 % increase in household income.

Homelessness

Homelessness is not a major risk faced by Mbangweni households. As previously identified, a lack of land for homesteads is not anticipated and most buildings on homesteads are constructed from natural materials readily available on the communal land. Negotiations would probably include compensation for resettled households. There could be a risk of conflict if the compensation for resettled households allows them to construct superior homesteads (*i.e.* permanent brick structures), if existing households receive no direct benefit. Therefore, while most housing structures are very basic in construction, and housing standards could rise

with increased wealth in the region, a lack of land and materials to meet current basic housing standards in the region does not pose a large risk.

Marginalization (including the loss of traditional rights and status)

The risk of marginalization stemming directly from resettlement varies. All homesteads would continue to reside on Mbangweni land. No household would be resettled in external communities, often a source of marginalization. One possible source of risk would be the arrival of new settlers attracted by increased development and economic opportunities. Immigrants who bring along social, economic, or other sources of power and influence could disrupt the existing structure.

The greatest risk of marginalization might come from a co-management agreement with conservation authorities. Equitable co-management arrangements are meant to share power, responsibilities, and benefits in an on-going adaptive manner (Eriksen, 1999; Berkes, 2004). However, other co-management agreements throughout the world have tended to prioritize conservation goals over local socio-economic needs (Whande, Kepe & Murphree, 2003). While Ezemvelo KwaZulu-Natal Wildlife has shown a willingness to increase partnerships with local stakeholders in the past, results have varied. A Local Conservation Board was previously created for the Tembe-Ndumu Complex to increase local partnerships, devolve conservation decision-making, and to help administer levy benefits (collected from gate entrance fees) mandated for community development. However, conservation authorities have bypassed the board's decisions at will and acted unilaterally on previous occasions (Lockett, Mkhize & Potter, 2003).

Food insecurity

There is minimal risk for increased food insecurity for Mbangweni residents, but disrupted or increased risk for residents of nearby local communities. The agricultural excision could increase Mbangweni's food security by direct benefits, as well as increased income from selling excess agricultural products at regional markets. Access to clean drinking water will improve if negotiations include a network of communal taps. The cost of purchasing water from communal taps is unlikely to be a major limiting factor since the distance of carrying water from taps to households has limited consumption in the region, not cost (M. Nxumalo, personal communication, 11 Feb 03). Access to water for agriculture would increase due to the proximity of the excision to the Pongola River floodplain. Mbangweni would lose access to some forest products, particularly wild fruits, which would be fenced inside the corridor. Although two thirds of the forest would remain, an ecological assessment is needed to quantify the impact of lost fruit trees to nutrition and income. A disruption to the bush meat trade across the Mozambique border could impact on local diets and the livelihoods of Mozambican traders dependent on the meat and income. The conservation corridor could disrupt the trade of fish from Mozambique to South Africa. This is an important source of cheap protein and income for the region on both sides of the border. Mozambique residents would also lose access to South African foodstuffs sold in shops and at the border market.

Loss of access to common property resources

Under the land exchange presented here, the community would lose open access to more than one third of its land. Negotiations might include some community access to the land after it becomes fenced for conservation, particularly for culturally important areas. Natural resource utilization in the conservation corridor would probably be highly regulated with minimal resource harvesting allowed. Residents would be dependent on resources within the remaining two thirds of the community. It is difficult to quantify the ability of the remaining communal land to provide resources for the community. Access to wild fruits and the meat of wild birds would be diminished, but the communal area would provide adequate land for homesteads and fuelwood for current and future growth patterns. A decrease in grazing land would affect Mbangweni livestock owners, as well as outsiders who are granted permission to graze on the communal land.

Increased morbidity and mortality

Resettlement negotiations could help decrease morbidity and mortality for Mbangweni residents, but cause an increase for others. Development and infrastructure benefits in Mbangweni could include improved sanitation, clean drinking water, increased visits by mobile health clinics, and improved nutrition from expanded agriculture and raised incomes. If a nonporous conservation corridor were developed, Mozambicans would lose access to health facilities in South Africa, as well as income from selling fish and bush meat and trading at local markets.

Social disarticulation (including changes in community structure by age, gender, language, etc.)

Social disarticulation is a fracture in the 'existing social fabric' that disrupts social organizations and relationship in a community; patterns of community self-organization and social networks destabilize (Cernea, 1997, p. 1575). As social patterns become disjointed, there is often a loss of the social capital that is indirectly and directly produced from the existing order. In Mbangweni, the risk of social disarticulation would directly result from resettlement of households and indirectly from inequitable benefit sharing. The conservation corridor might sever social linkages between Mbangweni and Mozambique and the resettlement of 59 households could disrupt social patterns. Women are most at risk as the local culture and planners reinforce patriarchal systems that impact women, including: resettlement compensation paid to male heads of households, male control over expanded agricultural income, strengthening of men's control over resources, and the fragmentation of social units felt mostly by women (de Wet, 2005).

Existing unequal power structures often result in the inequitable distribution of conservation benefits. Residents with traditional political power (*i.e.* the chief and his council) and those with economic power (*i.e.* local taxi drivers) are able to control access to new jobs, household placement, and resource access after resettlement. Community nature-based tourism projects often produce minimal cash benefits, and these are accrued by the local power elite (Berkes, 2004; Kiss, 2004). Other residents with skills relevant to the nature-tourism industry, such as fluency in English, will have a competitive advantage. Language skills have usually been acquired by

households with enough money or power to educate their children in secondary schools located outside of the community. Individuals with driver's licenses, expensive due to training and permit fees, will also be well placed for tourism jobs. Thus, current social patterns could be influenced by access to and distribution of benefits.

The Collateral Impact of HIV/AIDS

HIV/AIDS will not directly affect a resettlement scheme, but it will have major impacts on the success and long-term sustainability of all resettlement components. The prevalence rate for the Maputaland region is estimated to be one of the highest in the country, and is probably above national South African estimates that range between 18.5% and 37.5% (Dorrington, Bradshaw & Budlender, 2003; Hlongwe, 2003; Rehle & Shishana, 2003; UNAIDS, 2004). The links between HIV/AIDS and poverty are well documented. Poverty increases the risk of acquiring HIV/AIDS and the disease in turn increases poverty at the household level (Piro, 2001; Fenton, 2004; Singh, 2004). Households lose income as sick or deceased family members no longer work, collect pensions, or send remittances (HSRC, 2002). Limited household resources are diverted to healthcare, including traditional medicine, and expensive burial services. Natural resource exploitation results from over harvesting of medical plants, wood for coffins, and increased poaching (Mauambeta, 2003; Siteo, Kayambazinthu, Barany & Anyonge, 2004). The resource base is threatened by deepening household dependence on local resources that are increasingly harvested unsustainably due to lost agricultural and ecological

knowledge (Oglethorpe & Gelman, 2004; Siteo et al., 2004). Changes in household size and composition result in increased dependency ratios, lost family labor for subsistence activities, and increased numbers of orphans (Gillespie & Kadiyala, 2005).

The cumulative impact of HIV/AIDS on individuals and households in Mbangweni will threaten the viability of community participation in nature-based tourism operations and co-management arrangements. Capacity building and training for community members to work in conservation-related positions will be continually lost due to high attrition. Traditional leadership and community boards will also suffer lost capacity. Ezemvelo KwaZulu-Natal Wildlife is currently struggling with the impact of the disease that has resulted in 16-fold increase in staff disability and death between 1999 and 2003 (Mauambeta, 2003). As community members are unable to fill conservation and tourism jobs, there is a risk of attracting outsiders, which increases the risk of community disarticulation and/or marginalization.

The community could sink deeper into poverty and become increasingly desperate. With dwindling capacity, leadership, incomes, and health, there is a risk of the community blaming conservation for the situation. HIV/AIDS is heavily stigmatized in South Africa, and local residents are unlikely to acknowledge the disease for the deteriorating situation. A history of forced removals from parks and years of waiting for the land claim to be resolved combined with forgone communal land and household resettlement could compound to make conservation a likely target for community frustration and helplessness. If not addressed, the situation could lead

to a risk of conflict by a community who has vandalized park resources in past efforts to vocalize unhappiness with the status quo.

Conclusion

Conservation expansion throughout Southern Africa is likely to require voluntarily resettling thousands of local people in the future. Yet, research continues to focus on involuntary displacement post de facto, while ignoring serious implications of voluntary community resettlement. An integrated approach using quantitative GIS analyses and a qualitative IRR assessment provided a holistic method for *a priori* resettlement research.

Construction of a conservation corridor and subsequent resettlement of Mbangweni households will have both positive and negative impacts. In some cases, the average distance from households to certain resources such as the river or border crossing will increase, while distances to resources such as the tar road markets to the south will decrease. Due to its geographic location and the nature of local livelihoods, the impacts will not only be felt by local residents, but also by Mozambicans and South Africans throughout the region. While only 59 households might need to be resettled, thousand of people in the region could be affected by a change in the status quo of routine travel between the Mozambique border and the tar road region 22 km to the south. Analysis using the IRR model revealed the importance of understanding both the social and economic elements of resettlement and reconstruction. A conservation corridor that restricts travel through the region could disrupt local sources of income; fish traders might lose access to fish and the ability to transport it

from the border to markets to the south. Taxis could lose the business of ferrying the fish traders, but might potentially negotiate rights to transport people through a new conservation corridor. Social disarticulation, or changes in the community's social fabric and the resulting lost social capacity, could lead to increased social stress and conflict within and without the community. Without mitigation, HIV/AIDS is likely to alter demographic patterns, increase and deepen local poverty, possibly resulting in degradation of natural sources, and result in lost conservation and community capacity and knowledge transfer.

Beyond direct impacts, the implementation of a conservation corridor and potential co-management agreement could have numerous indirect and less tangible impacts on local people. Community stability will be highly dependent on the success of infrastructure development incentives, particularly nature-based tourism schemes. Tourism is a fickle industry and expanded conservation in the region will not necessarily attract additional visitors and result in economic sustainability (Aylward, 2003). Tourism projects, resettlement schemes, and co-management agreements all require an adaptive and long-term commitment of at least five to ten years (Eriksen, 1999; Berkes, 2004). Expectations of co-management are often unrealistic and heavily dependent on a common vision of all participants for success (Borrini-Feyerabrand, 2004). A perceived lack of benefits by the community, regardless of cause, will threaten sustainability and could result in conflict. The conservation corridor, household resettlement, and community infrastructure development require comprehensive planning, local participation, community empowerment and decision-making, and consideration of the social and economic impacts to the larger region.

Acknowledgements

I would like to acknowledge the people of Mbangweni and the Tembe Traditional Authority. I also would like to thank Professor Albert van Jaarsveld, University of Stellenbosch, for his valuable support and Ezemvelo KwaZulu-Natal Wildlife for logistical assistance. Funding was provided by the South African National Research Foundation, the Southern African Millennium Ecosystem Assessment, and the Centres for Environmental Studies and Indigenous Knowledge at the University of Pretoria.

References

- Adams, W. M., & Infield, M. (2003). Who is on the gorilla's payroll: claims on tourist revenue from a Ugandan national park. *World Development*, 31(1), 177-190.
- Aylward, B. (2003). The actual and potential contribution of nature tourism in Zululand: considerations for development, equity, and conservation. In B. Aylward & S. Lockett (Eds.), *Creating a Nature Tourism Economy: A Multicriteria Analysis of Options for Policy, Institutions, and Management* (pp. 3-40). Washington D.C.: The World Bank.
- Berkes, F. (2004). Rethinking community-based conservation. *Conservation Biology*, 18(3), 621-630.
- Bice, J. E. (2004). *Great Limpopo: talk of the transfrontier (official newsletter of the Great Limpopo Transfrontier Park)*. Stellenbosch: Peace Parks Foundation and the GEF/World Bank.
- Borrini-Feyerabend, G., Pimbert, M., Farvar, M. T., Kothari, A., & Renard, Y. (2004). *Sharing Power: Learning by Doing in Co-management of Natural Resources Throughout the World*. Tehran: IIED, IUCN/ CEESP/ CMWG, Cenesta.
- Cernea, M. M. (1997). The risks and reconstruction model for resettling displaced populations. *World Development*, 25(10), 1569-1587.
- Cernea, M. M. (2002). *A Conceptual Model for Involuntary Population Resettlement: Impoverishment Risks and Reconstruction (IRR)*. Manila.
- Cernea, M. M., & Schmidt-Soltau, K. (in press). National parks and poverty risks: policy issues in conservation and resettlement. *World Development*.

- Cunningham, A. B. (1988). Nutritional value of palm wine from *hyphaene coriacea* and *phoenix reclinata* (acrecaceae). *Economic Botany*, 42(3), 301-306.
- de Wet, C. (2005). Development-induced displacement and resettlement. In M. Gibney & R. Hansen (Eds.), *Global Migration: an Encyclopedia*. Santa Barbara: ABC-Clio.
- Dorrington, R., Bradshaw, D., & Budlender, D. (2002). *HIV/AIDS Profile in the Provinces of South Africa: Indicators for 2002*. Cape Town: Centre for Actuarial Research, University of Cape Town.
- Eriksen, J. H. (1999). Comparing the economic planning for voluntary and involuntary resettlement. In M. M. Cernea (Ed.), *The Economics of Involuntary Resettlement: Questions and Challenges*. Washington, D.C.: The World Bank.
- Felton, I., & Hanekom, C. (2000). *Initial Assessment of the Environmental Impact on the Excision of Land from the East Boundary of Ndumu Game Reserve, in Respect of the Resolution of the Land Claim by the Mbangweni Community*. Pietermaritzburg: Ezemvelo KwaZulu-natal Wildlife.
- Fenske, J. (2004). *Fact Sheet: Poverty in South Africa*. Pretoria: Human Sciences Research Council.
- Fenton, L. (2004). Preventing HIV/AIDS through poverty reduction: the only sustainable solution? *The Lancet*, 364(25 September), 1186-1187.
- Gillespie, S., & Kadiyala, S. (2005). *HIV/AIDS and Food and Nutrition Security: From Evidence to Action*. Washington, D.C.: International Food Policy Research Institute.

- Goodman, P. S., James, B., & Carlisle, L. (2002). Wildlife utilization: its role in fostering biodiversity in KwaZulu-Natal. In S. M. Pierce & R. M. Cowling & T. Sandwith & K. MacKinnon (Eds.), *Mainstreaming Biodiversity in Development: Case Studies from South Africa* (pp. 21-32). Washington D.C.: The World Bank.
- Hlongwe, M. (2003). *Umkhanyakude Local Economic Development Initiative*. Durban: Haley Sharpe Southern Africa (Pty) Ltd.
- HSRC (Human Sciences Research Council). (2002). *The Impact of HIV/AIDS on Land Issues in KwaZulu-Natal Province, South Africa*. Pretoria: Integrated Rural & Regional Development.
- Jones, J. L. (2005). Transboundary conservation: development implications for communities in KwaZulu-Natal, South Africa. *International Journal of Sustainable Development and World Ecology*, 12(3), 266-278.
- Kiss, A. (2004). Is community-based ecotourism a good use of biodiversity conservation funds? *TRENDS in Ecology and Evolution*, 19(5), 232-237.
- Liu, J., Daily, G. C., Ehrlich, P. R., & Luck, G. W. (2003). Effects of household dynamics on resource consumption and biodiversity. *Nature*, 421(30 January), 530-533.
- Loon, R. M., & Polakow, D. (2001). Ecotourism ventures: rags or riches? *Annals of Tourism Research*, 28(4), 892-907.
- Luckett, S., Mkhize, K., & Potter, D. (2003). The experience of local boards in KwaZulu-Natal, South Africa. *Parks*, 13(1), 6-15.
- Mauambeta, D. D. C. (2003). *HIV/AIDS Mainstreaming in Conservation: the Case of*

- Wildlife and Environmental Society of Malawi*. Embe: Wildlife and Environmental Society of Malawi.
- Moodley, S. E. (n.d.). *Environmental Economics Assessment of Land Use Options: Mbangweni Land Claim Settlement*. Braamfontein: IUCN-NETCAB Biodiversity Support Project.
- Mulholland, G., & Eagles, P. F. J. (2002). African parks: combining fiscal and ecological sustainability. *Parks*, 12(1), 42-49.
- Oglethorpe, J., & Gelman, N. (2004). *HIV/AIDS and the Environment: Gender Makes the Difference*. Geneva: IUCN.
- Pirot, P., Bartos, M., Ghys, P. D., Walker, N., & Schwartländer, B. (2001). The global impact of HIV/AIDS. *Nature*, 410(April 19), 968-973.
- Poultney, C., & Spenceley, A. (2001). *Practical Strategies for Pro-poor Tourism: Wilderness Safaris South Africa: Rocktail Bay and Ndumu Lodge, PPT Working Paper No. 1*. London: Overseas Development Institute.
- PPF (Peace Parks Foundation). (2002). *The Facilitation and Development of Transfrontier Conservation Areas in Southern Africa: Funding Application in Support of the Lubombo Transfrontier Conservation Area*. Stellenbosch: Peace Parks Foundation.
- Ramutsindela, M. F. (2002). The perfect way to end a painful past? Makuleke land deal in South Africa. *Geoforum*, 33, 15-24.
- Rehle, T. M., & Shisana, O. (2003). Epidemiological and demographic HIV/AIDS projections: South Africa. *African Journal of AIDS Research*, 2(1), 1-8.
- Robins, S. (2001). NGOs, 'Bushman' and double vision: the Khomani San land claim

and the cultural politics of ‘community’ and ‘development’ in the Kalahari.
Journal of Southern African Studies, 27(4), 833-853.

Schmidt–Soltau, K. (2003). Conservation–related resettlement in Central Africa: environmental and social risks. *Development and Change*, 34(3), 525-551.

Singh, J. A. (2004). Why AIDS in South Africa threatens stability and economic growth in other parts of Africa. *The Lancet*, 24(27 November), 1919-1920.

Sitoe, A., Kayambazinthu, D., Barany, M., & Anyonge, C. H. (2004). *HIV/AIDS and the Miombo Woodlands of Mozambique and Malawi: an Exploratory Study*. Rome: Department of Forestry, Food and Agriculture Organization.

Statistics South Africa. (2005). *Mortality and Causes of Death in South Africa 1997-2003: Findings from Death Notifications*. Pretoria.

Tong, M. (ca. 2002). *Lest We Forget: Restitution Digest on Administrative Decisions*. Pretoria: South African Department of Land Affairs.

UNAIDS. (2004). *2004 Report on the Global AIDS Epidemic: 4th Global Report*. Geneva: Joint United Nations Programme on HIV/AIDS.

Whande, W., Kepe, T., & Murphree, M. (Eds.). (2003). *Local Communities, Equity and Conservation in Southern Africa: A Synthesis of Lessons Learnt and Recommendations From a Southern African Technical Workshop*. Bellville: Programme for Land and Agrarian Studies, University of the Western Cape.

CHAPTER 6

Transboundary Conservation: Development Implications for Communities in KwaZulu-Natal, South Africa

Jennifer Lee Jones

Centre for Environmental Studies, University of Pretoria, Pretoria 0002, South Africa,
jenleejones@gmail.com

Key words: rural development, Maputaland, nature-based tourism, Peace Park

Published in *The International Journal of Sustainable Development and World
Ecology* 12, 3 (2005), pp. 266-278.

SUMMARY

Conservation is increasingly promoted as a sustainable development instrument in Southern Africa, particularly for remote rural communities. Conservation and development schemes are marketed as community-based projects providing local empowerment through the creation of jobs and cash stemming from protected areas, as well as increased biodiversity protection by local communities whose jobs are dependent on the resource. Transfrontier Conservation Areas (TFCAs), mega Peace Parks that cross international borders, are one of the latest conservation and development paradigms in Southern Africa. TFCAs have gained broad support, including government recognition as a development tool. However, there has been minimal research of the impact of TFCAs on local communities. This paper seeks to provide an empirical case study of a South African community bordering the Lubombo TFCA (South Africa, Swaziland, Mozambique). Results are presented that indicate the Mbangweni community in KwaZulu-Natal could experience decreased access to social, natural, and economic resources as a result of the Peace Park.

INTRODUCTION

Conservation and protected area management in South Africa has moved away from a strictly preservationist paradigm of managing for biodiversity. It is increasingly expected to contribute to poverty alleviation in underdeveloped regions by acting as a stimulus for sustainable development through continued and/or expanded resource-dependent livelihoods and the creation of new opportunities stemming from protected areas. Transfrontier Conservation Areas (TFCA), mega Peace Parks that cross international borders, are one of the latest conservation and development paradigms in Southern Africa. TFCAs have gained broad support, yet empirical research findings of impacts on communities are lacking. I used Community-integrated Geographic Information System, comprised of traditional survey techniques, interviews, observation, and aerial photograph interpretation to explore resource access, attitudes, and consumption in a South African community bordering part of the Lubombo TFCA between South Africa, Swaziland, and Mozambique.

I begin by exploring the influence of a globalization of conservation values based on Northern epistemological ideologies of nature. Local communities and their livelihoods are often viewed by conservation agencies as homogenous and in direct contrast to biodiversity protection. This is especially evident in the context of a polarized society such as South Africa, which illustrates the challenge of understanding and incorporating socially differentiated paradigms for conservation areas and local users (Weiner and Harris, 1999). I explore transboundary conservation as a movement, and particularly The Peace Parks Foundation as an institutional driver in Southern Africa. The potential of Peace Parks to provide local benefits is examined

in the community of Mbangweni, South Africa. Empirical evidence suggests that the Lubombo TFCA may not provide significant sustainable development, but may actually decrease local access to social, economic, and natural resources.

TRANSBOUNDARY CONSERVATION PARADIGMS

There are a myriad of concepts and corresponding terms to describe different frameworks, including the larger Transboundary Natural Resource Management (TBNRM) paradigm, Transboundary Protected Areas (TBPA), Transboundary Conservation Areas (TBCA), Transfrontier Conservation Areas (TFCA) and Transboundary Development Areas (TBDA) (Mayoral-Phillips, 2002; Katerere *et al.*, 2001; Griffin *et al.*, 1999). In some ways, the term transboundary is being shaped to become all things to all people. The various terms may have different peripheral foci, but all include the sustainable use of natural resources.

While a strong theoretical debate on transboundary issues has developed, consensus about potential benefits and/or detrimental effects has yet to emerge. Sharp dichotomies permeate the literature, supported by minimal empirical research results. Griffin *et al.* (1999) note that TBNRM activities can legalize cross-border movement and renew cultural ties affected by international borders, while Fakir (2000) describes transboundary initiatives as ‘conservation expansionism’. Some believe transboundary initiatives can foster peace and security (Westing, 1993 and 1998), provide environmental security and enhance regional cooperation (Singh, 1999), and mend pre- and post colonial conflicts in Southern Africa (Koch, 1998). Others argue they may cause inter-state disputes rather than assuage them (Wolmer, 2003) or

increase conflict if land disputes and economic benefits are not equitably shared among participating countries (Fakir, 2000). Increased economic development and poverty alleviation for poor rural communities are also expected from new nature-based tourism opportunities (SADC, 1992 and 1999; NEPAD, 2001; PPF, 2003). Despite the dichotomies, the transboundary conservation movement has gained momentum in Southern Africa and it is therefore necessary to explore its global and local drivers.

Northern idealism and managing the 'global commons'

Dollar (2001) defines globalization as the economic and societal integration around the world due to the flow of goods, services, and capital, as well as people and ideas. In much of the public consciousness, globalization has become synonymous with a deterritorialization and homogenization of culture. From a post-modern geopolitical perspective, transnational ideas and values have led to a globalization of conservation paradigms and practices. Concern for the global commons has become a major driver of biodiversity management in developing countries (Ghate, 2003). Northern epistemologies of natural resource management and community theory permeate transboundary conservation paradigms, and projects are often driven by agendas of international donors (Katerere, *et al.*, 2001; Hughes, 2003). Duffy (2001) warns that conservation interventions still rely on Northern assumptions about the primitiveness of non-western people, and the belief that local people encroach on biodiversity. She notes that with global interventions the opposite is usually true, and conservation management encroaches on the domains of local resources and communities.

Katerere *et al.* (2001) wonders if globalization has precipitated unrestrained access of Northern researchers and capital to regional resources. Others note that a global protectionism movement can shift power from local to global interests, thereby contributing to external imperialism (Carruthers, 1997).

Much of the donor-driven paradigm is based on Hardin's (1968) 'tragedy of the commons', particularly when applied to traditional African communal land tenure systems. In reality the theory addressed open systems lacking oversight and therefore does not reflect the complexity of communal resource use. Nevertheless, donor programs worried about the approaching tragedy are often delivered under participatory community-based natural resource management (CBNRM) schemes of communal areas. There is now a seamless merging of goals and funds of traditional development donor agencies with those of conservation organizations. Conservation nongovernmental organizations (NGOs) have changed their strategies in order to gain access to newly available development funds, subsequently shifting their policies to match those of the new funding agency (Levine, 2002). These donors typically prefer local programs, believing that 'small is beautiful... local is authentic' (Hughes, 2003, p 23). But CBNRM is not without its own problems. In Southern Africa, CBNRM programs often result in conflict over the use of funds and an expansion of NGO influence (Fabricius *et al.*, 2001). While most projects include economic development goals, projects tend to lean towards conservation and not poverty alleviation, ultimately usurping community benefits in favor of strictly ecological interests (Metcalf, 1999). Furthermore, there is also concern that transboundary initiatives could be used against communities as states extend control over sparsely populated

border regions in the name of conservation (Duffy, 2001). Duffy notes that in some instances, global conservation organizations have assisted state governments in obtaining additional control over wild places through the demarcation of protected areas and their surrounding buffer zones. The newly protected areas bring an increased level of law enforcement for natural resource protection, subsequently used as a controlling mechanism in remote border areas for immigration and informal trade.

PEACE PARKS IN SOUTHERN AFRICA

In Southern Africa, the primary institutional driver of transboundary conservation is the Peace Parks Foundation (PPF). Its mission is ‘to facilitate the establishment of Transfrontier Conservation Areas (TFCA), supporting sustainable economic development, the conservation of biodiversity, and regional peace and stability’ (PPF, 2003). The role of local communities was not originally considered (van Riet, 2003), but Peace Parks are now promoted as a development instrument in support of the Southern African Development Community (SADC) and the New Partnership for African Development (NEPAD). The Peace Parks Foundation is a South African based organization with an essentially Northern epistemology present in much of the country’s conservation strategies. Most of the PPF’s project funding is donated by international aid organizations, private foundations and trusts, and other government affiliates such as the Dutch National Postcode Lottery (PPF, 2001 and 2003).

Concerns of social legitimacy and effective participation in PPF projects have been raised. Draper (2002) describes the ‘mythology of community development’ in

the PPF framework and notes that community buy-in and commitment from local residents in proposed or affected areas are welcome, as long as they follow the PPF conservation policy. In its 2001 Annual Report (PPF, 2001), founder and chairman Anton Rupert remarks that natural assets will only have ‘meaningful value’ to local people when they are used to create sustainable economic growth based on nature-based tourism.

The centerpiece of the PPF effort thus far has been the Great Limpopo TFCA, linking Kruger National Park in South Africa, Gonarezhou National Park in Zimbabwe, and Limpopo National Park in Mozambique. Concerns have been raised regarding equity of benefits and community participation. Research by the Refugee Research Programme (RRP, 2002) at the University of the Witwatersrand found that in the Mozambican portion of the park, 40% of households had never heard about the conservation plan and communities are confused about how the park will affect them. The Great Limpopo TFCA has been driven by conservation NGOs and donor organizations, resulting in a top-down process with belated community engagement (Grossman, 2003). In the case of the Lubombo TFCA, encompassing the study area of this paper, Kloppers (unpublished master’s thesis, University of Pretoria, 2001) notes that when potentially affected communities have been identified or researched, they are often portrayed in a homogenous fashion, without describing the people or their relationship to the local environment.

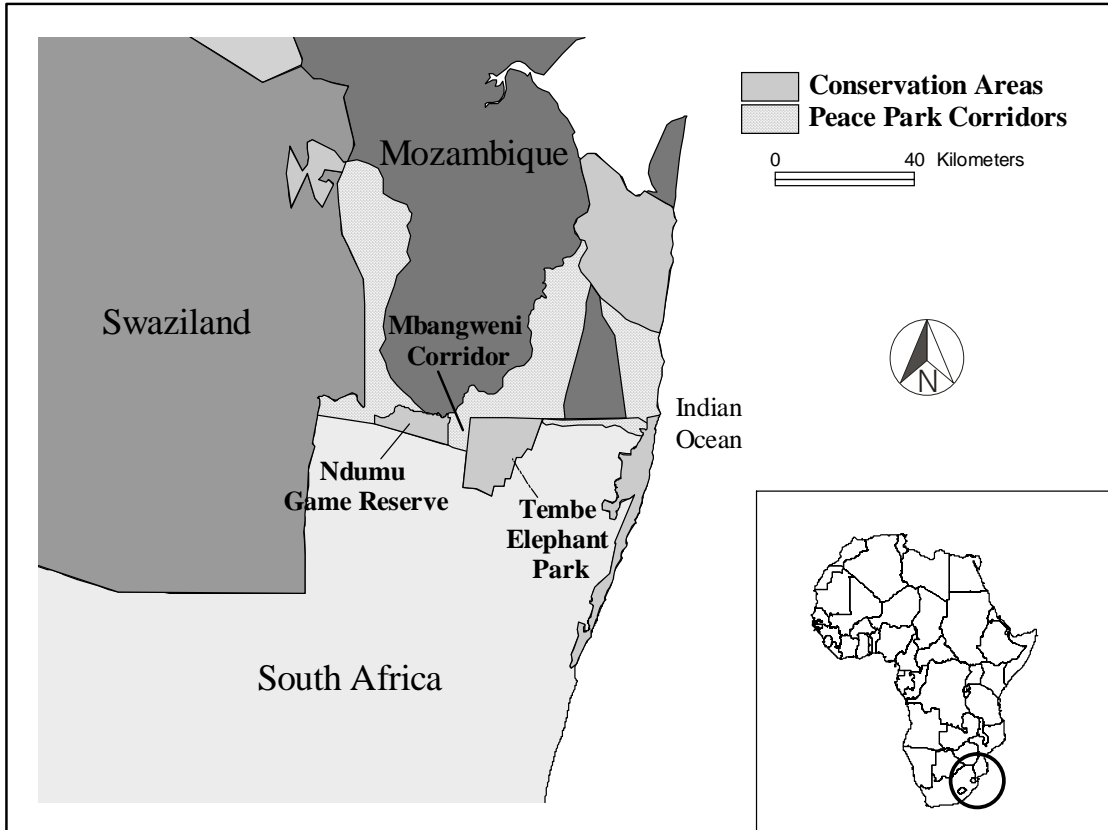
Distribution equity of new jobs has also been questioned (RRP, 2002). In the Great Limpopo TFCA, research found that of the 115 field rangers to be trained for the Mozambican portion of the park, only 29 individuals were selected from local

villages, with the remainder coming from South Africa. Although some jobs have been created, it is unlikely that all the components of the Great Limpopo TFCA will be profitable (Grossman, 2003). Furthermore, rather than increasing rural development, there is concern that TFCAs will purposely limit development as current communal land-use patterns are maintained to act as buffer zones or interstitial corridors of low-impact surrounding conservation areas (Wolmer, 2003; Draper, 2002).

STUDY REGION AND METHODS

The study area lies in the Maputaland region, extending from St Lucia in South Africa to Maputo Bay in Mozambique (Figure 1). Protected Areas in the region represent a number of different habitat types, and include a World Heritage site and several Ramsar Wetland sites. In 2000, The Lubombo Transfrontier Conservation Area (LTFCA) Trilateral Protocol was signed between South Africa, Mozambique, and Swaziland. The LTFCA will center on existing reserves, linking them with new conservation corridors created from currently unprotected inhabited lands. The South African portion of the Lubombo TFCA lies within the province of KwaZulu-Natal. Rural development has been neglected for many years and the area is characterized by extreme poverty and poor economic development with most residents dependent on local natural resource utilization for their livelihoods.

Figure 1: The Lubombo Transfrontier Conservation Area, encompassing parks in South Africa, Swaziland, Mozambique

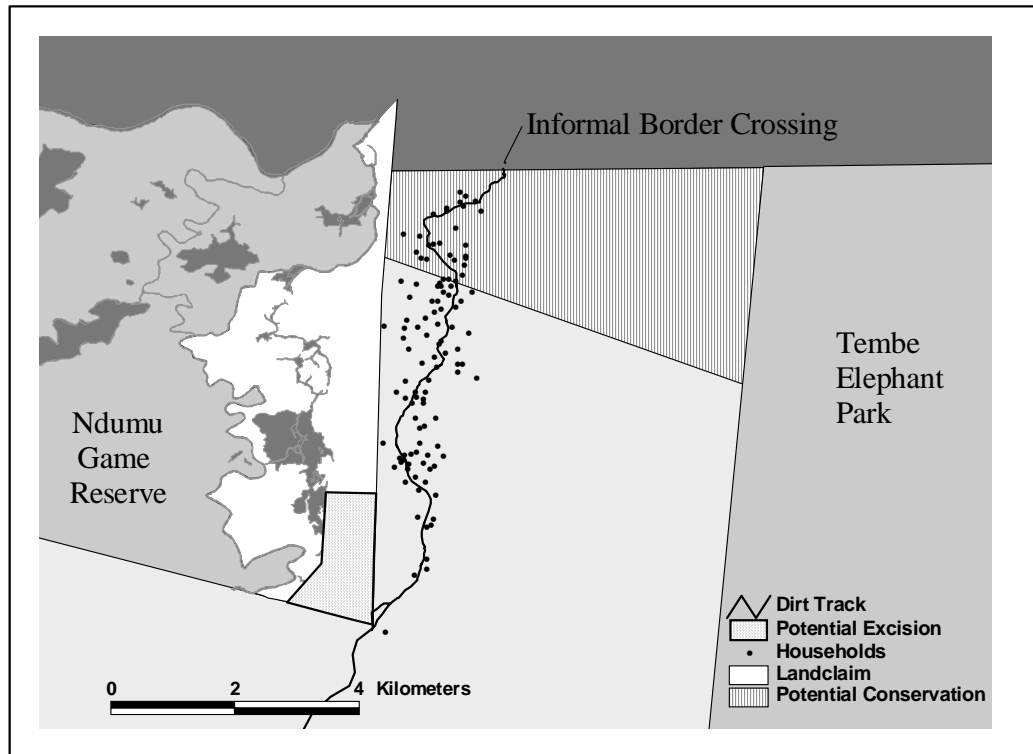


Fieldwork was carried out between February 2002 and March 2003 with numerous visits to the Mbangweni community, neighboring communities, the local traditional authority, and conservation authorities. Data collection included a geo-referenced survey, semi-structured interviews, interviews with key informants, direct observation, Global Positioning System (GPS) data, and community interpretation of maps and aerial photographs. The survey was collected for all 118 households in Mbangweni, as well as households in two other nearby communities (iSibonisweni and uBhekabantu), and included: socio-demographic information; livelihood strategies; natural resource utilization methods and consumption indicators; and attitudes, values, and perceptions ascribed to natural resources and conservation. Geographic coordinates were obtained at each household and community settlement patterns were mapped and linked to survey data in a Community-Integrated Geographic Information System. Aerial photographs and topographic maps allowed participants to evaluate resource location and access, relate narratives of historical patterns of settlement and movement, identify communal resource conflict areas, and draw their own interpretation of various themes and locations.

Community Description and Livelihoods

Located between Ndumu Game Reserve (10,177ha), Tembe Elephant Park (29,000ha), and the international Mozambique border (Figure 2), the community of Mbangweni (approximately 45km²) is situated on communal land under the leadership of the Tembe Traditional Authority (TTA). The traditional authority encompasses an area approximately 2240km² containing 35,000 residents in 42

Figure 2: The Mbangweni community, conservation areas, land claim area, and the potential land excision and conservation corridor.



separate *izigodi* (hereafter referred to as communities), and was part of the former semi-autonomous KwaZulu *Bantustan* (black homeland). All land is held in trust, but the Tembe *inkosi* (chief) and his traditional *izinduna* (sub-chiefs) make most land-use decisions at the community level. Historically, the Tembe Kingdom comprised an area that is now fragmented between South Africa and Mozambique and communities on both sides of the border continue to share similar cultures, kinship ties, and livelihoods. Although there is a demarcated international fence line, the border is porous with people and goods flowing fairly unrestricted in both directions. Protected conservation areas with the Tembe Traditional Authority's boundaries total more than 24% of the land. The park lands belong to the traditional authority, but are managed as conservation in accordance with negotiated agreements by the provincial conservation agency, Ezemvelo KwaZulu-Natal Wildlife. However, Ndumu Game Reserve land is owned by the state and the communal land on all but the eastern side of Ndumu belongs to a the Mathenjwa Traditional Authority.

Survey results indicate the average Mbangweni household consists of 5.7 people, above the regional average. The calculated dependency ratio is 51%, and 72% of respondents were born in the immediate area. Minimal cash flows into the community and most goods and services produced are consumed within the community, with up to 90% of individual household production consumed by the household itself (Moodley, n.d.). Most household cash is spent on basic foodstuffs, with the remainder spent on transportation, healthcare, and school fees. Statistics and anecdotal evidence suggest that the HIV/AIDS infection rates are around 33% (E. Immelman, personal communication, February 28, 2003). The state government, via a

local municipality, is responsible for basic economic and social development, including provision of water, electricity, education, health, and sanitation.

Most of the 118 households in Mbangweni pursue subsistence livelihoods. There are no natural water sources or communal taps; residents collect water from the river and boreholes inside Ndumu Game Reserve. There is no electricity grid, sanitation, or healthcare in the community, and one informal single-track dirt road which connects to the main tar road approximately 22km to the south. Homesteads are constructed using traditional materials and methods, and households are dependent on local fuel wood collection for energy. Some households generate income by selling foodstuffs, fishing, trade, and a few formal jobs in the region. However, most households are extremely dependent on remittances, pensions, and child support grants from the government.

Households typically have a small dry land agricultural plot at their homestead, usually not sufficient to sustain families due to poor sandy soils and a lack of water. Primary household garden plots are located one to two kilometers over the Mozambican fence line, near the more fertile floodplain areas. The communal land of Mbangweni is abundant in wild fruits and trees, which form an important part of nutrition and income generation through the production and sale of wild products (Cunningham 1988; Felgate, 1982). There is an active bush meat trade in the region, most probably harvested in southern Mozambique. There are no fishing areas in the community, but residents engage in active trade with people in Mozambique and have monitored fishing access inside Ndumu Game Reserve.

THE MAKING OF RESOURCE CONFLICT

Historically, some members of the community resided on or near the eastern bank of the Pongola floodplain, an area that is now part of the Ndumu Game Reserve, proclaimed in 1924. The community was forcibly removed from the 1940s -1960s due to racially discriminatory laws and practices (South Africa, 1997). The Apartheid government used Tsetse fly aerial spraying as a means to ensure both people and their cattle moved from the area, and later invoked the Illegal Squatters Act to remove them again when they tried to move back into the reserve. In contrast, Tembe Elephant Park was proclaimed and fenced in the 1980s in 'consultation' with the Tembe Traditional Authority. Subsequent to full democratization and land restitution legislation, the Mbangweni community and Tembe Traditional Authority filed a land claim in 1998 against Ndumu Game Reserve for all land east of the Pongola River within the Ndumu Game Reserve fence line (Figure 2). In 2000, the Department of Land Affairs settled the land claim with Mbangweni acknowledged as the rightful owners of the land. However, the restitution required the land to continue as conservation under the management of Ezemvelo KwaZulu-Natal Wildlife (Tong, ca. 2002). Under the settlement, the parties also agreed to negotiate a separate management agreement for the area, including the determination of access rights and the share of revenue benefits to be received.

The settlement further stipulated the community's right to pursue the excision and de-proclamation of a small portion of the land claim for agricultural purposes. The primary alternative being considered would excise 200ha (2%) of highly productive agricultural land from southeast corner of Ndumu Game Reserve to the

community in exchange for 1650 ha (36%) of Mbangweni to be managed as a conservation corridor joining Tembe Elephant Park and Ndumu Game Reserve. According to the Peace Parks Foundation, the consolidation of these properties would form a core area that South Africa can commit to the Lubombo TFCA and is a critical prerequisite before it can be established formally (PPF, 2002). The exact size, shape, and position of a potential conservation corridor to link the two parks must still to be negotiated by the community and Ezemvelo KwaZulu-Natal Wildlife. A likely alternative based on the potential land exchange is a polygonal corridor (Figure 2), which would necessitate some of the Mbangweni households to move several kilometers south.

As the land exchange and management agreement continue to be negotiated, mistrust and animosity between the community and outside agencies have escalated in recent years. According to the traditional headman of Mbangweni (I. Tembe, personal communication, March 10, 2003), he was unaware that past oral agreements, as well as additional short-term incentives such as culled hippo meat from Ndumu Game Reserve, were not binding. The deals never came to fruition and the community feels 'cheated'. Subsequently, violence and resource destruction have escalated in recent years. One local resident found poaching in the park was shot and killed when he attacked the game ranger apprehending him. In another incident, an off-duty park ranger was physically assaulted while visiting the community. In response to ongoing tension, community members cut down and burned 3 kilometers of reserve fence line, declaring it was their 'fence telegram' to notify conservation authorities of the community's desire to discuss the matter. In early 2004 the situation

improved, and the community agreed to respect the fence line, with community members hired to repair the fence.

Local economics and job security are other important factors in the ongoing conflict. One of the most lucrative industries within the community is the informal taxi service run by a handful of local residents. The taxis provide the only means of regular transportation along the 22km dirt road from the Mozambique border to the main tar road where regional shops, businesses, and services are located. Taxis charge an inflated rate (ZAR25) for a one-way trip, equivalent in price to six liters of petrol. Mozambicans also use the taxis to travel to shopping, healthcare, and other services inside South Africa. The taxis rely on the porous border for passengers, and would be severely affected should the international border area become fenced-in conservation land as proposed for the Lubombo TFCA. The taxi drivers exercise considerable influence within the community, and it is generally acknowledged they intimidate Mbangweni residents from supporting any settlement that would interfere with their business.

The taxi operators are also suspected of being involved with criminal cross-border activities, including trade of stolen cars and gun smuggling. In the 1990s the northern Maputaland region was the exit point for many stolen vehicles leaving the country bound for East Africa and Europe. Conversely, firearms from the Mozambican civil war flowed into South Africa. Other stolen items, illegal merchandise, and drugs are also transported across the border in both directions. Working together, the South African and Mozambican governments established military and police camps along a 50km stretch of border designed to halt the

criminal activity. A joint taskforce from 2000-2001 stopped much of the criminal activity. Today, small transient military outposts still linger for short periods at the Mbangweni and other informal border crossings. Different army units rotate in for three-month periods, often enforcing their own rules and policies, creating confusion and tension amongst local residents who rely on routine legal cross-border travel.

External interests have further exacerbated the conflict. As with many developing areas, nature-based tourism has been hailed as the economic savior of Maputaland. While the region has room for tourism growth, it is a long-term and slow process, which has irritated local residents. Promises by outsiders to build hotels and related tourist services created impressions of immediate jobs, but few have yet to materialize. Compounding the situation are private investors who have explored several different low-impact ‘sustainable’ businesses in the area, such as endemic fish farming, craft making, and production of non-timber forest products. Again, residents are frustrated at what they perceive to be empty promises and deliberately inflated expectations.

LOCAL COSTS AND BENEFITS OF THE LUBOMBO TFCA

Research was conducted as negotiations continued between Mbangweni and Ezemvelo KwaZulu-Natal Wildlife regarding the management agreement stemming from the land claim and a potential conservation corridor. Survey results reflect community attitudes and trends only for the time the data was collected. I present the survey findings, supplemented by additional data, for the social, economic, and resource access of resources by Mbangweni residents. Implications from the

Lubombo TFCA are explored for each type of access, including identification of potential future conflict issues.

Attitudes and Perceptions Towards Nature and Conservation

Most residents stated that nature is important because it provides crops and livestock and wild fruits and wild animals. Less than half responded that nature is important because it provides jobs/tourism, and only a very small percentage cited beauty as a reason. Regarding population density in the community, the majority believes that the number of people living in the community does not affect the quality of nature and that nature will always provide enough resources (*e.g.* wood, water, soil). Most stated they have enough land and wood, but more than half responded they did not have enough water, citing distance to collect water and fear of crocodiles in the river. When asked specifically about the population density of Mbangweni, the majority (78%) responded there are too many people living in the community, with the main factor being the number of homesteads and people, not resource scarcity.

Respondents were asked in separate questions to identify what is good about Ndumu Game Reserve and Tembe Elephant Park. Responses were similar towards both conservation areas, citing that they protect natural resources and keep the dangerous animals away from people. When asked what is bad about each conservation area, results differed. For Ndumu Game Reserve most respondents cited the loss of agricultural land from inside the park, while the main reason given for Tembe Elephant Park was ‘nothing’. This is not surprising due to Mbangweni’s greater distance and lack of historical ties to Tembe Elephant Park.

Social Access Implications

Land identity within the community is very strong, and settlement patterns have developed in accordance with local culture and customs. Individual homesteads are approximately 50 meters x 50 meters and are demarcated from one another by trees and vegetation between homesteads. Privacy is an important factor and new homesteads are built to allow space between them. This is reflected in that most of the respondents stated that although they have enough land for homesteads, they think there are too many people in the community due to a sense of crowding. If a portion of the communal land were transferred to conservation, homesteads in the northern section of the community would presumably be required to relocate to the remaining southern area. This will increase the density of households, exacerbated as natural growth continues. This is compounded by the regional trend of an increase in both absolute population and number of households, but a decrease in the number of persons per household from 6.6 in 1996 to 5.4 in 2001 (derived from South Africa, 1996 and 2001). Unless there is a concordant decline in the average parcel size per homestead, then homestead land-use per capita will increase, accompanied by increased crowding. These factors can potentially contribute to resource scarcity, conflict and dissatisfaction within the community, which could spillover to conservation areas.

Social and Economic Patterns with Mozambique

Mbangweni residents consume higher amounts of fish than in other communities, mostly harvested from pans across the border by Mozambicans. Women from

Mbangweni buy the fish at the border and transport it 22 km south via informal taxi operators to the main tar road markets where the fish is resold. Regarding other trade by Mbangweni residents, 18% of households sell goods at the border market (clothes, peanuts, snack foods, and biscuits) and 77% buy goods at the border market (fish, maize, sugarcane, and bananas). More than 26% of Mbangweni households replied they have family and friends who live in Mozambique. This was cited as the most common reason residents go to Mozambique, with an average visit of once per month. Other reasons for going to Mozambique were to cultivate gardens, buy fish, buy maize, and buy other food, with half the respondents going 1-3 times per month.

Social Access Implications

Social access to family and friends in Mozambique is a unique, yet important, resource that cannot be easily replaced or substituted. If potential designs for the conservation corridor include separating the community from the border by a fenced protected area, residents will lose this access if other provisions are not made. This is ironic since discussions about transboundary conservation benefits highlight their potential to remove 'artificial borders' and restore 'historical links' (Griffin *et al.*, 1999). There are potential solutions to continue the social access, as well as create economic and resource opportunities. Residents could be granted access to walk through the corridor to the border. However, this poses a safety issue for people since the conservation area will eventually contain dangerous animals. Another alternative is to allow the taxi service to continue operating from the community through the conservation corridor to the border under a managed scheme. In this manner, taxi

businesses could continue and residents would have access to Mozambique. However, this could place increased financial burden on residents who would have to pay for transportation to the border, when previously they walked. Inability to pay could lead to a lack of demand jeopardizing taxi businesses and contributing to increased conflict. A funneling of people through controlled access routes could also face resistance from local people. While most routine border traffic occurs at the primary informal crossing, residents do cross at other areas simply by slipping through the fence. Non-residents on both sides of the border compound the situation by routinely passing through the border for shopping, trading, healthcare, school, and illegal activities. Even if established for conservation reasons, the funneling effect could support a more centralized state that enforces border zones by means of conservation. Government control of illegal trade, primarily cigarettes and clothing, has already been a factor in the area, with army units routinely patrolling border regions looking for contraband (A. Beukes, personal communication, March 20, 2003).

Economic Access Implications

The trade of fish between the communities on opposite sides of the border is one of the primary cash economies in the area. Women on both sides benefit from the infusion of external cash when the fish is sold in other communities and at regional markets. Furthermore, transportation of the fish from the border to the market at the tar road contributes to the local taxi businesses and the fish is an important source of cheap protein for local nutrition.

Informal trade at the border market is another important economic resource on the both sides of the border. It contributes to household income, while providing an exchange of goods otherwise difficult to obtain in the region due to the lack of formal distribution networks and shops. As with the fish trade, the taxi operators also rely on ferrying people and goods in South Africa to and from the border market.

New economic nature-based tourism opportunities stemming from a conservation corridor could create local jobs and benefits. However, economic growth and development solely dependent on nature-based tourism in the region remains risky and should not be sold as the only initiative needed to create development in the area (Els and Kloppers, 2001). Previous research by KwaZulu-Natal Wildlife in Mbangweni found that financial constraints in the community were a major stumbling block and that ‘communities were simply unable to wait for a minimum of 18 months before there were any visible benefits from ecotourism and a further period of 3-5 years before the ecotourism ventures showed a profit’ (Duffy, 2001). In 2000, a researcher with a South African human rights and democracy NGO (Ewing, 2001) spoke to the Mbangweni headman about proposed nature-based tourism opportunities who stated:

‘I am tired of people coming here and talking about development, making promises they don’t keep. There are people who have addressed the community on the issue of tourism but we are still looking for them to come and do what they told us. I am willing to see that thing they call tourism because I don’t know what it is’

It has been observed that nature-based tourism ventures are seldom economically viable and are ‘mirages to silence the rumbling discontent of the victims of development speak’ (Fakir, 2003). One lodge operator in Ndumu Game Reserve has pursued a pro-poor tourism strategy by way of a contractual relationship with the other surrounding communities, including partial ownership of the operation and dividend sharing. The company is acknowledged as a successful nature-based tourism operator throughout Southern Africa, yet the Ndumu operation has failed to make a profit since opening in 1995 (Poultney and Spenceley, 2001). However, to maintain the goodwill of the communities and demonstrate the potential of nature-based tourism, the operator has borrowed money from a third private shareholder to pay the communities ‘dividends’ before the company has broken even, thus increasing the company’s loss (Poultney and Spenceley, 2001). Therefore, if negotiations between Mbangweni and the conservation service include nature-based tourism opportunities, they will need to be backed by capital and long-term commitment. Benefits and profits must accrue in a timely and equitable manner, avoiding extreme leakage. The community has been frustrated by promises in the past that have added to the tension. An escalation in conflict could be expected if the community relocates, foregoes resource access under a negotiation and the promised jobs and benefits are slow to materialize.

Additional pressure on natural resources could be exacerbated in northern Maputaland if regional population growth continues and the area becomes a hub of development. Under the government-sponsored Lubombo Spatial Development Initiative, Northern Maputaland has been identified as a regional hub and is receiving

infrastructure improvements, primarily roads to attract tourist and commercial interests. Workers from outside the immediate surrounding will also be attracted by perceived economic opportunity. The immigrant labor will add pressure to resources (*e.g.* fuel wood) even if they find jobs, as workers remit most of their earnings to their home communities, and consume local wild resources when possible. The associated social pressures of crowding previously identified could further aggravate the situation.

Bush Meat

Mbangweni consumes significantly higher amounts of both wild animals and birds compared with two other nearby communities (iSibonisweni and uBhekabantu). Preference for the meat of wild animals and birds over beef was 15 times greater than the other communities. Regarding how the meat was obtained, Mbangweni residents reported significantly higher rates of catching wild animals and birds, and a higher rate of buying wild animals. Owing to local communal resource rights, residents usually conduct hunting practices within their own ward. Illegal poaching in the conservation areas was not measured and is not delineated in responses. However, conservation authorities (C. Hanekom personal communication, May 20, 2003) state that in Ndumu Game Reserve 70% of the poaching is conducted by residents from Mbangweni and another Tembe ward, and 30% by Mozambicans. Many markets in the area regularly supply bush meat, with border markets tending to have the greatest supply. Most of the bush meat for sale is suspected of coming from unprotected areas in Mozambique and some from illegally poached animals.

Bush Meat Implications

Mbangweni's higher consumption rate and preference compared to other local communities suggests that demand will continue to play a role. It is difficult to determine exactly where the bush meat comes from, but presumably a portion (*e.g.* Mbangweni's high rate of catching wild birds) comes from within the communal land. Demand for bush meat is driven by cultural, social, economic, and availability variables. Within Southern Africa, even when bush meat is bought it is still cheaper than domestic meat and therefore most of the demand is driven by affordability (TRAFFIC, 1997). In extremely impoverished areas the cash savings on meat products are important for household economics, yet can be detrimental to wildlife populations. Musters *et al.* (2000) note that to reduce the threat on bush meat, one needs to alleviate poverty. A decline in poverty of Mbangweni could potentially lessen demand on bush meat and decrease poaching in the conservation areas.

CONCLUSION

Transboundary conservation is increasingly proposed as a positive development tool in Southern Africa. Yet the specific ability of transboundary conservation to provide local poverty alleviation and increased development remains unknown. Conservation in Southern Africa continues to be influenced by a globalization of predominantly Northern ideas, funding, and methodologies. Many protected areas continue to focus on species-specific problems and fortress conservation styles while their ability to contribute to overall biodiversity protection remains unknown. New transboundary conservation areas have grown from joining geographically proximate areas that only

required removing a shared fence line, to the creation of enlarged areas by linking parks that are hundreds of kilometers apart. To do this will require creating new conservation areas, including corridors, on lands that are inhabited by local people.

Communities are inherently heterogeneous, and the potential benefits and costs associated with conservation areas differ by community. In South Africa, Mbangweni's unique history of forced removals, location on an international border, and conflict with local conservation authorities affects its conservation and development outcomes. However, local communities are often viewed as homogenous by conservation and development institutions, with little attention paid to site-specific conditions. Livelihoods in Mbangweni are built on a complicated network of access to natural, social, and economic resources, linkages with other communities, land identity, local ecological conditions, and community attitudes towards and consumption of resources. Land identified as a potential conservation corridor provides access to resources within the Mbangweni Corridor itself, as well as through the corridor to other resources. An expanded conservation area on the communal land could serve to decrease access to these resources and further fragment the social linkages between Mbangweni and Mozambique. Decreased access to economic resources could serve to increase conflict in the area, particularly by local taxis if economic substitutes are not provided. While there is potential for increased economic access from associated nature-based tourism stemming from conservation, precise benefits are unknown, but at the very least will take years to materialize within the community. The resulting jobs and benefits will also attract immigrant labor to the area, adding increased population pressure on the social structures, as

well as the natural resources. Furthermore, there is a risk that many of the jobs will require imported skilled labor, resulting in leakage of cash and revenues from the region (DFID, 2002).

Ultimately, the sustainability of an enlarged transboundary conservation area is dependent on local popular support and legitimization. The Durban Accord, adopted at the 2003 IUCN World Parks Congress, voiced concern ‘that many costs of protected areas are borne locally - particularly by poor communities - while benefits accrue globally and remain under appreciated’, and that protected areas should strive to alleviate poverty but at the very least they must not exacerbate it (IUCN, 2003). Evidence from this case study suggest that transboundary conservation efforts will require livelihood mitigation for overcoming disparities between conservation and community paradigms to ensure that they contribute to community and conservation well-being.

References

- Carruthers, J. (1997). Nationhood and national parks: comparative examples from the post-imperial experience. In T. Griffiths & L. Robin (Eds.), *Ecology and empire: environmental history of settler societies*. Pietermaritzburg: University of Natal Press.
- Cunningham, A. B. (1988). Nutritional value of palm wine from *Hyphaene coriacea* and *Phoenix reclinata* (Arecaceae). *Economic Botany*, 42(3), 301-306.
- DFID. (2002). *Wildlife and poverty study*. London: Livestock and Wildlife Advisory Group.
- Dollar, D. (2001). *Globalization, inequality, and poverty since 1980*. Washington D.C.: Development Research Group, World Bank.
- Draper, M. (2002, November 12). *Super African dreams: the mythology of community development in transfrontier conservation areas in Southern Africa*. Paper presented at the Ecotourism and Nature Parks in East and Southern Africa, African Studies Centre, Leiden.
- Duffy, R. (2001). Peace parks: the paradox of globalisation. *Geopolitics*, 6(2), 1-26.
- Els, H., & Kloppers, R. (2001). *Restoration of the Tembe-Futi-Maputo coastal plains elephant population: final report on the socio-economic component of the research programme*. Pretoria: Centre for Indigenous Knowledge, University of Pretoria.
- Ewing, D. (2001). Paradise Regained? *Siyaya!*, 7 (January), 28-35.
- Fabricius, C., Kock, E., & Magome, H. (2001). *Community wildlife management in Southern Africa: challenging the assumptions of Eden* (Vol. No. 6). London:

IIED.

Fakir, S. (2000). *Transfrontier conservation areas: a new dawn for eco-tourism, or a new form of conservation expansionism*. Pretoria: IUCN South Africa.

Fakir, S. (2003, August 22). Transfrontier parks restore lost spiritual connection: communities divided arbitrarily from each other in the past will be among the in of new approach. *Business Day*.

Felgate, W. S. (1982). *The Tembe Thonga of Natal and Mozambique: an ecological approach*. Durban: University of Natal.

Ghate, R. (2003). Global gains at local costs: Imposing protected areas: evidence from central India. *International Journal of Sustainable Development and World Ecology*, 10, 377-389.

Grossman, D. (2003, October 29). *The Great Limpopo transfrontier park and conservation area*. Paper presented at the Paper presented under the teleseminar Transboundary Protected Areas Research Initiative of Carnegie Mellon University, Pittsburgh and University of Witwatersrand, Johannesburg, teleseminar.

Hardin, G. (1968). The tragedy of the commons. *Science*, 162, 1243-1248.

Hughes, D. M. (2003, October 1). *Going transboundary: scale-making and exclusion in Southern-African conservation*. Paper presented at the Transboundary Protected Areas Research Initiative of Carnegie Mellon University, Pittsburgh and University of Witwatersrand, Johannesburg, teleseminar.

IUCN (World Conservation Union). 2003. *Durban Accord*. www.iucn.org.

- Katerere, Y., Hill, R., & Moyo, S. (2001). *A critique of transboundary natural resource management in Southern Africa*. Harare: Paper no. 1, IUCN-ROSA Series on Transboundary Natural Resource Management.
- Koch, E. (1998). Nature has the power to heal old wounds. In D. Simon (Ed.), *South Africa in Southern Africa: reconfiguring the region*. Oxford: James Curry.
- Levine. (2002). Convergence or convenience? International conservation NGOs and development assistance in Tanzania. *World Development*, 30(6), 1043-1055.
- Mayoral-Phillips, A. J. (2002). Transboundary areas in Southern Africa: meeting the needs of conservation or development?, *'The Commons in an Age of Globalization'*, Ninth Conference of the International Association for the Study of Common Property. Victoria Falls, Zimbabwe.
- Metcalf, S. (1999). *Study on the development of transboundary natural resource management areas in Southern Africa: community perspectives*. Washington, D.C.: Biodiversity Support Programme.
- Moodley, S. E. (n.d.). *Environmental economics assessment of land use options: Mbangweni land claim settlement*. Braamfontein: IUCN-NETCAB Biodiversity Support Project.
- Musters, C. J. M., de Graaf, H. J., & ter Keurs, W. J. (2000). Can protected areas be expanded in Africa? *Science*, 287(1759-1760).
- NEPAD (New Partnership for African Development). (2001). *Action plan of the environment initiative*, from <http://www.touchtech.biz/nepad/files/documents/113.pdf>
- Poultney, C., & Spenceley, A. (2001). *Practical Strategies for Pro-Poor Tourism:*

Wilderness Safaris South Africa: Rocktail Bay and Ndumu Lodge, PPT Working Paper No. 1. London: ODI.

PPF. (2001). *Annual Review.* Stellenbosch.

PPF. (2002). *The facilitation and development of transfrontier conservation areas in Southern Africa: funding application in support of the Lubombo transfrontier conservation area.* Stellenbosch: Peace Parks Foundation.

PPF. (2003). *Profile of the Peace Parks Foundation (WWW page).* Retrieved 2 October 2003, 2003, from <http://www.peaceparks.org/>

RRP. (2002). *A park for the people? Great Limpopo transfrontier park-community consultation in Coutada 16, Mozambique.* Johannesburg: University of the Witwatersrand.

SADC (Southern African Development Community). (1992). *Declaration treaty and protocol of Southern African Development Community.* Gaborone, Botswana.

SADC (Southern African Development Community). (1999). *Protocol on wildlife conservation and law enforcement.* Maputo.

Singh, J. (1999). *Study on the development of transboundary natural resource management areas in Southern Africa: lessons learned.* Washington, D.C.: Biodiversity Support Programme.

South Africa. (1996). *Census 1996.* Pretoria: Statistics South Africa.

South Africa. (1997). *Report No. 274/97:* Department of Land Affairs.

South Africa. (2001). *Census 2001.* Pretoria: Statistics South Africa.

Tong, M. (ca. 2002). *Lest We Forget: Restitution Digest on Administrative Decisions.* Pretoria: South African Department of Land Affairs.

- TRAFFIC. (1997). *Food for thought: the utilization of wild meat in Eastern and Southern Africa*. Nairobi: TRAFFIC East/Southern Africa.
- van Riet, W. (2003, September 12). *A regional networking hub in the Southern African development community: the Peace Parks Foundation*. Paper presented at the 5th IUCN World Parks Congress, Durban, South Africa.
- Weiner, D., & Harris, T. M. (1999). *Community-integrated GIS for land reform in South Africa*. Morgantown, WV: WVU Regional Research Institute Research Paper #9907.
- Westing, A. H. (Ed.). (1993). *Transfrontier reserves for peace and nature: a contribution to global security*. Nairobi: United Nations Environment Programme.
- Westing, A. H. (1998). Establishment and management of transfrontier reserves for conflict prevention and confidence building. *Environmental Conservation*, 25(2), 91-94.
- Wolmer, W. (2003). Transboundary conservation: the politics of ecological integrity in the Great Limpopo transfrontier park. *Journal of Southern African Studies*, 29(1), 261-278.

CHAPTER 7

General Discussion

A common thread throughout the conservation and society discourse presented here is the human component - people need natural resources, and resources in turn need protection from, and management by, people. It is, therefore, impossible to separate the issues of environment and development in today's world. While individual protected areas can be pursued as island reserves of biodiversity and poverty alleviation can be viewed as an economic problem, human dependence on natural resources for their survival ultimately means that the two must be viewed as interlinked. As the struggle over management paradigms and funding priorities continue, the debate surrounding the dynamics of conservation and society are 'essentially political issues of who should have access to and control over resources' (Homewood, 2005, p.198). Yet the debate in Southern Africa is often fueled by misconceptions and a lack of empirical data.

The Community-integrated GIS (CiGIS) process was useful for revealing and interpreting the socio-spatial dynamics of conservation and society. The complementarity of participatory, quantitative, qualitative, spatial and temporal data highlighted contrasting epistemologies, attitudes and perceptions, and local histories of communities and conservation authorities. The CiGIS process demonstrated the multiple interpretations of a landscape held by different stakeholders. While social, cultural, ideological, and economic drivers are embedded within groups in the struggle over local land use, they also interact across time and space to influence the landscape. Local livelihoods do not exist in isolation from macro external institutions and much of the conservation and development debate is the product of past power, paradigms and practices. The cross scale and interdisciplinary research method employed here provided a platform beyond

simple examination of individual components of the discourse. The treatment of the dynamics of conservation and society as shifting and interlocked facets revealed the complexity of conceptualization and implementation at the ground level. While both biodiversity and local economics are important goals, a few key themes emerged from this thesis regarding the conservation and society dialogue:

- Conservation cannot be the sole provider of economic development in Maputaland. It should be conceived as one strategy in an arsenal of weapons to combat poverty and simultaneously provide natural resource security.
- Ending poverty should not be conceptualized only in terms of local natural resource use. A cross scale approach revealed that local biogeography and poor rural infrastructure are simply proximate causes of poverty while the root causes of poverty are often found at broader scales. Ending poverty requires tackling global issues, such as agricultural subsidies, debt relief, women's rights, and good governance (Sachs, 2005).
- The politics of who should control resources and how to manage them boils down to power, capital, and capacity to lobby preferred epistemologies and agendas.
- Access to and, control of, power, capital and capacity remain skewed between the developed world and the developing world, as well as within states and communities themselves.
- Access to resources does not always translate into an ability to benefit (Ribot, 2003). In Maputaland, access to communal land contributes to local livelihoods

but without external capital and capacity, local communities are not able to implement alternative land uses, such as nature-based tourism development.

- Any alternative land uses pushed by external institutions should be fairly and accurately portrayed to communities who often lack the information and capacity necessary to fully evaluate the alternatives.
- Nature-based tourism can be a valuable economic development tool, but it not a panacea for alleviating poverty. Tourism projects often take years to make a profit and thus require long-term commitment. The ability of conservation to provide jobs and cash to local households should not be oversold.
- Conservation risks its own security by overselling or inflating economic development benefits to local communities. If benefits fail to materialize in a timely manner, relationships can break down and lead to increased land use conflict.
- Rights-based approaches to conservation co management require the recognition of heterogeneous local people and representation schemes that incorporate social differentiation (Sullivan, 2001).
- HIV/AIDS poses the single greatest threat to both conservation and local livelihoods in Maputaland.

Land claims, resettlement, poverty, and HIV/AIDS are likely to be the defining issues of conservation during the next decade. The South African Deputy Environment Minister Rejoice Mabudafhasi supports land claims against protected areas and believes they will help redistribute land and conservation benefits to marginalized people (Stoddard, 2005).

Aside from being expensive and time consuming, land claims are also decisive issues that often pit rural people against park managers (Tong, ca. 2002). As tensions rise and negotiations take years to resolve, a heightened risk of conflict between the parties threatens local people, conservation staff, and the security of the natural resources.

Resettlement is also a likely source of future resource conflict. While the Mbangweni case study only required moving 59 households, the establishment of some transfrontier parks anticipates resettling thousands of households (Bice, 2004). It seems probable that not all residents will be eager to be displaced and conflict could be quick to ignite if promised benefits are not delivered or residents are dissatisfied in any way. Additional research, particularly multidisciplinary approaches, are needed on conservation-induced resettlement projects as they could become a standard feature in Southern Africa as new Peace Parks are proposed throughout the region.

The single biggest threat facing biodiversity conservation and rural livelihoods in South Africa is undeniably the HIV/AIDS pandemic. With up to 38% of people infected in Maputaland (Hlongwe, 2003), almost no household has been left untouched by the disease. HIV/AIDS and poverty are locked in a downward spiral as each amplifies the other's impacts (Pirot et al., 2001; Fenton, 2004). As households slip further into poverty, dependence on and degradation of natural resources increases due to lost household labor, lost traditional resource knowledge, lost feelings of land stewardship due to short life horizons, lost education of children, and lost income from sick and deceased family members. Such massive poverty and death implications receive wide-scale attention from

health and humans rights advocates, but conservation on the whole has yet to fully acknowledge the direct threats posed by HIV/AIDS. Not only is the disease causing higher staff attrition and increased personnel costs, but park resources are threatened by neighboring communities sinking deeper into poverty. Possible land degradation outside of protected areas could see parks become islands of intact resources (*i.e.* food, medicinal plants, etc.) desperately needed by local people, leading to increased conflict. Conservation and development programs, particularly the much-touted community-based conservation, will be tested by continually lost capacity due to illness and death of participants. Poor and crumbling co-management and decision-making structures will have a difficult time trying to prevent degradation of the very resource hoped to provide economic development. Obviously, conservation is not capable, nor responsible, for fighting the disease alone. Combating HIV/AIDS requires macro policy decisions beyond the scope of conservation. But protected area managers, multilateral donors, development practitioners, and natural scientists can at least acknowledge the risks and impacts and begin by integrating and mainstreaming HIV/AIDS issues into their projects.

This thesis provided a multidisciplinary treatment of conservation and society in Maputaland, South Africa. But it is only a starting point. The dynamics of conservation and society are constantly changing. At various points along the way there have been winners and losers in the struggle over natural resources and land use. Many of the opportunities and impacts on local livelihoods have been conceived solely in economic terms. However, conservation can also add value or detract from the social, cultural, and spiritual aspects of livelihoods. Protected areas affect the daily lives of millions of South

Africans, yet case studies that provide empirical evidence are lacking in the literature. Future research must continue to work across disciplines and employ novel methodologies that seek to inform in an integrated and holistic manner and that can strengthen policy and prescription for both biodiversity and rural livelihoods.

References

- Bice, J. E. 2004. *Great Limpopo: talk of the transfrontier (Official newsletter of the Great Limpopo Transfrontier Park)*. Peace Parks Foundation and the GEF/World Bank, Stellenbosch.
- Fenton, L. 2004. Preventing HIV/AIDS through poverty reduction: the only sustainable solution? *The Lancet* **364**:1186-1187.
- Hlongwe, M. 2003. *Umkhanyakude local economic development initiative*. Page 73. Haley Sharpe Southern Africa (Pty) Ltd, Durban.
- Homewood, K. 2005. Rural Resources, Local Livelihoods and Poverty Concepts in K. Homewood, editor. *Rural Resources and Local Livelihoods in Africa*. James Currey Ltd., Oxford.
- Pirot, P., M. Bartos, P. D. Ghys, N. Walker, and B. Schwartländer. 2001. The global impact of HIV/AIDS. *Nature* **410**:968-973.
- Ribot, J. C., and N. L. Peluso. 2003. A Theory of Access. *Rural Sociology* **68**:153-181.
- Sachs, J. D. 2005. *The End of Poverty: Economic Possibilities for Our Time*. The Penguin Press, New York.
- Singh, J. A. 2004. Why AIDS in South Africa threatens stability and economic growth in other parts of Africa. *The Lancet* **24**:1919-1920.
- Stoddard, E. 2005. *Land claims will not hurt S. Africa's Kruger Park*. Reuter's Foundation (www.reuters.com), Johannesburg.
- Sullivan, S. 2001. How Sustainable is the Communalizing Discourse of 'New' Conservation? in D. Chaty, editor. *Displacement, Forced Settlement, and Conservation* (pp. 158-187). Berghahn Press, Oxford.

Tong, M. ca. 2002. *Lest we forget: restitution digest on administrative decisions*. South African Department of Land Affairs, Pretoria.