

ELEPHANTS OF DEMOCRACY

An unfolding process of resettlement
in the Limpopo National Park

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Elephants of democracy

An unfolding process of resettlement in the Limpopo National Park

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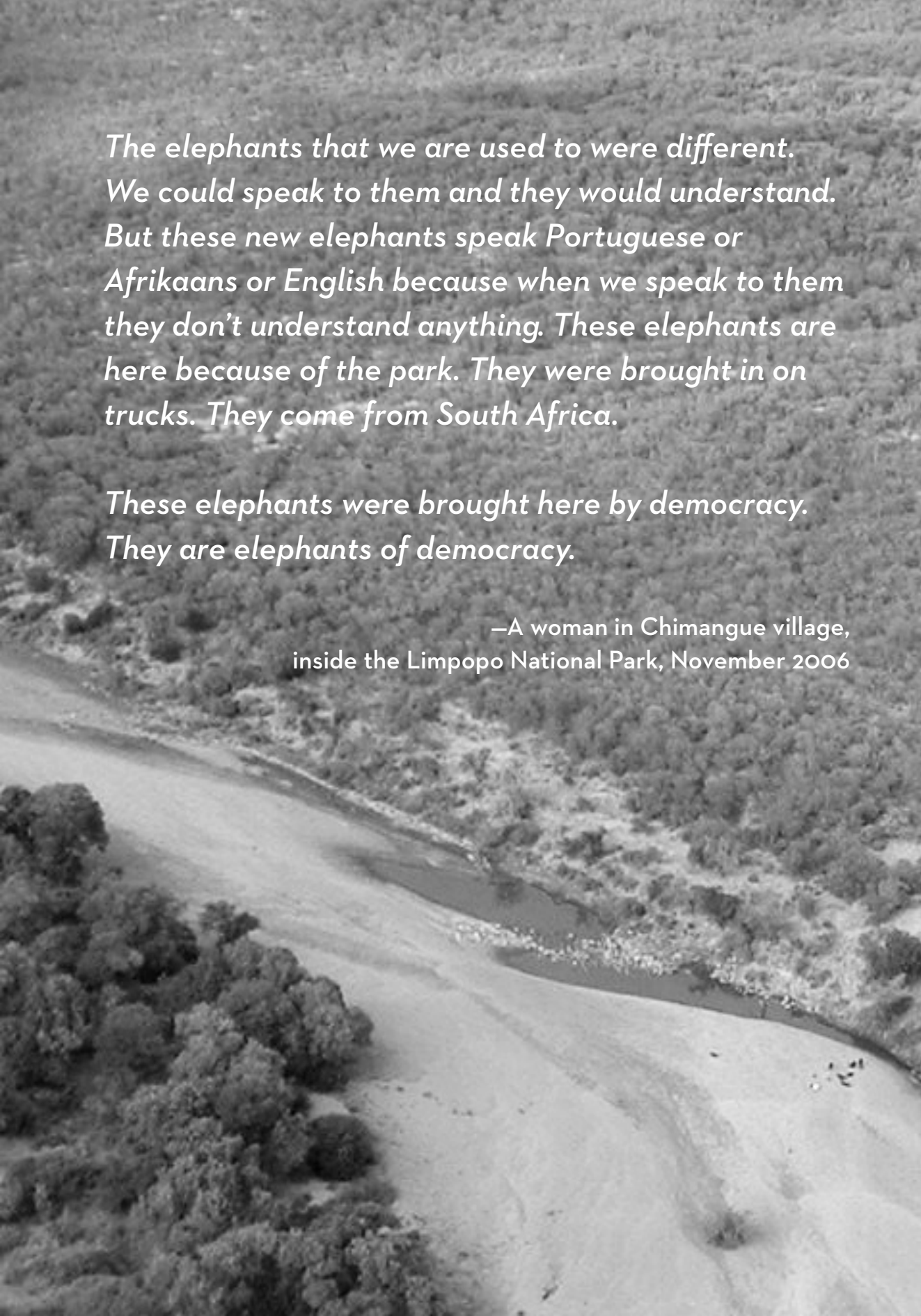
The drawings on the cover and pages of this thesis were made by women living in the Limpopo National Park.
They are the product of one of the activities carried out as a part of this PhD research.

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To my parents



An aerial photograph of a wide, sandy river meandering through a dense, dark forest. The river's banks are covered in thick vegetation, and the water appears calm. The perspective is from above, looking down on the landscape.

*The elephants that we are used to were different.
We could speak to them and they would understand.
But these new elephants speak Portuguese or
Afrikaans or English because when we speak to them
they don't understand anything. These elephants are
here because of the park. They were brought in on
trucks. They come from South Africa.*

*These elephants were brought here by democracy.
They are elephants of democracy.*

—A woman in Chimangue village,
inside the Limpopo National Park, November 2006

PREFACE

The title of this thesis, ‘Elephants of democracy’ was inspired by the epigraph—it is a metaphor that captures, from the point of view of many of the residents of the Limpopo National Park, the way that resettlement unfolded in practice. The woman, as she spoke, was referring to an event that took place in October 2001 in which elephants were translocated on trucks from Kruger National Park, in South Africa, to the area that would become the Limpopo National Park, in Mozambique as part of an inaugural ceremony to commemorate transfrontier cooperation. The Limpopo National Park was officially established a month and a half after the translocation of elephants, and the Great Limpopo Transfrontier Conservation Area was proclaimed the following year. For most of the people living in the area, rumors about the elephants brought in on trucks were the first news they had that the land on which they lived was about to become a park.

As any good metaphor, the ‘elephants of democracy’ evoke many images and can take on multiple interpretations. The woman who made this statement mentions how the new elephants speak a different language, a foreign language, and how she cannot communicate with them like she used to be able to with other elephants. Her comment reflects the changing socio-political context in Mozambique, the unintended consequences of these changes, and how, in her perspective, these changes have been driven by external, foreign elements. The quote also insinuates that the residents themselves have been left unaccounted for, uninformed of the changes, to adapt without even knowing which language they had to learn. The elephants of democracy are large, powerful beasts that can destroy anything in their path, but their eyesight is poor. They represent the introduction of democratic elements into a less than democratic environment and the nearly blind struggle to reconcile differences. This is only one of the many possible interpretations of the ‘elephants of democracy’, but there are others that you may like better. As Rudyard Kipling wrote, ‘Then Kolokolo Bird said, with a mournful cry, “Go to the banks of the great grey-green, greasy Limpopo River, all set about with fever-trees, and find out.”’ I invite you to read this thesis to discover for yourself.

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ABSTRACT

Unlike in the simulation game SimSafari, people cannot just be clicked in and out of a national park with a computer mouse. This thesis seeks to understand resettlement as an unfolding process. Displacement and resettlement caused by development projects such as dams or conservation areas, tend to be detrimental to the well being of resettled people, despite policies adopted to avoid adverse consequences. Based on in-depth fieldwork from 2006 to 2010, this study followed the residents of the village of Nanguene, the first village resettled from the Limpopo National Park, in southern Mozambique from pre-resettlement negotiations to post-resettlement transition in their new location. Two overarching questions in resettlement scholarship and practice are addressed: i) How is resettlement policy enacted in practice? and ii) What can an integrated understanding of the lives and livelihoods of resettling people contribute to the design of compensation?

The wider political economy and residents' participation in planning influenced the enactment of resettlement policy. The guiding policy was the World Bank Operational Policy on Involuntary Resettlement (WB OP 4.12); even though the option to resettle was presented as voluntary, in practice it was 'induced' volition. The changing meanings that actors gave to the notion of participation reflected changing power relationships, opening and closing the procedural space for the residents to influence decision-making about their own futures. Although participation in the planning process led to some level of empowerment and increased their opportunities to voice their needs and desires, the participatory procedures masked underlying coercion and manipulation. I conclude that the enactment process itself is as important, or more important, than the content of the policy in shaping the decisions made.

The southern end of Limpopo National Park, in the district of Massingir, is characterized by highly variable and marginal rainfall. Livelihoods are comprised of diverse activities, of which maize production is central. People strive to produce as much maize as possible from the rain that does fall; a good harvest can last for up to three years, serving as a buffer against food scarcity in subsequent years of crop failure. Therefore, having access to sufficient land on which to plant large areas when rainfall patterns are favourable for harvest is crucial for food security. Through a detailed study of the agricultural system in eight villages in the region, taking into consideration local practices, 15 years of daily rainfall and variable household assets we estimated that 1.37 ha per person is needed to be food self-sufficient. In compensation for resettlement, each nuclear family was provided with only 1 ha. Natural resource inventories and a spatial analysis of available natural resources indicated there were sufficient resources

of adequate quality to support the needs of the existing residents and the resettled residents in the post-resettlement location, with respect to cropping and grazing. However, despite apparently inclusive rules and norms of access, residents faced major challenges accessing the resources they needed. This highlights the need to understand the relationships among quantity and quality of and access to natural resources. Strengthening people's existing adaptive capacity may be key to reducing vulnerability to negative consequences of resettlement.

The influence that action-oriented research can have in complex settings, where different actors assert competing claims on the same resources, is also examined in this thesis. Our findings suggest that in a sensitive and complex research setting such as this one, the researcher may be able to contribute to more equitable and transparent negotiations by being present, asking questions and by timely and open sharing of preliminary results.

The resettlement initiative documented in this thesis appeared to have all the elements needed to make it a success. Despite this, differing expectations about the autonomy and resource control of the resettled village in its new location led half of the resettled households to return to the park only four months after resettlement. I suggest that policy cannot safeguard people from undue harm unless the process of enactment becomes a central focus of attention; compensation cannot bring development unless the resettling residents can define development themselves; and people cannot be resettled—they resettle themselves.

ABBREVIATIONS

AFD	Agence Française de Développement (<i>French Development Agency</i>)
ANC	African National Congress
ARA-SUL	Administração Regional de Águas-Sul (<i>Regional Water Administration –South</i>)
AWF	African Wildlife Foundation
CCR	Comite Consultivo de Reassentamento (<i>Consultative Committee for Resettlement</i>)
CFDR	Conservation-Forced Displacement and Development
DA	District Administrator
DFDR	Development-Forced Displacement and Resettlement
DNAC	Direcção Nacional das Areas de Conservação (<i>National Directorate for Conservation Areas</i>)
FRELIMO	Frente de Liberação de Moçambique (<i>Liberation Front of Mozambique</i>)
GLTFCA	Great Limpopo Transfrontier Conservation Area
GLTP	Great Limpopo Transfrontier Park
IIAM	Instituto de Investigação Agrária de Moçambique
INGC	Instituto Nacional de Gestão de Calamidades (<i>National Disasters</i>)
IRR	Impoverishment Risks and Reconstruction Management Institute
IUCN	International Union for Conservation of Nature
KfW	Kreditanstalt für die Wiederaufbau (<i>now called the KfW Bankengruppe</i>)
KNP	Kruger National Park
LGB	Larger grain borer
LNP	Limpopo National Park
MDG	Millenium Development Goal
MinAg	Ministry of Agriculture
MiTur	Ministry of Tourism
OP	Operational Policy
PIU	Project Implementation Unit
PPF	Peace Parks Foundation
RENAMO	Resistência Nacional Moçambicana (<i>Mozambican National Resistance</i>)
R&R	Resettlement and Rehabilitation
RRP	Refugee Research Program
SANParks	South African National Parks
TFCA	Transfrontier Conservation Area
UEM	Universidade de Eduardo Mondlane
WCD	World Commission on Dams
WB	World Bank
ZANU	Zimbabwe African National Union



Introduction:

Resettlement as an opportunity for development?

As we walked through the darkness on a moonless night, the sound of dry mopane leaves crushing beneath our feet was amplified in the silence, the wind was still. I could only tell the difference between the path and an opening in the trees by watching the bundle on the woman's head move up and down in front of me as she walked. We were walking to the dam's edge to deliver food to Safira's husband who had been protecting a small plot of maize for four months. In the dry season the water behind the dam recedes and the margins of the reservoir become suitable for cropping with no need for rain, but leaving the crops unguarded was like serving dinner to the hippos. Mavele, the shangaan word for maize, also means breast, the lifeline of every household. Sleeping each night for four months in a makeshift shelter to protect a few square meters of maize is one of the many practices people in the region employ to produce enough food to live on. Natural resources form the core of livelihood activities and erratic rains make food security a constant struggle. When the area in which Safira and her husband lived became a national park, new threats to food security emerged, including crop-raiding elephants. The residents of their village, the village of Nanguene, were resettled to a location outside of the park, to make room for tourists, and for elephants. This study tracks the experiences of the residents of Nanguene over four years, from the period prior to resettlement through to their subsequent attempts to re-establish livelihoods in a new location.



Residents of the LNP who live near the Massingir reservoir keep fires lit to keep the hippopotamuses from eating the maize planted along the margins in the dry season. Photo credit: J. Milgroom, May 2007

INTRODUCTION

Each year an estimated 15 million people are displaced as a result of development projects (Cernea 2007). The number of people displaced by 'development' has risen from 10 million to 15 million per year in the last decade alone. Current trends suggest that this figure will keep climbing as the number and scale of projects that lead to the displacement of people, such as dams, roads, mines and conservation areas, steadily increase (Cernea and Schmidt-Soltau 2006; Oliver-Smith 2009a; Mehta and Napier-Moore 2010). Displacement that is caused by development projects, known as development-forced displacement and resettlement (DFDR), is a hidden human rights problem (Mehta 2009) because it is seen as an unavoidable consequence of development (Dwivedi 2002; Chakrabarti and Dhar 2009). Many international donors, governments and development agencies argue that resettlement should be carried out as if it were a development project itself that can improve people's lives (IFC 2002; World Bank 2004). However, despite attempts to compensate for losses, evidence suggests that DFDR tends to culminate in long-term and often severe social, economic and cultural impoverishment for resettling and host-village¹ residents (Cernea 1997; WCD 2000).

This thesis explores resettlement as a process. The study adopts the recommendation of Li (2007: 270) who argues for 'combining attention to the rationale of improving schemes with the investigation of what happens when these schemes entangle the world they would regulate and transform'. Based on in-depth fieldwork carried out from 2006-2010 with the residents of the first village resettled from the Limpopo National Park (LNP) in southern Mozambique, I analyse a planned resettlement initiative and how it unfolded in practice. Two overarching questions in resettlement scholarship and practice are addressed: i) How is resettlement policy enacted in practice? and, ii) What does an integrated understanding of the lives and livelihoods of resettling people mean for the design of compensation? These two questions are described briefly here, and in more depth later in the chapter.

Policy implementation continues to be identified as one of the most important barriers impeding successful resettlement, but how resettlement policy works in practice is still insufficiently understood (Rew et al. 2006). To contribute to our understanding of this process, this thesis explores policy enactment. Policy enactment entails the 'creative processes of interpretation and translation, that is, the recontextualisation through

¹ The term 'host' village or host population refers to a situation where a village is resettled to an area where another village already is situated. The existing village agrees to host the resettled village. One common criticism of resettlement is that the host village has to share resources, but the host population does not benefit from the resettlement project. Therefore many resettlement projects now budget for development projects in the host village, such as an improvement in infrastructure, schools, pumps, fences etc.

reading, writing and talking, of the abstractions of policy ideas into contextualised practices' (Braun et al. 2011: 586). Conceptualizing policy implementation as enactment shifts the focus of an analysis of the policy process from the policy artefact to the actors involved in the policy process, and highlights the importance of context. This conceptualization, in turn, aims to explain why resettlement is repeatedly detrimental for the lives of resettled people.

Inadequate or insufficient compensation is another major challenge of resettlement (Cernea 2003). Most studies of resettlement have been carried out from a social science perspective, whereas the complexity of the resettlement process is better captured by an interdisciplinary approach that takes in consideration the interaction of factors that come into play (Colson 2007). Compensation tends to be based on a valorisation of the resources that people use. However, use of specific resources is dependent on social relationships and on how other resources are used. Through an integrated understanding of lives and livelihoods, therefore, this research explores valorisation of resources from the resettling residents' point of view, with the aim of contributing to our understanding of the role of compensation in resettlement processes.

The research was carried out as part of the interdisciplinary research programme, Competing Claims on Natural Resources: Overcoming Mismatches in Resource Use Through a Multi-scale Perspective. This chapter lays the groundwork for the empirical chapters by further introducing the problem of resettlement and the two overarching questions that this thesis addresses. This is followed by a brief overview of pertinent historical and contextual information about Mozambique and the case study area, the research objective, main research questions, and an overview of the thesis.

Resettlement: the problem, the policy and the practice

Eviction, displacement, relocation and resettlement

Eviction, displacement, relocation and resettlement all generally refer to the same phenomenon, that is, of moving a population from their site of residence to another location. Each term, however, invokes a different framing of the phenomenon. The pre-analytic choice of the frame has important implications for research and resettlement in practice. Eviction conjures up images of trucks or bulldozers demolishing houses and fields and conveys the overarching power of the state to force people to leave their residence without negotiation or compensation (Dwivedi 2002). Displacement summons up images of a less violent process, as something quietly taking place, like water in a newly built dam slowly rising, swallowing a village little by little. Displacement is a passive word; while it implies that people are dislodged from their homes it is not explicit who or what is making them move, where they are to go, or how they are to

live in their new location. Research on displacement has prompted a clarification of the subtleties of its definition as a practice, that can be physical, denoting the exclusion of people from their place of residence, and/or economic, denoting the restriction of access to resources used for livelihood activities (Horowitz 1998; Cernea 2005). Relocation refers to the physical transfer of people from one place to another, invoking images of people being picked up and dropped off without follow-up. Resettlement, often accompanied by the word ‘rehabilitation’ (especially in the Indian context, as in resettlement and rehabilitation (R&R) (Parasuraman 1999)), is, in theory, the least violent term of the four, conveying a sense of a planned action of relocation plus the rehabilitation of livelihoods (see also de Wet 2000: 1). Its use signals the normative intention that relocation is accompanied with at least minimal compensation and the follow-up support of the state (Turton 2006).

In most of this study I use the term resettlement. This choice is not made in order to legitimize the act of moving people from their homes nor to portray the experience as acceptable, but because it is the term that comes closest to describing the processes that I observed in the LNP. In this thesis, the focus on understanding the process of negotiating compensation and conditions for resettlement has allowed the study to make new contributions to resettlement scholarship and practice.

The problem of development-forced displacement and resettlement

The ethics of development-forced displacement and resettlement are hotly contested in development circles (de Wet 2009; Oliver-Smith 2009b) because of the magnitude of suffering that it tends to cause for resettled populations and the challenges that it poses for doing it well (Rew et al. 2006; de Wet 2009). The majority of DFDR projects lead those directly affected into a downward spiral, economically, socially and culturally (Brockington 2002; de Wet 2006; Koenig 2006). The adverse consequences tend to be long-term (Parasuraman 1999) and rehabilitation of resettled people’s livelihoods is recognized to be one of the most difficult challenges in development (Rew et al. 2006). DFDR is fundamentally different from population displacement caused by war, natural disasters or voluntary resettlement schemes (Parasuraman 1999; McDowell and Morell 2007). Whereas war refugees and victims of natural disasters hope to be able to return to their homes and are often assisted by international humanitarian efforts, DFDR pushes people permanently off their land and out of their livelihoods, often with minimal assistance or follow-up (Oliver-Smith 2009a). Whereas voluntary resettlement schemes attract people away from their homes with promises of a better life, DFDR is almost always involuntary (despite any incentives provided) and is rarely beneficial for the resettled population (McDowell and Morell 2007; Oliver-Smith 2009a).

Displacement for the sake of development has been justified by the concept of eminent domain², that is, the power of the state to expropriate private property for a public use. The act of relocating people is invariably a 'political phenomenon in an environment of unbalanced power scales, involving the use of power by one party to relocate another' (Oliver-Smith 2009b: 5). The belief is widespread among decision-makers that the greater good, such as national economic growth, justifies some loss for resident populations (Koenig 2006). However, who determines what constitutes the 'greater good' and which 'public' benefits from such acts are questions that merit close consideration (Ramanathan 2009). The construction of dams, for instance, is one major cause of involuntary resettlement. The World Commission on Dams (WCD) report concluded that the beneficiaries of dam projects tend to be urban dwellers, commercial farmers and industries, while those who bear the burden of the project are rural dwellers, subsistence farmers, indigenous people, ethnic minorities and, within these categories, women more than men (WCD 2000: 125). These groups tend to be over-represented among the displaced (WCD 2000: 124), and typically have less access to the skills and resources that might allow them to resist displacement or gain leverage in negotiation processes (Lustig and Kingsbury 2006).

Dwivedi (2002) makes a useful distinction among approaches to resettlement, calling the two extremes reformist-managerial and radical-movementist. He describes the reformist-managerial approach as stemming from the belief that development projects are necessary and therefore that resettlement is inevitable. Research, policy and resettlement initiatives that adopt this approach mainly focus on minimizing the negative consequences of resettlement. The radical-movementist approach, on the other hand, positions displacement as the manifestation of a developmental crisis. It raises fundamental questions about rights, equity, and the assumptions that underlie the concept of 'development' (Dwivedi 2002). In practice, the radical-movementist approach is most visible in social movements around displacement, but it is increasingly appearing in academic research (Dwivedi 2002; Chakrabarti and Dhar 2009; Mehta 2009). Dwivedi's dichotomy highlights one of the reasons that resettlement is inherently an intractable problem: whether or not people should have to move is a normative, value-laden and contested question, yet projects proceed to resettle people without first making explicit or resolving the issue.

Conservation-forced displacement and resettlement

Conservation-forced displacement and resettlement (CFDR) is a type of development-driven displacement and resettlement where the driving force behind displacement or

2 Eminent domain comes from the latin phrase dominium eminens that means supreme lordship

resettlement is the establishment of a protected area or the enforcement of legislation in an existing protected area. The urgent need upheld by international conservation organizations to protect rapidly dwindling and highly threatened biodiversity across the world has given rise to a proliferation of new conservation areas (West et al. 2006). In the late 1980s initiatives to increase local people's participation in and benefit from nature conservation through community-based models of resource management has led to a shift away from the previous dominant model, known as 'fortress conservation' (Hulme and Murphree 1999). Attempts to marry conservation and development objectives have produced variable results. Preservationist, command-and-control models of nature conservation are swinging back into fashion (Hutton et al. 2005).

Amidst continued debate about the social impacts of nature conservation (Adams et al. 2004; Brockington et al. 2006; West et al. 2006), the relationship between conservation and development (Agrawal and Gibson 1999; Minter and Miller 2011) and the role of neoliberal market forces in promoting conservation (Buscher and Whande 2007; Igoe et al. 2010), the displacement of people from existing conservation areas is expected to continue to rise (Brockington and Igoe 2006; Cernea and Schmidt-Soltau 2006). Regardless of whether or not people and wildlife can cohabit harmoniously in conservation areas (Redford and Sanderson 2000), evidence suggests that the benefits of nature conservation are rarely felt locally, especially when conservation initiatives entail displacement (Agrawal and Redford 2009).

CFDR differs from other kinds of DFDR in that it is evidently more likely to be carried out without any guiding policy, and with violence (Cernea and Schmidt-Soltau 2006). This is partially because of the remoteness of conservation areas, where actions may be hidden from the public eye. CFDR also differs from other kinds of DFDR in that the original land remains suitable for human settlement. This leaves open the possibility for people to return to their land if post-displacement/resettlement conditions are not satisfactory. Fewer studies have been carried out on CFDR than on cases of DFDR (Agrawal and Redford 2009) and to date there are no policy guidelines specific to resettlement from conservation areas.

The World Bank's involuntary resettlement policy

In 1980 the World Bank (WB) developed the first international policy for resettlement (Cernea and McDowell 2000). After a thorough review of resettlement projects funded by the bank (World Bank 1994b), the bank's in-house sociologist, Michael Cernea, developed the Impoverishment Risk and Reconstruction model (IRR) (Cernea 1997). The model defines the risks commonly associated with resettlement, including economic (landlessness, joblessness and loss of access to common property), socio-cultural (social

disarticulation, marginalization) and social welfare risks (homelessness, food insecurity, and morbidity and mortality). The WB integrated the IRR model into its involuntary resettlement policy. The policy has undergone a series of revisions, most recently in 2001, leading to the formulation of the World Bank Operational Policy on Involuntary Resettlement (hereafter, WB OP 4.12). I here draw attention to two important principles in the WB OP 4.12, because of their pertinence to the case analysed in this thesis. The first states that resettled residents should benefit from the development project that causes their resettlement and that resettlement should improve their well-being, leaving people better-off than before. The second principle is that the people to be resettled should participate in the resettlement planning process to improve efficiency and to ease resistance to resettlement (Cernea 1997; WCD 2000; World Bank 2004; Koenig 2006; de Wet 2009). WB OP 4.12 has become the standard used to judge the adequacy of resettlement schemes in both WB and non-WB funded projects around the world (Chatty and Colchester 2002). It has been adopted as the foundation for many national policies on resettlement (Cernea and Schmidt-Soltau 2006).

Underlying the policy is the belief that doing resettlement ‘correctly’ can minimize or avoid the risks outlined in the IRR model (Cernea 1997). Some researchers believe that the WB OP 4.12 represents a step backwards insofar as it legitimizes forced resettlement as inevitable and necessary, through (partial) compliance with operational policy procedures (Downing 2002; Scudder 2005; Clark 2009a; de Wet 2009). WB OP 4.12 justifies resettlement based on a definition of development that may not be shared by the resettling people. Although, as has been noted, WB OP 4.12 emphasizes the need for compensation and livelihood rehabilitation to avoid impoverishment, its primary focus is economic. Other, well-documented, negative consequences that are not covered by the policy include the loss of cultural heritage, erasure of evidence of people and their political and historical significance from the landscape (Carruthers 1995; Brockington 2004; Brooks 2005) and people’s loss of power and control over their own environments (Colson 1971; Dwivedi 1999). WB OP 4.12 also fails to consider the political and ethical context of displacement (Agrawal and Redford 2007), gender-specific experiences of displacement (Koenig 1995; Colson 1999; Mehta 2009) and the cultural dissonance that resettlement causes (Downing and Garcia-Downing 2009).

Furthermore, Clark (2002) questions the extent to which international donors, and the WB in particular, are held accountable for implementing their own standards. Clark (2009a: 196) describes how the most recent changes made to the WB OP 4.12 in 2001 have promoted a ‘check-list approach to policy compliance and to decrease emphasis on improving results on the ground’. She argues that in an attempt to operationalize and facilitate the implementation of the policy, these changes have in effect facilitated

minimal compliance, and has reduced the World Bank's responsibility for certain kinds of consequences of displacement and resettlement (ibid).

Resettlement in practice

What is successful resettlement? Scudder (2005: 32) considers it to be a process that leaves people better off or at least in a condition equal to their pre-resettlement state and that is environmentally, economically, institutionally and culturally sustainable into the second generation. De Wet (2006: 1) takes successful resettlement to mean that the resettled people are economically better off and living in socially stable and institutionally functional communities in a sustainable manner. Koenig (2006: 6) goes further in stating that if resettlement is to be presented as a development initiative, the definition of development must first be defined, and take into account the distribution of power.

Carrying out resettlement as a development initiative is a complex undertaking. There is little agreement, or even discussion about what 'development' is, what it means to those who are the targets of a development project, and how to assess it. It is precisely the lack of capacity, willingness, or of an enabling political environment able to come to terms with the situated complexity that is, according to some researchers, one of the most important factors explaining the consistent failure of resettlement projects (de Wet 2006). This is aggravated by the fact that national governments often see imposed standards for resettlement as an infringement to their sovereignty (Oliver-Smith 2009a).

The complexity of resettlement arises in part because, as a value-laden undertaking, resettlement processes are riddled by conflicts of interests, operating in multiple ways. Moreover, projects that require resettlement of resident populations tend to be large-scale, well-funded, and overtly politically charged endeavours that do not have resettlement as their main purpose. The resettlement aspect is secondary to the main project goal and is seen as something that must be 'taken care of' before the main project can go ahead (Fisher 2009). A national government (or project implementer) typically is directly responsible for the advancement of the main project as well as the displacement and the well-being of the displaced—two generally contradictory tasks (Clark 2009b). Further, because resettling people is costly, time-consuming and the benefits are not obvious (Oliver-Smith 2009a), conflicts of interest arise within the implementing organization and tensions mount when resettlement processes delay the main project.

As de Wet (2009: 79) says: 'No matter how well the resettlement process is planned

and funded, no matter how participatory the exercise is, the complexities are such that it simply cannot be guaranteed that people subjected to forced resettlement will emerge from the process any better off than before'. This conclusion, however, leaves resettlement practitioners at a dead end. This thesis aims to gain a better understanding of the complexities of resettlement processes and how to resolve the tensions identified above.

RESETTLEMENT AS AN UNFOLDING PROCESS

This thesis is framed by the understanding, derived from the resettlement literature, that resettlement is inescapably a lengthy and unpredictable process during which many changes occur. The process, which might last decades, spurs many other social changes that, in turn, influence the way in which resettlement unfolds (Oliver-Smith 1991). Although the nature of resettlement as a process is recognized in the literature (Colson 2007), most studies on resettlement are carried out after the move itself and focus on the changes in livelihoods or well-being (de Wet 2006). Many are based on the post-resettlement situation exclusively or based on ex-post reconstruction of facts about pre-resettlement. This is largely because of the focus on impoverishment risks and income restoration that Cernea's IRR model brought to the study of resettlement (de Wet 2006: 210).

Understanding resettlement as a process requires a deeper look at political or economic changes apparently external to the process of interest, that are occurring at the same time as resettlement is unfolding. A focus on the unfolding process calls attention to factors such as resistance or responsiveness on the part of the officials or donors involved (de Wet 2006: 210). Few studies have analysed the process as it unfolded, with the exceptions of Colson (1971), Chambers (1970) and Fahim (1981; 1983), all of which document resettlement caused by dam projects. No long-term studies to date have been made of the process of resettlement from a conservation area.

Policy enactment

Ethical considerations, the negative experiences of DFDR and continuing investment in projects that displace people from their homes lead many authors and practitioners to call for stronger international standards and policies, better external enforcement of these standards, and independent monitoring to safeguard human rights (Brockington et al. 2006; Clark 2009b). However, it is unclear how or if international policies on resettlement can minimize the risks of impoverishment. The adoption of a 'best practice' international policy, regardless of the content of the policy, clearly does not guarantee that it will be implemented in line with the written policy (Oliver-Smith 2009a). The implementation of resettlement policy continues to be identified as one of the most

important barriers impeding successful resettlement, as described above. However, how resettlement policy is implemented in fact remains under-researched (Rew et al. 2006). Understanding how resettlement policy is implemented in practice is likely to contribute to better-informed resettlement practice.

The problematic nature of policy implementation is not unique to resettlement. It is an issue that has been studied by policy analysts since the 1970s (McLaughlin 1987). A policy process consists of the series of ensuing events and set of practices that take place as a result of the introduction of a policy artefact into a particular context. One of the major conclusions of the policy implementation literature is that policy cannot be implemented in a linear sort of planned process; it is enacted. As defined above, policy enactment entails the 'creative processes of interpretation and translation, that is, the recontextualisation through reading, writing and talking, of the abstractions of policy ideas into contextualised practices' (Braun et al. 2011: 586). Researchers have shown how the same policy artifact can give rise to different events, outcomes and practices in different contexts (DeLeon and DeLeon 2002). Because individuals experience and interpret policy ideas reflexively on the basis of their own agency, perceptions, and knowledge, the 'actors' exposed to the policy process shape the enactment of policy in practice (Lipsky 1971; Hofmann 1995; Yanow 1995; DeLeon and DeLeon 2002). The policy process, then, can be seen usefully as a struggle for the determination of meanings (Stone 1988; Yanow 1996).

Policies are not just instrumental tools, they are also expressive statements about values and identity (Yanow 1996: 23). Trends in development policy, such as the incorporation of participation into development policies, projects and programmes, are examples of policies that express the values of the donor countries and organizations. Conversely, the absence of policy may indicate the underlying values (Cernea 1993). Before the development of the WB resettlement policy, resettlement (eviction, to be more precise) was taking place in a policy vacuum (Cernea 1993). The absence of resettlement policy is, in fact, 'policy by default' and governments may prefer to maintain a policy vacuum rather than establish regulations that are likely to be controversial and problematic (Parasuraman 1999: 21). Today, the WB involuntary resettlement policy is obligatory for projects funded by the WB as a social safeguard intended to minimize negative consequences of WB projects. It is an expression to the general public of a value held by the WB about the importance of not harming people in the process of a development project. However, the underlying values and identities held by individuals in governmental organizations and embedded in a particular political culture remain unchanged, despite the imposed adoption of the social safeguard measure.

A project that does a poor job at resettlement is likely to earn a bad reputation, threatening the success of the project itself, and risking severe delays (Rew et al. 2006). As with any policy, resettlement policy itself is modified in the process of implementation (Rew et al. 2006) based on the discretion of the people responsible for carrying out the development project. Resettlement officers, forming part of what has been called the 'street-level bureaucracy' (Lipsky 1971), ultimately determine many of the details of resettlement such as the material compensation, as well as the treatment of the resettled residents (Rew et al. 2006). However, the people responsible for the translation of policy vary in their commitment to its content and attribute their own meaning to it in their day-to-day decisions and actions. This thesis, therefore, reformulates the crucial question of how resettlement policy is implemented and asks, how is resettlement policy enacted in practice?

The way that WB OP 4.12 has been applied in and adapted to diverse project contexts has been reported with respect to livelihood outcomes (Heggelund 2006; McDonald et al. 2008). Research on resistance, the negotiations undertaken to ease the resistance, and the conditions under which resistance has and has not been effective also provides valuable insight into how resettling people have shaped policy outcomes (Hall 1994; Brand 2001). Beazley (2009) describes how in one case the combination of a more inclusive political culture and a more engaged civil society made it possible to negotiate compensation in a way that was favourable to resettling residents in the initial stages, although the effects were short-lived (Beazley 2011). Rew et al. (2006) theorize resettlement policy in practice metaphorically; how the policy travels down the 'institutional landscape' from the policy makers 'on the hill' to the 'plateau', representing state or regional administration, and then to the 'swamp' where resettlement policy ultimately gets implemented. Dwivedi (1999) describes how day-to-day implementation of resettlement policy influences people's perception and reaction to risks associated with displacement. All of these contributions help to define conditions, actors and actions that shape the policy-enactment process, but there are few studies of how people give meaning to resettlement policy and how this, in turn, influences the actions that take place.

An integrated understanding of lives and livelihoods

One of the main components of resettlement policy in practice is the design of compensation. Many studies have shown that compensation is insufficient for securing livelihood rehabilitation and under-compensation is a well-documented cause of impoverishment (Cernea 2003). The practical limitations of the compensation principle have been scrutinized by researchers from a social science perspective (for an extensive list, see Cernea 2003: 12-13), but an interdisciplinary approach may be more effective

for understanding the diversity of interactions that make up the resettlement process (Colson 2007), including the role of compensation in livelihood rehabilitation. Decisions about how to best compensate resettled people are often made on the basis of an insufficient understanding of livelihood practices and the social and ecological relationships in which these are embedded (Dwivedi 1999; Fujikura et al. 2009). Consultancy reports written by foreign resettlement experts tend to inform such decisions, whereas consultants rarely have the opportunity to become familiar with local livelihoods first-hand, much less with the intricacies of the situated human-environment relationship.

Furthermore, Cernea's IRR framework breaks impoverishment into risks that are treated independently of each other. Because the framework is the basis for the design of the compensation package provided to resettled people, in practice this leads to a lack of a concerted approach to the reconstruction of livelihoods (Agrawal and Redford 2009). Compensation for resettlement according to the WB OP 4.12 should, whenever possible, replace the resources held pre-resettlement with equivalent resources in the post-resettlement location, i.e., land for land. Compensation should also take care to avoid the identified risks, for example, by providing houses to avoid homelessness and land to avoid landlessness. However, what can be offered in compensation is often limited by the availability of equivalent resources in the post-resettlement location. In such a case, it is recommended that employment or other non-land based compensation is provided in lieu of land (World Bank 2001). The WB OP 4.12 focuses on making inventories of people's assets, and not on understanding their livelihood practices. Therefore, we pose the overarching question, what does an integrated understanding of the lives and livelihoods of resettling people mean for the design of compensation?

Rural livelihoods can be highly diverse, both within an individual household and among households in the same village. Livelihoods can consist of combinations that can vary markedly over time and space. They might include, for instance, dependence on natural resources for food, cropping, fodder, medicine, fuel and fibre, sporadic or regular harvesting of natural resource products for sale, remittances, animal husbandry, wage labour and a host of other activities (Ellis 1999). Especially in marginal environments people manage to carve out livelihoods only through combinations of activities and location-specific practices. Compensation regularly fails to capture and account for this complexity in livelihoods and resource use practices (Morvaridi 2004; Fujikura et al. 2009).

Beyond understanding the complex nature of livelihoods, the social dimensions of

resource use are equally important. Natural resources have multiple material uses for different actors that can change in response to shifts in the social and environmental context (Gengenbach 1998; Agrawal and Gibson 1999; Leach et al. 1999). Resource use is shaped by informal and usually tacit rules about access (Berry 1989b, 1992; Ribot and Peluso 2003). Making patterns of use or rules of access explicit, as is necessary in the valuation of resources for the design of compensation, is genuinely difficult and likely to be contested (Hebinck 2007; James 2009). Moreover, the spiritual and cultural meaning that people give to their natural landscape and resources also can be hard to determine and may change over the course of the resettlement process (Chakrabarti and Dhar 2009).

This study explores in-depth the lives and livelihoods of the residents of the region of Massingir from multiple perspectives. This integrated and in-depth understanding of lives and livelihoods also allowed the research to respond to questions raised by both the resettlement team and the resettling residents about the adequacy of the compensation package provided.

THE STUDY AREA

A brief history of the research site helps to position the findings developed this study; for an in-depth history see Witter, (2010). Following this brief historical account, I provide a sketch of the background of the resettlement of Nanguene.

A brief history

The area that is now the LNP, located in northern Gaza Province, in southern Mozambique historically been a place of human mobility caused by war, drought, floods and labour opportunities in South Africa. Between 1000 and 1500 AD a clan of the Tsonga people migrated north along the southern Limpopo River and settled in the area (Junod 1962; Smith 1973). The Tsonga, in turn, were displaced by Gaza Nguni encroachments from the south in the 19th century (Harries 1989). Witter (2010: 77) argues that some of today's residents along the Limpopo settled in their current locations in an attempt to evade Gaza Nguni domination. The term Shangaan, commonly used to describe the residents of the region, is derived from Shoshangane, the first king of the Gaza Nguni rule, but it does not accurately denote ethnicity (Junod 1962; Liesegang 1977; Harries 1989). Today the term Shangaan is also used to refer to the language that is spoken primarily in Gaza Province, and also refers colloquially (mashangana) to the resident population of Gaza and Maputo Provinces³.

3 In the province of Maputo a language closely related to Shangaan, called Ronga, is spoken, but people refer to themselves as Shangaan people.

By the 1870s, labour migration from the area to South Africa was common (Harries 1994; Newitt 1995). Initially, people migrated to work in the mines (Kimberly), collieries (Natal, Witbank), and sugar plantations (in both South Africa and Mozambique), preceding the later waves of migration to the goldmines on the Rand from the 1880s onwards (Isaacman and Isaacman 1983). The Witwatersrand Native Labour Association (WNLA), the recruitment arm of the South African mines, established bases in Pafuri and Mapai (see Figure 1.1) as early as 1918. In 1895 Mozambique came under formal colonial rule (Roesch 1991). The Portuguese later instituted policies that enabled them to benefit from the outflow of labour: labour migration became organised as an obligation, fees were collected to travel to the mines, and taxes and deferred payments were used to encourage the return of workers to Mozambique (Newitt 1995). In 1975, the WNLA recruited 19% of the active male population in Gaza (Wardman 1985).

During the peak period of labour migration the majority of families had at least one member working in South Africa and some had as many as three or four. Money earned in South Africa allowed for rapid accumulation of cattle, so that Gaza province soon had the highest numbers of livestock in all of Mozambique. The high numbers of men working in South Africa created a labour shortage in the households that stayed behind (entailing an increased workload for women), as well as on the Portuguese-owned farms (Wardman 1985; Roesch 1991). In response, the Portuguese government instituted a regime of forced labour, called *Chibalo*, in the 1920s (Isaacman and Isaacman 1983; Pitcher 1995). This forced labour regime was one of the many reasons that in 1964 the *Frente de Libertacao de Moçambique* (FRELIMO) began an armed struggle against the Portuguese that took place mainly in the north of the country.

When independence was gained in 1975, the country's population was politically fragmented, poor and illiterate. Most of the private and public infrastructure had been destroyed, public services did not exist, nor did a modern private sector (Lunstrum 2007). In 1976, recruitment of Mozambican workers for the South African mines dropped sharply from 19% to 4% of the population (Wardman 1985). The Marxist-socialist government of FRELIMO established a single-party state and promoted a socialist and nation-building agenda that left little room for individual or local initiatives (Bowen 2000). FRELIMO promoted state farms and cooperatives, relocated people into communal villages (*aldeias comunais*) and abolished private property. By the 1980s, the state farms and cooperatives had failed and the restriction of the private markets brought the country close to famine (Pijnenburg 2004: 56).

Soon after independence in 1975, Mozambique had become a base for militants operating under ZANU (Zimbabwean African National Union) and the ANC (African

National Congress) militants (Newitt 1995). This created further conflict for the new state, with both the Rhodesian and South African forces destroying the remaining Mozambican infrastructure (Newitt 1995). The continued fighting and dissatisfaction with the poor success of FRELIMO policies created a breeding ground for the birth of the opposition party, Resistência Nacional Moçambicana (RENAMO). This opposition was supported by the Rhodesian secret service (Pijnenburg 2004), and was later seen as a 'puppet of the South African apartheid regime' (Manning 1998: 161). When Zimbabwe gained independence, South Africa became more active in supporting RENAMO. The FRELIMO government in the meantime was receiving support from various communist countries as Mozambique became co-opted into the cold war. The war that ensued between supporters of FRELIMO and RENAMO (1976-1992) left the country in shambles. RENAMO engaged in terror tactics that left a tragic legacy in rural places like northern Gaza province, the current location of the LNP (Lunstrum 2009). Many rural areas became practically deserted as people fled across the borders of neighbouring countries (an estimated two million) or were displaced to urban areas within Mozambique (an estimated four million), and most infrastructure was destroyed (Newitt 1995). More than a million people lost their lives and Mozambique was left one of the poorest countries in the world (Newitt 1995).

The end of the civil war in 1992 marked a gradual shift to market capitalism, democracy and an administrative decentralization that attempted to promote local-level autonomy (Abrahamsson and Nilsson 1995). The political culture that exists today in Mozambique has been shaped by these dramatically changing relationships between the state and its citizens. West (2005) describes some differences between pre-colonial and FRELIMO socialist government's relationships with its citizens with the kinds of state-citizen relationships that characterize post-socialist 'democratic' Mozambique. Transition to 'democracy' in Mozambique has encouraged a rapid transition toward individual profit seeking that has brought in its wake corruption, elite private gain, reduced social solidarity, and weaker accountability of the government to the well-being of the general populace (West 2005; Sumich 2010).

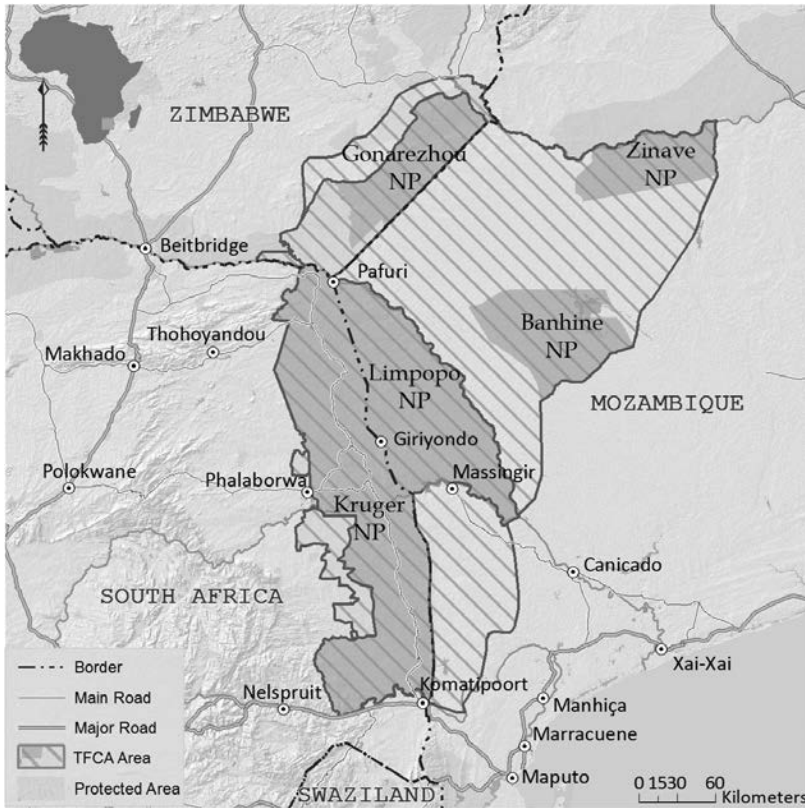


Figure 1.1. The Great Limpopo Transfrontier Conservation Area (map source: Peaceparks.org)

The Shingwedzi Nature Reserve, Coutada 16 and the LNP

The plan to create the LNP was made possible by the end of the armed conflicts and an official shift to democracy. Before becoming a national park the area had been known as the Shingwedzi Nature Reserve from the 1930s until 1969, when it was converted into a hunting reserve for the Portuguese known as Coutada 16 (Mavhunga and Spierenburg 2007). The Limpopo National Park was established in 2001, as a component of a visionary project, the development of the Great Limpopo Transfrontier Conservation Area (GLTFCA). The GLTFCA, established in 2002, connects national parks in Mozambique (Banhine, Zinave and now the Limpopo National Park), South Africa (Kruger) and Zimbabwe (Gonarezhou) as well as the areas between them (Figure 1.1).

The boundaries of the GLTFCA were laid over the landscape by a myriad of actors, each bringing diverse interests and philosophies to the table (Wolmer 2003; Duffy 2006). It was strongly promoted - in the region and internationally - by the Peace Parks

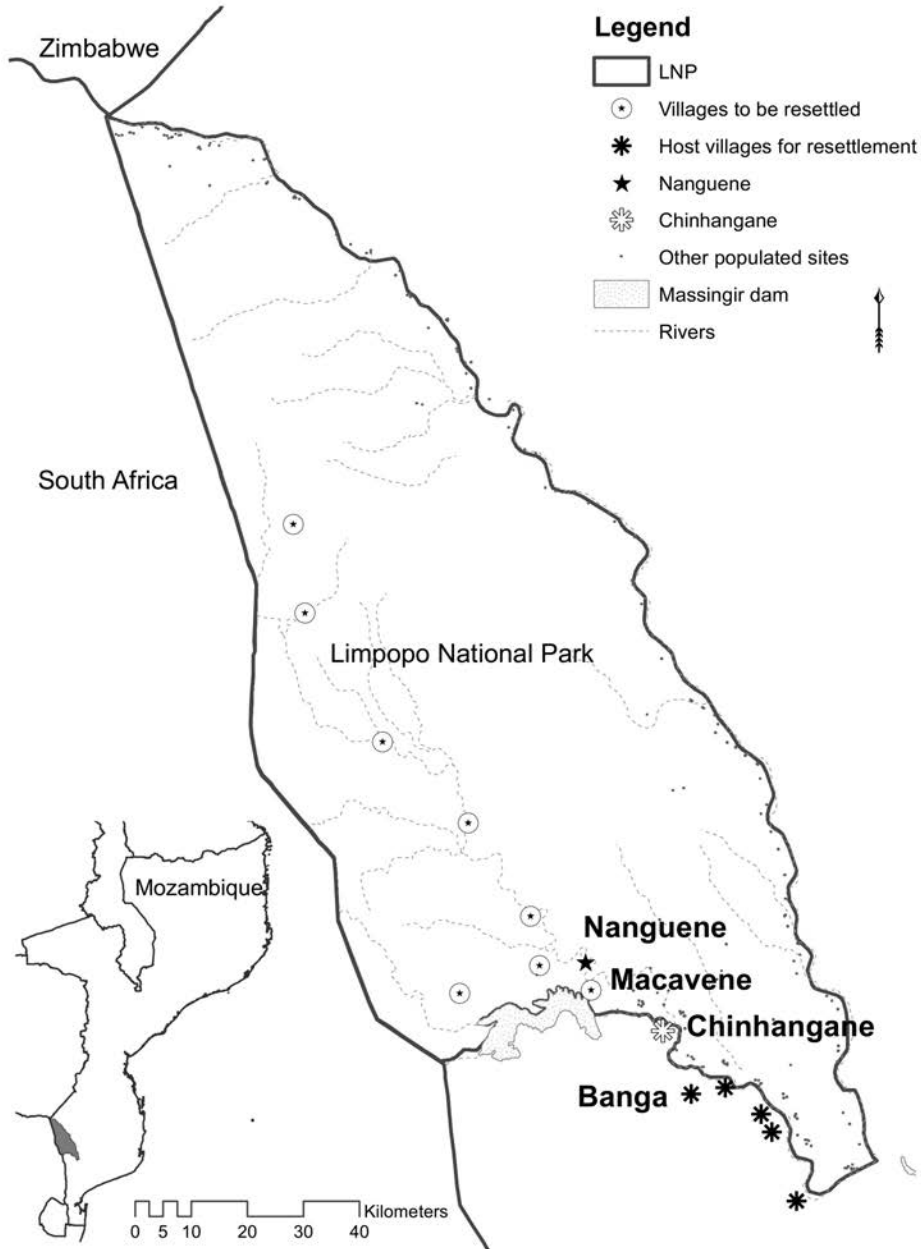


Figure 1.2. Villages located along the Shingwedzi River designated for resettlement to outside the borders of the park. Although it is not certain where each village will be resettled to, the villages along the south border of the park, and Mapai, on the east border of the park have been identified as probable resettlement locations. Nanguene was resettled to Chinhangane in 2008. (Map credit: J Milgroom)

⁴ Peace Parks are parks that stretch across national boundaries, like transfrontier or transboundary parks. The term highlights the role that these parks are imagined to play in improving relations among neighbouring countries.

Foundation (PPF), an organization established by the late Anton Rupert to attract funds for the development of Peace Parks⁴ in the region. Nature conservation and local economic development are the main espoused goals of this grand transfrontier enterprise, two goals that are seemingly difficult to marry (Wolmer 2003; Draper et al. 2004; DeMotts 2005; Norman 2005; Spierenburg et al. 2006). From its inception, many eyes were cast on the development and progress of the LNP as part of one of the first of many transfrontier parks; it attracted the greatest amount of investment of all Mozambique's national parks, and was thought to have important potential for attracting tourists. The LNP covers approximately 10,000 km² of mopane and mixed combretum woodlands (Ministry of Tourism of Mozambique 2003) and is home to 27,000 residents. The 7,000 residents living along the Shingwedzi River that runs through the centre of the park (Figure 1.2) are destined to be resettled to locations outside or along the eastern border of the park to make room for tourism development, and because of increasing conflicts between humans and wildlife since the opening of the GLTFCA.

Nanguene

Nanguene village was the first village to be resettled, as part of a resettlement pilot project that was intended to test and remedy any initial implementation problems. Nanguene is a small satellite neighbourhood of the larger village of Mavodze (Figure 1.2). For the purposes of resettlement, however, it is considered a village in its own right. Before resettlement, 77 people were residing there in 18 nuclear families (MiTur 2007). They have moved numerous times over the last few decades. In the late 1970s and early 1980s a villagization programme moved the residents of Nanguene into the village of Mavodze as a way of providing cost-effective services and communal farming. By the late 1980s most residents had fled to South Africa to seek refuge from the increasingly intense violence. When the war was over, after an assisted return back to Mavodze in the mid-1990s, the people of Nanguene chose to return to their original location. In 2000, however, major flooding forced Nanguene's residents once again to move, this time to the other side of the Shingwedzi River, where they were residing in 2006 when I began my fieldwork.

PROBLEM STATEMENT

Resettlement entails numerous ethical, political, procedural and technical challenges that are subject to continuing debate. Implementation of resettlement policy in practice is acknowledged to be one of the most problematic aspects of resettlement yet little insight has been distilled from previous experience. Compensation is a key part of resettlement policy, yet inadequate compensation continues to be named as a common cause of post-resettlement impoverishment. Conceptualization of policy implementation

as enactment, and an integrated understanding of people's lives and livelihoods in light of compensation may provide insights into understanding why resettlement tends to be detrimental for resettling people. In this thesis resettlement is conceptualised as an unfolding process grounded in a specific context.

RESEARCH OBJECTIVES AND QUESTIONS

The overall objectives of my research were to understand resettlement as an unfolding process and to address the two overarching questions, i) How was resettlement policy enacted? and, ii) What does an integrated understanding of the lives and livelihoods of resettling people mean for the design of compensation? The specific research questions addressed in the study were:

- 1) How did the political-economic context of the resettlement project influence policy enactment?
- 2) How was resident participation in the resettlement planning process (as stipulated by the WB OP 4.12) enacted in practice?
- 3) How did this process contribute to residents' ability to influence compensation decisions?
- 4) How did people use and value natural resources in their livelihoods before resettlement?
- 5) What shaped access to and control of access to natural resources before and after resettlement?

In attempting to understand the unfolding process of resettlement, it is necessary to explicitly address the influence of the researcher in that process. Researching in this kind of atmosphere requires heightened reflexivity on the part of the researcher to understand how research findings and the actions being observed are influenced by the presence of the researcher (Schmidt 2007). This led to an additional research question, the background for which is described in more detail in Chapter 2.

- 6) What influence did my presence, and an action-oriented approach to research, have on the resettlement process?

Outline of the thesis

Chapter 2 describes and justifies the methodology and design of the study. Many of

the research questions emerged while carrying out the research, through an iterative process of data collection, data analysis and literature review. The decision to allow research questions to emerge was based on the idea that scientific research can contribute to improving the situation under study, and that such research questions are best formulated in conjunction with the people dealing with the problem at hand. This methodological positioning profoundly influenced the trajectory of my research and therefore needs to be explained further.

Chapter 3 describes and analyses the history and political economy of the establishment of the LNP and the policy landscape that defined the initial interpretations of the WB OP 4.12. The idealistic views of the founders of the transfrontier park are contrasted with the practicalities of policy implementation on the ground. The nuances of the term ‘volition’ are explored in the light of how people’s willingness to be resettled changed over time in response to events and personal histories. The chapter concludes by highlighting challenges faced by the park staff as they were pressured by government officials, donors and the park residents to resettle people as quickly as possible, but in a ‘participatory’ way.

Chapter 4 examines how the WB OP 4.12 was enacted in practice, based on an in-depth analysis of the negotiations about the houses to be provided as part of compensation for resettlement. In particular, the fluctuating role of participation is explored in relation to the space residents had to influence resettlement decisions. The changes in the meanings that the different actors gave to the notion of participation in the policy enactment process are examined over three phases in the negotiation process. This chapter demonstrates how these changing meanings reflected changing power relationships, and influenced the opening and closing of space for the residents to influence decision-making about their own futures. The role of policy enforcement is also explored.

Chapter 5 describes the livelihood activities residents of the Massingir region. Maize cropping is shown to form a significant part of people’s livelihoods. The chapter then turns to examining how the residents manage to produce maize in the marginal and challenging agro-ecosystem in which they live. Based on local technical and social practices, 15 years of daily rainfall and a range of household assets, I estimate how much land is needed per person to be able to produce enough to be food self-sufficient. The estimation forms the basis of subsequent assessments, described in Chapter 10, of the suitability of the compensation package. This chapter also provides insights into the way people adapt to variable climatic conditions in contribution to the wider debate on climate change.

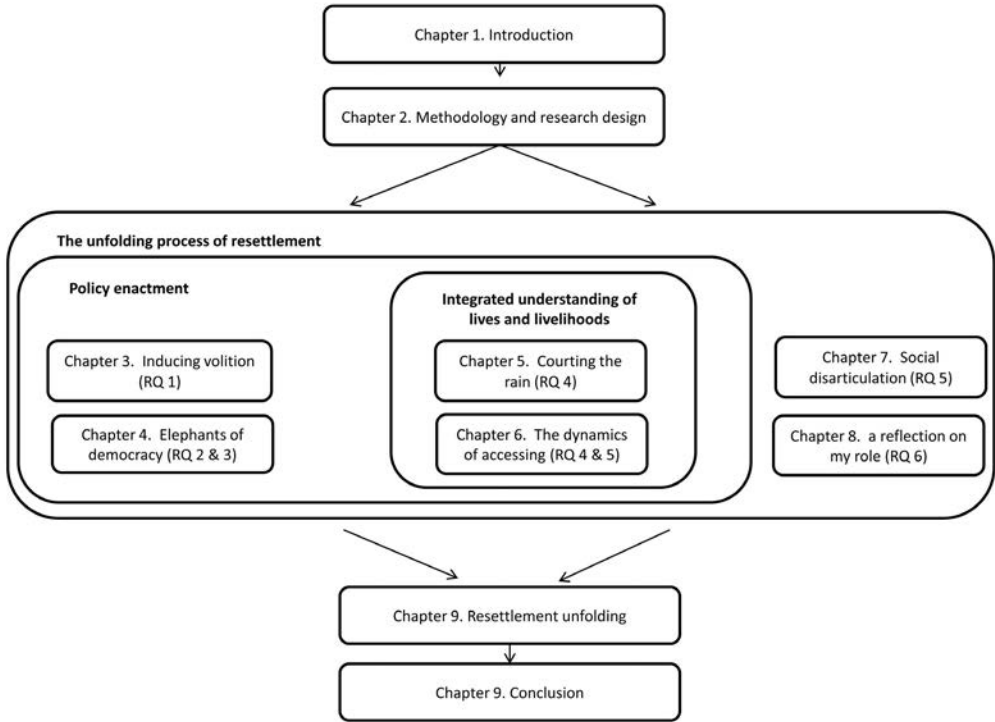


Figure 1.3. The design of this thesis is based on six research questions (RQ). Policy enactment is embedded within the unfolding process of resettlement. In turn, the integrated analysis of lives and livelihoods is embedded within policy enactment.

In **Chapter 6** the natural resources available and used pre-resettlement are quantified and compared to the natural resources available in the post-resettlement location, based on a spatial analysis. The findings from the spatial analysis of their availability, the resources provided for in compensation, and the resettled households' access to resources in practice 18 months after resettlement, are then compared. This comparison leads to a discussion of the relationships between quantity and quality of, and access to natural resources, relationships that are typically under-valued or ignored in understanding natural resource use.

A metaphor emerged during discussions about how the resettled residents would be received by the host village; resettling residents would have to become 'children of another land'. Chapter 7 provides an analysis of this metaphor that gave rise to methodological and theoretical insights. Methodologically I explore how a metaphor can reveal schemas that have implications for action: half of the resettled village returned to the park to search for a place to establish a new village. The question of why resettlement led to this outcome is examined based on an analysis of relationships

between family lineages, resource access, and control of access to resources. Theoretically I propose a new understanding of the relationship between authority and access to resources that assists in understanding social cohesion in post-resettlement.

In **Chapter 8** I step back from the empirical research and reflect on the role of the researcher in the resettlement process. The chapter addresses the role of science in situations of competing claims on natural resources, the role of action-oriented research, and the potential for a long-term engagement of a field researcher to gain and maintain the legitimacy needed to increase leverage for resettling residents in negotiations.

Chapter 9 returns to one of the overall objectives, to describe and analyse resettlement as a process. It tells the story of resettlement as it unfolded from the perspective of the resettled residents by means of photographs that they took before, during and after the physical relocation, and their own explanations of what the photographs mean.

Chapter 10 draws the thesis to a close, first by summarising the scientific and operational contributions of the research. These are then used to question the assumptions on which resettlement policy has been developed and implemented. The implications for resettlement practice and policy enactment are discussed and alternative routes are outlined. The chapter concludes by linking the lessons learned to a broader discussion of competing claims on natural resources and the contribution of science to resolving the challenges of complex problems.



2

Methodology and research design:
Searching for relevance

INTRODUCTION

The research questions posed in this thesis were shaped by my ambition to carry out research relevant to the people with whom I was researching. Research for which the primary goal is relevance to an immediate societal problem transcends disciplinary lines. For this reason I have attempted to write this chapter in a way that is accessible to any audience. The search for relevance led me to engage in interpretive research. This approach may not be familiar to audiences from all areas of study, therefore, I start this chapter with an example of how it was applicable.

Massingir is located in a region that receives an average of 400 mm of rain per year. Rainfall is highly erratic, mid-season droughts and total crop failure are common. Reports on the agronomic potential of the country (Kassam et al. 1982; Reddy 1986; Westerink 1995) classify the Massingir region as not suitable for cropping. A quick glance from the vehicle window on my first trips through the region, however, revealed that a significant amount of effort and resources were invested in agricultural activities and in particular in growing maize. The maize fields were enormous and buzzing with activity. Maize in all stages of development could be seen across the landscape—just emerging, knee-high vegetative growth, tasseling, and in maturation, although the latter could be seen conspicuously less often than the other stages. Coming from the agricultural sciences, the first question that came to mind was ‘what kind of research can I do that would contribute to increasing food production in this environment?’ From what I understood, it seemed that the proposed resettlement of people from inside the national park, where food security was reported to be tenuous, to a location outside its borders with a population density 6 times higher, would make more people dependent on fewer resources. In this case there would be a need for an increase in food production, or at least a need to produce the same amount on less land, that agronomic research might be able to address.

However, before I could formulate research questions or design experiments, it seemed necessary to acquire a more in-depth understanding of the barriers to agricultural production and of the kinds of changes people might be willing to adopt. Very little previous agronomic research had been carried out in Massingir on which to base these decisions. Initial interviews and discussions revealed that the lack of rainfall and the maladaptation of the ‘improved’ varieties to the region’s agroecosystem, were major limiting factors. I became especially interested in the potential of drought-tolerant maize varieties to increase yields. I began to collect maize cobs from farmers’ fields and granaries and inquire about local varieties. I was curious about why people invested in maize cropping when it seemed to lead to crop failure year after year. I first tried to find answers to my questions through interviews and focus-group discussions but

the responses were unsatisfactory from my point of view as an agricultural scientist because none seemed to justify the work and resources spent for what I saw was not minimal return but often zero gain. Two rainy seasons passed and both brought total crop failure, yet people continued to plant maize. When the granaries were nearly empty, people were still investing seed and effort in planting, even in the dry season. It became clear that I would need a different kind of approach to be able to find the right pieces to the puzzle. Through observation of cropping practices and of sources of food over time, and through an iterative process of observing and discussing with people, I discovered that they plant maize again and again despite regular harvest failure because, when it does rain, they can produce enough to feed their families for up to three years. Understanding this, the crux of the agricultural system, allowed me to begin to assemble the puzzle, and radically changed my appreciation of the kinds of interventions likely to be effective in increasing agricultural production in the region.

This example is emblematic of the trajectory through which my research took shape. I could have begun research straightaway on drought-tolerant varieties when I arrived in Mozambique in 2006. This kind of research might have contributed to improving food security post-resettlement. But I did not do this because it seemed somehow irrelevant to the residents who appeared to have evolved adequate strategies for ensuring their food supply in a variable rainfall environment. I set myself first to understanding the day-to-day lives of the people involved in and affected by the resettlement process before making detailed decisions about what specific research questions to pose. Allowing the researching process to be driven by the puzzles and mysteries I encountered influenced the methods, analysis, findings and interpretations drawn. My study became based on detailed ethnographic work during an extended exploratory phase in which I was immersed in the field. This phase was followed by one in which the research questions began to crystalize and I constructed a series of studies to answer these. The studies called upon methods from a range of disciplines, including, but extending beyond, those of the agricultural sciences.

The details of these methods and how they were applied are provided in the relevant empirical chapters. This chapter provides an overview of the methodology and research design. The first part, on methodology, is organised in three sections. The first makes explicit the epistemological positioning out of which this research emerged. The second describes how this positioning had consequences for which and how methods were applied in the fieldwork. The third presents criteria used to judge interpretative research.

5 'Lifeworld' can be understood to be the world as experienced in the (inter)subjectivity of day-to-day life, or more specifically, "the bedrock of beliefs against which the very ordinary, mundane moving through one's everyday world, interacting with others, takes place and through which one shapes and reaffirms one's sense of oneself and the elements of one's social world" (Yanow and Schwartz-Shea 2006: 12).

METHODOLOGY

This research was initiated within the Competing Claims programme with the intention to carry out action research. Action research 'seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues -of pressing concern to people'(Greenwood and Levin 2007: 1). Although in practice less action research was carried out than expected, for reasons described in detail in Chapter 8, the original action-research orientation influenced the kinds of claim to knowledge I wished to establish through my research and hence also the methodological choices that I made before and during fieldwork. Some preliminary definitions are in order. I discuss epistemology as the study of knowledge and justified belief, and ontology as the study of the nature of being. The distinction between methodology and methods is also important in this discussion. Methodology is applied epistemology; methods are the tools and techniques used to collect and analyse data and make sense of information. In this section I explain the epistemological and ontological positioning of my researching practice by first briefly describing interpretative research and how it relates to the methods that I used.

Interpretive research

Research carried out in the positivist, realist tradition is based on the idea that authentic knowledge can be gained by positive tests of a reality that exists independent of an observer, such as knowledge elicited through experiment. Interpretive research focuses on the way human beings make sense of their perceptions of reality and attribute meaning in and to their day to day lives. It is based on the understanding that people's experiences, and hence their actions, are not disconnected from time and place, nor from the mind of the actor. An important implication is that the researcher accepts that people develop many ways of understanding their worlds, and that their understanding has consequences for how they act (Bevir and Rhodes 2005).

Interpretive research is based on the epistemological position that we do not access the world directly; we construct our understanding of a reality (Ison 2010). Knowledge in this perspective is that which allows effective action in a domain of existence (Maturana and Varela 1992; Clark 1997). Interpretative analysis seeks to reveal assumptions, generally hidden from view, in order to be able to question the way we see the world (Wagenaar 2011) and 'attempt[s] to understand phenomena through accessing the meanings participants assign to them' (Orlikowski and Baroudi 1991).

This has strong methodological consequences, shifting the practice of research from truth-seeking to understanding. 'Understanding', or *verstehen*, a concept initially elaborated by Wilhem Dilthey and Max Weber, is central to interpretive research. The

development of understanding requires acts of interpretation, to situate something in its proper context (Wagenaar 2011: 23), and to understand the lifeworld⁵ from which it arose. It 'denotes the intentional ferreting out of that mental framework of another person—the framework that "stands under" the individual's actions. [...] It is a proactive, intentional and willed effort to understand from within' (Yanow and Schwartz-Shea 2006: 11 *italics in original*).

By placing this 'ferreting out' centrally in a process of enquiry there occurs 'a decentering of expertise on the part of the researcher from technical-rational subject matter expertise to process expertise' (Yanow 2003: 11). The researcher in this tradition may not claim to know more or better than the people whose everyday experiences he or she analyses (Wagenaar 2011: 196), and assigns legitimacy to their knowledge. For example, returning to the case of the agricultural practices, instead of rendering them illogical as they seemed from the perspective of my lifeworld, I focused on understanding how the people who engaged in the practices understood them. I recognized that I could not know what would be relevant or understand what the important questions were until I could see their lives, as much as possible, in the way that they see them.

The underlying presuppositions of my research practice significantly shaped both the process and the product of the research. This influence was manifested in four ways, one of which has already been described: the choice to allow the research questions to emerge out of the fieldwork. The second was to strive for transparency about what was relevant for whom. One of the principal purposes of action research is the generation of knowledge that is useful to people in their daily lives and that can increase their well-being (Reason and Bradbury 2001: 2). In my case, this meant that the research was specifically geared towards questions and actions that might increase the well-being of the residents before and after resettlement. Thirdly, it meant that as a researcher I recognized my role in influencing the situation under study, rather than attempting to remain outside the processes observed and the interactions that occurred. The evidence that the researcher does influence the research process is strong and today, widely accepted (Ison 2010). Recognition of this required heightened reflexivity on my part, about how my presence influenced the kind of data that I was collecting, how information was shared, and in the way in which the process was unfolding. Fourthly, throughout the four years of fieldwork I carried out research with rather than on people. Although I, as the researcher, made most of the decisions about the course of the research I tried to give primacy to people's desires and uncertainties, in an effort to understand the way they experienced their own lives.

The implications for method

This study can be viewed as framed by what Ison (2010) calls systemic thinking about a problem situation that interconnects diverse lifeworlds and causal influences, requiring the use or adaptation of a diverse range of methods from a range of disciplines, including methods from disciplines that traditionally are associated with positivist realist science (Chapters 5 and 6). This might appear, therefore, to be an interdisciplinary thesis. There have been many ways of understanding interdisciplinarity. The realization that pressing and complex societal questions about human–environment relationships may need more than a single disciplinary perspective to gain innovative insight has given rise to much debate about multidisciplinary, interdisciplinary and transdisciplinary research (Bracken and Oughton 2006; Hinrichs 2008; Miller et al. 2008). I prefer not to call my espoused research practice by any of these three terms because they suggest the prior necessity of organising research on the basis of disciplines (MacMynowski 2007).

The problem-based search for relevance, in fact, minimised disciplinary influences on my researching practice. I propose in this thesis to apply instead the term, integrated, to describe such practices. In this thesis, Chapters 3, 4 and 7 are informed by an interpretive methodology and methods. In Chapter 5 agronomic methods, that assume a positivist epistemology and a realist ontology, are used to explain observations that were generated from an interpretive standpoint. The research question in Chapter 6 emerged from the interpretive research; however, the focus here specifically lies in comparing and contrasting the knowledge generated using methods associated with positivist realism with the knowledge generated using methods that fall under the umbrella of interpretive research.

Judging the quality of the research

All science aims to attain the central quality of trustworthiness (Lincoln and Guba 1985). Positivist realist and interpretative research share two central attributes of scientific practice, that of an attitude of doubt and procedural systematicity (Yanow and Schwartz-Shea 2006). However, the traditional criteria for judging the quality of research, such as external and internal validity, reliability, and objectivity acquire new meaning in the context of interpretative research. Interpretative researchers have proposed alternative criteria (Lincoln and Guba 1985; Eisner 1991; Maxwell 1992; Lather 1993). Lincoln and Guba's criteria are among the most commonly used (Schwartz-Shea 2006), and I have chosen to apply them in this thesis. The four main criteria defined by Lincoln and Guba are: credibility, transferability, dependability and confirmability. I describe each briefly below and discuss how the work presented in this thesis measures up to each of them.

Credibility

This criterion relates to the truth value of the research. The parallel of this criterion in positivist realist science can be considered internal validity. Whereas internal validity conveys a belief in the existence of one 'truth', the aim of interpretative research is to provide an accurate rendering of actors' points of view. (Wagenaar 2011). Credibility involves establishing that the insights developed through the research are credible or believable from the point of view of the participant in the research. This criterion can be addressed through prolonged engagement, persistent observation, triangulation, peer debriefing, and member checking (informant feedback, or respondent validation), among others (Lincoln and Guba 1985: 301).

- My research journey entailed a prolonged engagement in the field that allowed me to understand the culture and the context in which I was researching, during 40 months over a period of four years in close quarters with the residents of Nanguene and in regular contact with other actors.
- Whenever I was in the field I was observing and recording my observations, and was often a participant in the work and daily experiences of others. Observation was the primary way that I learned which issues were most important, which questions to ask and how to ask them to understand the issue in the most detail.
- Triangulation was carried out by using a range of methods, such as in-depth interviews, surveys and observations, quantitative measurements and secondary data analysis to understand the same phenomenon (Table 2.1).
- Peer debriefing was carried out by discussing interim findings with academic colleagues, through presenting the work at international and local conferences, at field workshops and at meetings, and through submitting the finished work to peer-review journals.
- I regularly reflected with the residents of Nanguene and Chinhangane about my understanding of what they and others had said or done and why, as well as about the ideas that I was generating through an iterative process of data collection and analysis so as to be able to increase the credibility of the findings (member checking).

Transferability

Transferability refers to the extent to which findings from the study might be relevant to other cases. The parallel of transferability in positivist realist science can be considered external validity or generalizability. Transferability is limited in interpretive

research because it generates explanation that is context-specific rather than a set of generalized predictive 'laws' (Flyvbjerg 2006; Yanow and Schwartz-Shea 2006), and because meaning is socially-constructed and negotiated. In interpretative research the researcher must provide enough 'thick description' for the reader to make the decision whether or not the findings might be relevant, in this case for another resettlement context (Geertz 1973).

Dependability

Dependability refers to the extent to which the findings can be replicated. In a positivist-realist tradition, it is assumed that if the research is repeated in the same conditions with the same methods, the results would be the same. However, the phenomena commonly studied by interpretative researchers, people and their everyday meanings and practices, are highly contingent, compounding the problem of replicability (Bevir and Rhodes 2005). Dependability in the interpretive tradition is attained by leaving an explicit and detailed trail of what was done, why and how, as well as changes in the context that may have influenced the research. My research diaries track what I was doing, why and how, but it would be difficult to repeat the study because of the dynamic and contingent nature of the unfolding process of resettlement. However, all interviews, survey answers and informal conversations were recorded as close as possible to word-for-word in the way that the person spoke them, including the questions posed. The data in its raw format would allow another researcher to trace back from my records to the original sources and reconstruct the analysis.

Confirmability

Confirmability refers to the degree to which the insights derived from the research can be confirmed or corroborated by others. In a positivist-realist tradition this criteria would be called objectivity. Interpretive research, however, assumes that each researcher brings a unique perspective to the study. The use of triangulation can reduce the effect of investigator bias. I used numerous different methods to understand and contrast the knowledge generated using each one, actively searching for cases or observations that contradicted assumptions and prior observations (Table 2.1). The extent to which a researcher is explicit about his or her own predispositions can also influence confirmability. The researcher is never independent from her own background (Bourdieu and Wacquant 1992). This study attempts to make explicit my own pre-analytic bias toward understanding the perspective of the resettling residents.

RESEARCH DESIGN

The case study

A case study is a research method commonly used for understanding social processes, answering 'why' and 'how' questions, and for monitoring changes over time (Yin 1994).

Case studies are useful for gathering the type of richly layered and comprehensive detail that is necessary for understanding a complex social situation (Flyvbjerg 2006). This level of detail, and hence depth of understanding could not be attained through the study of multiple cases simultaneously. I chose a case study design for my own study for two additional reasons. One is related to the logistical implications of interpretative research. Logistically, to be able to enter the lifeworlds of people who are being resettled it was necessary to build relationships of trust and understanding in the context. This in turn required that I acquire functional mastery of the local language and sufficient historical and cultural understanding to be able to interpret people's actions and responses to questions. Secondly, the topic of the research demanded 'continuing presence', so as to be able to track the unfolding process of resettlement.

Case selection

The research location identified by the Competing Claims on Natural Resources programme was the Great Limpopo Transfrontier Conservation Area (GLTFCA). Within the GLTFCA, the Limpopo National Park (LNP) had been relatively recently established and the issue of resettlement was one of pressing concern for nearly everyone I spoke with on my first trip to the area in January 2006. The Competing Claims programme and key actors in the LNP agreed that it would be mutually beneficial if I could research the resettlement process, specifically focusing on post-resettlement food security. In practice this meant developing a case study centred on one village, the village of Nanguene, located within the new park's boundaries, and its host village, Chinhangane, in the resettlement area outside the park. In order to understand the context I also carried out research activities in a total of 14 villages in and around the LNP (Figure 2.1, Table 2.1).

The choice to reside in the village of Nanguene, as the first village that was planned to be resettled as part of a pilot project, provided a base for an extended period of exploratory research. Nanguene, at the start of the study, was a small village of approximately 70 residents. This was an advantage for me because I could get to know everyone and follow the same individuals from pre- to post-resettlement. By getting to know them all well as individuals, family members, and members of social networks, and having established relationships of trust, facilitated my understanding of their reactions to the twists and turns in the resettlement process. After less than a year the residents began to volunteer information and our interactions took on the character of an extended dialogue (rather than extractive questioning controlled by the researcher). I could easily prompt them for explanations concerning their tacit knowledge and for information about topics that they did not bring up themselves. I also began to be able to interpret the signals that suggested they might be withholding something, altering



Figure 2.1. The locations of the villages in which research was carried out. The primary case study and the majority of the data collection took place in Nanguene and Chinhangane. (Map credit: J Milgroom)

the information or were uncomfortable about continuing a conversation. I observed and recorded their actions in and around their households and in their farming and natural landscape, and assisted them in their daily activities. This allowed continual cross-checking of any differences between what they said and what they did. These experiences and moments were important for discovering emerging issues, challenging assumptions, and revealing latent understanding.

On the other hand, the small size of the village had its disadvantages. The social dynamics of a small settlement and that of a large village are likely to be different and thus also the process of resettlement. Further, in each of the thirteen additional villages where I worked, the authority structures, social organization of resource management and patterns of decision-making were clearly different, for a host of reasons. In most of these villages the research was based on semi-structured interviews and focus-group discussions. Establishing relationships of trust like those that I fostered in Nanguene was only possible in two other villages—Macavene, the next village planned for resettlement after Nanguene, and Chinhangane (Figure 2.1). However, the interviews and focus group discussions allowed me to check the similarity between what I was seeing in Nanguene and other villages, particularly with respect to use of natural resources, agricultural practices, and people's opinions and perspectives concerning resettlement. In most of the meetings about resettlement that I attended, representatives from the other villages also were present. This provided additional opportunities for comparison.

Emergent questions and method choice

I carried out fieldwork for a total of 40 months, stretching over a period of four and a half years (January-February 2006, September 2006-February 2009 then October 2009 to June 2010). When based in the LNP, I stayed in a tent, primarily in the village of Nanguene, but also in other villages for periods of between one and three weeks. I returned to Maputo for periods of variable length, averaging one to two weeks.

Whilst in Nanguene I carried out the same daily activities as the villagers, such as looking for firewood and fetching water from the river bed. Sharing these somewhat arduous tasks undoubtedly helped create mutual acceptance of a way of life and minimised some of our differences in autonomy and power. From the start I stayed in the village without a translator in order to learn the language more quickly; as they taught me to speak, the barriers between us began to be dissipated. Among my first phrases were, *ufamba kwini? Mina nilava kufamba na wena...* where are you going? I would like to go with you... This approach led to excursions and missions whose duration and purpose were not known to me in advance; they revealed the social and natural world around

us in ways that could not have been elicited through formal interviews. I believe this period was of utmost importance for the rest of the fieldwork experience and the quality of the research.

The following section describes how new research questions emerged from the iterative process of observation and questioning, and how the research methods were chosen to respond to these questions.

The exploratory phase

To understand how the research questions emerged it is necessary to return to the starting point: the ambition to carry out action-oriented research to contribute to food security post-resettlement. In Southern Africa it has been often argued that small-scale agriculture contributes relatively little to food security, and that people are dependent on remittances from family members working in cities, or cross-border trade (van den Berg 1987). Therefore, it was necessary to begin my research by investigating livelihood activities and how agriculture contributed to these livelihoods. I developed an exploratory semi-structured interview on livelihood activities, focusing on remittances, sale of livestock, use of forest resources, agricultural production and the seed system. The interview was carried out with 215 respondents spread across eight villages (Table 2.1). The data provided the contextual information from which more refined and focussed research questions could be identified.

I also began a series of repeat in-depth interviews with LNP staff, Ministry of Tourism (MiTur) officials, external consultants and donors about the process of resettlement as it unfolded (building on the interviews I had conducted in January and February of 2006 during an initial exploratory trip to the region) from September 2006 until June 2010. In December 2006 I began fieldwork in Nanguene. At this point I began a series of in-depth interviews with the members of each household in the village.

In September and October of 2007, to identify appropriate research questions concerning the contribution of maize to food security pre- and post-resettlement, I carried out a series of focus group discussions about the uses, preferred characteristics and threats to production of maize. I collected samples of maize from eight villages within the LNP in 2007 and built on this initial collection systematically over time. I characterized a total of 304 cobs of local maize (IPGRI 2000). The objective was to characterize the material morphologically as the basis for further research on drought tolerance. In collaboration with the maize breeders at the National Institute for Agricultural Research of Mozambique (IIAM) the material was planted out. I made various collections of cobs from different places at different times and also characterized

the first and second generation of material produced by IIAM maize breeders. The results of this work are not presented in this thesis, and therefore the procedure followed is not described in detail, except superficially in Chapter 5. From this work, combined with my observations and interview results, a hypothesis was developed about risk reduction in the agricultural system. This became one part of the research question answered in Chapter 5 (see further below).

Out of the combination of research activities described above including in-depth interviews on the resettlement process and investigation into maize and livelihoods, I began to formulate specific research questions related to the process of resettlement. There came a turning point in my fieldwork at which I realized that the unique contribution my research could offer did not lie in increasing agricultural production but in documenting the resettlement process itself.

Zooming in on the specific research questions

Three factors brought me to realize the value of documenting the resettlement process. First was the lack of rain. Without rain or any possibility to irrigate it was very difficult to study or experiment on agriculture in general and maize in particular. Secondly, every discussion that I had with residents of the region about agriculture inevitably turned into a discussion about resettlement, the new and threatening presence of the elephants, or 'the park' itself and the ways in which the establishment of the park had changed their lives. Their interests and their concerns were focussed on the resettlement process and not on getting access to an improved variety of maize. Thirdly, because of my presence in the village and my continuous communication with the park staff and other actors, I inadvertently became more and more involved in the process of negotiating about the conditions for post-resettlement.

The research questions emerged sequentially as the process of resettlement unfolded. The questions were introduced in Chapter 1, but I explain here how each took shape. The resettlement action plan (RAP) was based on the WB OP 4.12, an operational policy for *involuntary* resettlement, and yet the resettlement from LNP was being called *voluntary*. Why was this? The first question formulated was: *How did the political-economic context of the resettlement project influence policy enactment?* The policy called for participation, yet the kind of participation being orchestrated on the ground was confusing for almost everyone involved. The second question was then formulated: *How was resident participation in resettlement planning (as stipulated by the WB OP 4.12) enacted in practice?* The third question followed close behind: *How did participation contribute to residents' ability to influence compensation decisions?* Meetings between the park and the villagers, with the district administration, or among the

Table 2.1. Overview of the Research Design in relation to the methods used, the chapters in which they are explained, the dates, locations and person responsible for the fieldwork.

Method	Chapter in which data rated was used	gene-	Dates	Location	Who
Participant observation*	Chapters 3, 4, 6, 7 Article 5 was based in PO		Sept 2006-June 2010	Maputo, Massingir, Nanguene and Chinhangane	J Milgroom
In-depth, repeat interviews*	Chapter 3, 4, 5, 6, 7		Jan and Feb, then Sept 2006-June 2010	Nanguene and Chinhangane, Massingir, Maputo	J Milgroom
Informal interviews*	Chapter 3, 4, 5, 6, 7		Jan and Feb, then Sept 2006-June 2010	Nanguene and Chinhangane, Massingir, Maputo	J Milgroom
Attendance at meetings*	Chapter 3, 4, 6, 7		Jan 2007-June 2010	Maputo, Massingir, Nanguene, Chinhangane, Banga	J Milgroom
Targeted data collection and observation of cropping system	Chapter 5		Sept-Dec 2006	Banga	W Leonardo [†]
Focus group discussions on local maize	Chapter 5		Sept 2008-June 2010 Sept-Oct 2007	Nanguene, Chinhangane Makandazulo A & B, Chi- mangue, Machamba, Bingo, Mavodze, Nanguene, Macavene	J Milgroom J Milgroom
Semi-structured interviews	Chapter 5		Jan and Feb 2006, then Sept 2006-June 2010 Nov 2006 May 2007 Feb-March 2008 Feb-May 2008	Maputo, Xai Xai and Mas- singir Banga and Chibotane Macavene Zulo and Massingir Velho Manhica and Massingir Velho	J Milgroom W Leonardo J Milgroom D Rhebergen* I Verbeek and M Elderman
Collection and characterization of local maize	Chapter 5		Sept 2007-June 2010	Makandazulo A & B, Chi- mangue, Machamba, Bingo, Mavodze, Nanguene, Macavene	J Milgroom

Participatory GPS applied to natural resource use and measurement of fields	Chapter 5 and 6	Dec 2006-June 2010	Nanguene, Chinhangane	J Milgroom
Yield Measurements	Chapter 5	Jan -May 2009 Feb-May 2010	Chinhangane	F Mabajane* J Milgroom
Selection exercise for local maize	Chapter 5	March-May 2010	Nanguene, Chinhangane	J Milgroom
Estimation of post-harvest damage	Chapter 5	May 2010	Chinhangane	J Milgroom
Analysis of the roles of livestock	Chapter 5	Feb-June 2008	Massingir Velho, Manhica	M Elderman†
Measurement of standing biomass of forage resources	Chapter 6	Feb-June 2008	Massingir Velho, Manhica	M Elderman
Ground-truthing for spatial analysis of resources	Chapter 6	Sept 2008 and Jan 2009 Oct-Nov 2008 Jan 2009 and Jan- May 2010	Nanguene, Chinhangane Nanguene, Chinhangane	J Milgroom and R Soto* J Milgroom
Forest inventory	Chapter 6	Feb-June 2008	Massingir Velho, Manhica	I Verbeek†
Freelisting exercises - use of natural resources	Chapter 6	Feb-June 2008	Massingir Velho, Manhica	I Verbeek
Genealogy-kinship charts	Chapter 7	Dec 2006 – March 2007	Nanguene	J Milgroom
Photovoice	Chapter 9	March-May 2008, October 2008-Jan 2009, and March-May 2010	Nanguene, Chinhangane	J Milgroom
Secondary data and document collection*	Chapter 3, 4, 6, 7	Jan and Feb 2006, then Sept 2006-June 2010	Maputo, Massingir	J Milgroom

* Some methods central to the study are not sufficiently explained in the chapters and are therefore explained in more depth below.

†W Leonardo, M Elderman and I Verbeek carried out fieldwork for their Masters of Science degrees under my supervision. For more details of their methods, see their respective MSc theses. When their data or analyses were used in this thesis it is indicated in the text and is done with their permission.

* D Rhebergen, a student, F Mabajane, a field technician, and R Soto, my translator, played a significant role in these research activities.

villagers alone became a key source of data (combined with participant observation and in-depth interviews) for addressing these questions (Table 2.1). The details of the specific methods used are found in Chapters 3 and 4.

In discussions of the compensation package with the park staff, villagers, donors and the technical advisor responsible for drafting the RAP, many questions emerged about land, especially, how much agricultural land would people actually need post-resettlement? I had observed that many households were still consuming maize from their granaries but I had not yet seen any harvests. I knew that they planted large fields but did not understand how they managed to produce enough to feed themselves in the marginal agro-ecological conditions in which they lived. Analysis of the results from the interviews about livelihoods indicated that the contribution from remittances was not significant in household food security for many households.

The resettling residents were concerned also about the arrival of the company, ProCana, in the region and about the health of their livestock. ProCana had been granted land for sugarcane production, the same land granted to the LNP as the grazing land of the resettled community's livestock. These concerns, combined with the question about the land needed for cropping, gave rise to a question concerning the quantity and quality of natural resources: This gave rise to the fourth research question: *How did people use and value natural resources in their livelihoods before resettlement?* Much of the initial exploratory data proved useful in answering this question; additional methods were used to collect missing data (Table 2.1). The details of these methods are found in Chapter 5 and 6.

In order to understand what resources people were concerned about having access to in the post-resettlement area, I used the method called photovoice (Wang and Burris 1997). I gave Nanguene residents disposable cameras and invited them to take pictures of the resources that were important for them. The photos were then used as a basis for developing criteria for evaluating their satisfaction with resettlement and their post-resettlement access to natural resources (Table 2.1). The women of Nanguene identified through this method, as their second priority after water, 'to be well-received in the post-resettlement location'. Through discussions with them it became clear that this meant, among other things, to be granted access to the resources that they needed. This gave rise to the fourth question: *What shaped access to and control over access to resources before and after resettlement?* Details on the methods used to answer these questions can be found in Chapter 6 and 7.

Chapter 8 is a reflection on my role as a researcher in the resettlement process. It

provides an opportunity to reflect also on the Competing Claims on Natural Resources programme's proposed methodology. As the discrepancy grew between the initial aim of the research (to carry out action-oriented research on agricultural production) and the form that the research actually took over the course of the fieldwork, consideration of the role of the researcher became more pressing. This chapter is reflexive exercise aimed at identifying the ways in which my presence might have changed the situation I was researching and influenced the kinds of data that I generated. The last research question posed was therefore: *What influence did my presence, and an action-oriented approach to research, have on the resettlement process?*

FURTHER EXPLANATION OF SELECTED METHODS

Data generation

Most of the methods are explained in the relevant chapters. However, some that are central to this study may need further explanation, which is provided below.

Participant observation

Participant observation is a standard ethnographic tool. It is the act of participating in the activities carried out by the people you are researching with (Bernard 2006). Immersed in a culture and a way of living that was foreign to me, and simultaneously in a highly dynamic and politically sensitive process, insights derived from participant observation guided me in what I needed to know to be a functional member of society. I took copious field notes, both on my observations and experiences as well as notes of a reflexive nature. Photographs also were instrumental in documenting observations. I participated in many, but not all of the activities that I observed.

Unstructured, in-depth and informal interviews

In the course of this study I carried out three kinds of interviews—semi-structured, unstructured in-depth and informal interviews. Details about the semi-structured interviews are found in Chapter 5 and therefore are not covered here. I conducted the unstructured in-depth interviews based on a list of topics by means of open-ended questions or closed questions posed mainly for clarification. These interviews lasted from 30 minutes to multiple hours. Over the course of my research the same individuals were interviewed in-depth multiple times; each adult resident of Nanguene, residents of Chinhangane and residents of Macavene. I conducted multiple interviews also with five LNP staff members, the technical assistant to resettlement, and the donor representative responsible for regular project monitoring. In addition, I conducted one-off in-depth interviews with high-ranking staff from KfW staff, WB representatives, other donors, MiTur officials, MinAg officials, district politicians, external consultants, and other actors from various organizations. The topics of the interviews varied widely.

Attendance at meetings

Attendance at meetings can provide excellent exposure to a forum in which to witness how people interact with each other without the researcher's intervention. It provides a cross-check on how what people say in meetings might differ from what they say in interviews. On many occasions the most informative interviews I had were immediately after a meeting, about what had happened in the meeting. The shared experience of being present at the meeting often increased the level of trust in my relationships with the village residents. I rarely spoke in the meetings, but everyone present knew that I was documenting them closely. At every meeting I recorded who said what in the form in which it was spoken.

Secondary data and documentary analysis

In this research secondary data and a wide range of documents were collected and analysed to provide additional sources of data. The two most important secondary data were the rainfall data, used in Chapter 5, and the land cover map, created by the GLTFCA. Rainfall data were provided by the government-run Regional Administration of Water (ARA-SUL); the Land Cover map was provided by the PPF GIS specialist. Important documents included LNP meeting minutes, internal park documents and reports, consultancy reports, and newspaper articles. All secondary data and documents have been collected and used with permission.

A note on translation

I speak fluent Portuguese and carried out all of the interviews with Portuguese-speaking people in Portuguese. In the Limpopo National Park, very few people speak Portuguese, and despite the fact that I could interact with people in the local language, Shangaan, I chose to work with translators to be able to capture the nuances of language and the figurative or metaphoric speech so commonly used in the area. The translation was from Portuguese into Shangaan; fieldnotes were recorded mainly in English. This allowed the translators to speak in their native languages. I made some audio recordings of conversations and meetings, but relied primarily on written notes. Questions and answers were recorded in the form in which they were spoken, as closely as possible to word-for-word accuracy.

After the initial period of the fieldwork, during which I did not use a translator, I worked with the same two translators for the remainder of my time in Mozambique, Elisa Fransisco Mate and Reginaldo Soto. I worked regularly with both, either singly or together. Elisa is from Massingir and had extended family in some of the villages in which we worked. However, by chance we only rarely interviewed people that she knew, and as a young woman, she was not intimidating for the interviewees, whether

they knew her or not. Reginaldo is not from the region but from Chokwe, a city 150 km to the south of Massingir. He was also not intimidating in his gentle manner. Over time, as the residents of the villages in which we worked got to know me they also got to know both Elisa and Reginaldo who built their own relationships of trust with them.

It is acknowledged that meaning and nuance can be lost or changed in translation, especially when the translation is made twice. To minimize distortion of data, I took three measures. I understood and spoke enough Shangaan to be able to contrast my understanding of what the interviewee was saying with my translator's version. Secondly, I trained my translator not to interpret, summarize or paraphrase, but to relate word for word the way in which a sentence was spoken. When words were used that were not easily translated we left them in their original state, and discussed the nuanced meaning of the word after the interaction. All records were reviewed jointly at the end of the day to clarify any misunderstandings. The field records were then transcribed to a computer file. A follow-up interview with the same person provided opportunity for further clarifications.

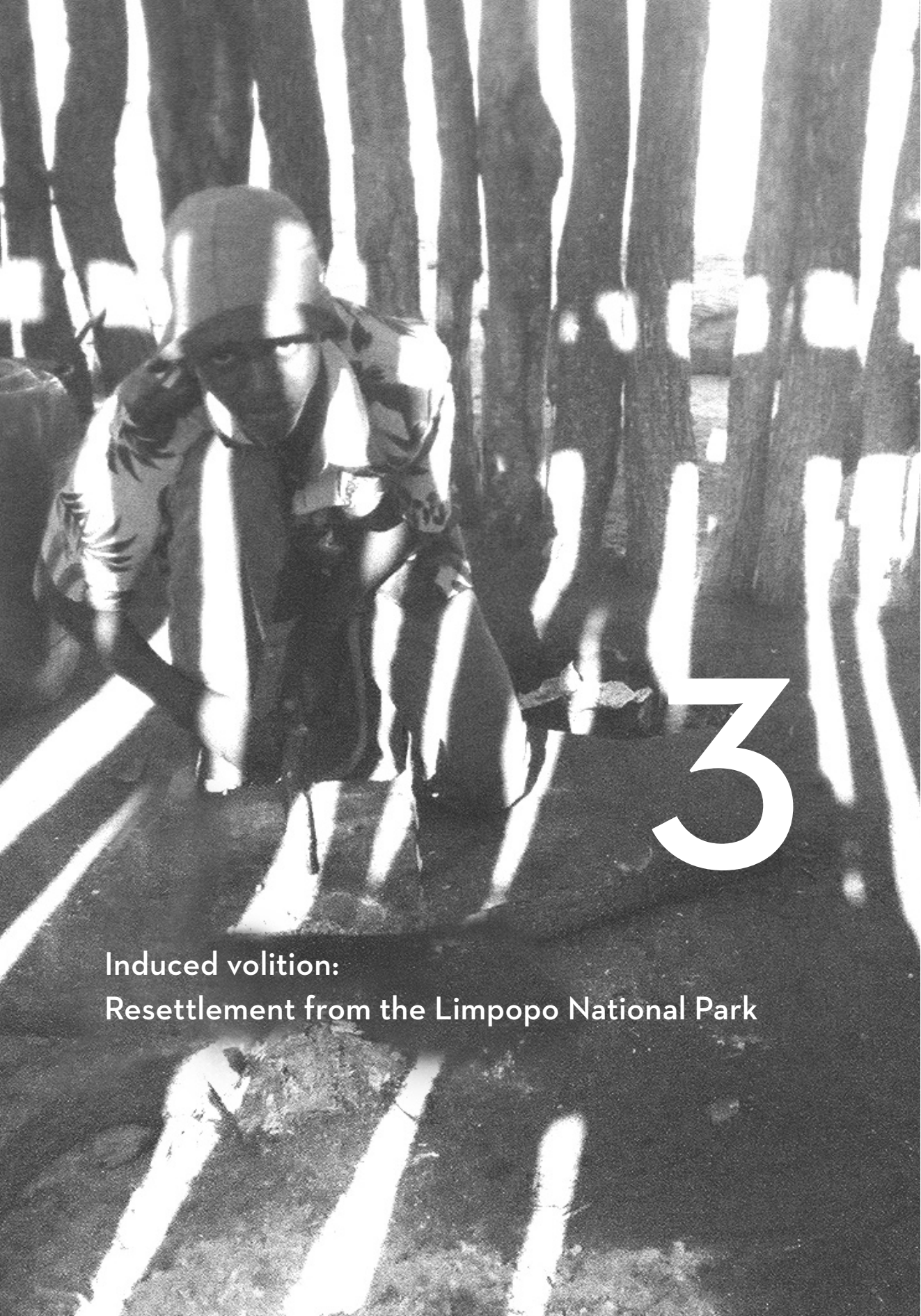
Data analysis

Data analysis was an iterative, on-going process. During the exploratory phase, data analysis was especially intense because I adopted some of the techniques of grounded theory (Glaser and Strauss 1967). Coding, commenting on and sorting my field notes helped me to narrow my focus and to define the new research questions. However, I did not to carry the technique into theory building because events in the field quickened their pace in late 2007 and I chose to spend more time in the field than carrying out intensive simultaneous data analysis.

At this point, analysis of qualitative data continued to entail some digital coding using the program Atlas.ti and manual sorting (Patton 1990). Analysis also began to include more in-depth and intensive discussion about my ideas and theories with park staff, consultants and village residents and engagement with the research literature that I had not read up to that point. Each bit of data analysis, like peeling the layers of the onion, developed another layer of understanding. As I learned about and employed methods that were new to me, I generated new kinds of data, requiring further rounds of analytic discovery. For quantitative data, a number of programs were used including Excel, SPSS, Instat, and ARCGIS for the spatial data.

A note on presentation

Each chapter in this thesis has a different style of presentation. This was a conscious choice because of the recognition that language and form of an academic paper make an important difference in the communication of the results and ideas.



3

Induced volition:
Resettlement from the Limpopo National Park

ABSTRACT

This paper focuses on the resettlement process taking place in the context of the creation of the Limpopo National Park in Mozambique, which is part of the Great Limpopo Transfrontier Park. About 27,000 people are currently living in the park; 7000 of whom are meant to be resettled to areas along the margins of the park. The Mozambican government and donors funding the creation of the park have maintained that no forced relocation will take place. However, the pressure created by restrictions on livelihood strategies resulting from park regulations, and the increased presence of wildlife has forced some communities to 'accept' the resettlement option. Nevertheless, donors and park authorities present the resettlement exercise as a development project. In the article we describe how the dynamics of the regional political economy of conservation led to the adoption of a park model and instigated a resettlement process that obtained the label 'voluntary'. We analyse the nuances of volition and the emergent contradictions in the resettlement policy process.

Keywords: resettlement; (transfrontier) conservation; development; Mozambique

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They were dreaming when they made this park. They were dreaming...and when they woke up they found people and animals together. It is like buying cattle. First you have to make the kraal and then you buy the cattle. You can't buy cattle before building the kraal.

—The leader of the village of Chimangue, September 2007

The above comment of a village leader destined to be resettled from the Limpopo National Park (LNP) in Mozambique, reveals a strong critique of the planning process of the park. This article highlights dilemmas relating to the resettlement of people who are living in a designated national park area. It illuminates the complexity of conservation-driven resettlement processes, and relates this to the interweaving political economies of state and private-sector-driven nature conservation on a regional scale. In doing so, it reveals why, in the case of the Limpopo park resettlement process, 'the kraal' was not constructed before the cattle were bought.

In 2001 the government of Mozambique declared a new park, the Limpopo National Park, as a contribution to the creation of the Great Limpopo Transfrontier Park⁶ (GLTP). This transfrontier park also encompasses Kruger National Park (KNP) in South Africa and Gonarezhou National Park in Zimbabwe, rendering it one of the largest transfrontier conservation areas in the world. The LNP is home to about 27,000 people, approximately 20,000 of whom reside along the eastern and southern borders of the LNP. The remaining 7,000 inhabitants live in eight villages along the Shingwedzi River, which transects the southern part of the park. These eight villages occupy an area that is deemed to offer the best possibilities for sustaining viable wildlife populations as well as tourism development, and a process has been started to resettle the villagers elsewhere.

Aiming to contribute to a further understanding of how resettlement policy gets translated in practice, this article first describes the politico-economic context that led to the decision to resettle people. We focus on an inherent contradiction of the resettlement process: the resettlement is officially 'voluntary', yet the LNP has adopted the World Bank's 'involuntary' resettlement framework. Then, we analyse the implications of this decision both for park residents and park staff, specifically exploring how voluntary such resettlement can be, while embedded in the context of international conservation lobbies and private sector interests in tourism development.

⁶ The GLTP refers to the three national parks. Another commonly used name is the GLTFCA (Great Limpopo Transfrontier Park and Conservation Area) which refers to the national parks and the space between them.

This article is based mainly on qualitative research undertaken in the area over a period of five years. Our methods included participant observation in the park and interviews with residents, government officials, donor agencies and technical advisers to the project. The authors attended community meetings with LNP staff and other relevant meetings including internal village meetings, district-level planning meetings and donor meetings in Maputo. Furthermore, the authors consulted official documents and reports and analysed the results from two surveys with park residents carried out previously in the park⁷.

Transfrontier conservation, resettlement and the private sector

Many environmental organisations are promoting transfrontier conservation initiatives, arguing that ecosystems straddle international boundaries (Aberly 1999; Wolmer 2003). Proponents argue that the creation of transfrontier megaparks will generate economic development especially through an increase in revenues from tourism and that communities living in and adjacent to these megaparks will benefit from this development. Most conservation areas, whether newly established or not, have people living in them who depend on the natural resources in these areas for their livelihoods (Cernea and Schmidt-Soltau 2006). Though in the late 1980s conservation organisations and agencies started to develop programmes to increase local participation in and benefits from conservation, a number of scholars have noted recently that there is a movement back to so-called 'fortress conservation' (Hutton et al. 2005). Conservationists from international conservation organisations and national agencies seem to have returned to the idea that people and wildlife cannot coexist, that people are a threat to nature, and that the only solution to the potential conflict over resources is to remove people from the area (physical displacement) or to restrict their access to resources (that is, economic development, see Cernea 2005). Although this perspective is challenged (Rangarajan and Shahabuddin 2006), and population resettlement is often known to cause further impoverishment among both resettled and host communities (Brockington 2002) as well as considerable resource degradation around and inside the conservation areas (Cernea and Schmidt-Soltau 2006; Rangarajan and Shahabuddin 2006), displacement is still a common management strategy. According to Cernea and Schmidt-Soltau (2006), the number of people displaced from conservation areas will more than double in central Africa by 2012. Brockington, Igoe and Schmidt-Soltau (2006: 250) suggest that many conservation areas worldwide have 'yet to be cleared of people' and seem to be heading in that direction.

The return to fortress conservation coincides with a growing private sector involvement

⁷ These were carried out by the University of Witwatersrand Refugee Research Programme in 2002 and Rachel DeMotts in 2003-4, both courtesy of Rachel DeMotts.

in nature conservation. Private sector representatives promoted the idea that conservation areas can stimulate development through tourism, which supposedly also benefits communities living in and adjacent to conservation areas. Over the past two decades a number of environmental organisations that are promoting transfrontier conservation initiatives have either been established or supported through private funding, the late Anton Rupert's Peace Park Foundation (PPF) being the best-known example (www.ppf.org). Thus the private sector's stimulation of transfrontier conservation is sometimes seen as turning conservation into a transnational business opportunity (Chapin 2004; Hutton et al. 2005). The promotion of the Great Limpopo transfrontier conservation area was further enabled by neoliberal policy agendas adopted by southern Africa's governments (Wolmer 2003; Ramutsindela 2004b, a; Duffy 2006; Spierenburg et al. 2008).

Resettlement as voluntary and for development

According to our research in the area, most residents of the LNP began to feel the effects of economic displacement soon after the park was established in 2001, through the application of new park regulations prohibiting hunting and restricting extraction of forest products for commercial purposes. The decision to resettle people dates back to late 2003, when the inhabitants living along the Shingwedzi River were told they would be moved outside the park. The German Development Bank (KFW), the main donor funding the establishment of the park and the resettlement itself, stipulated that relocation would be voluntary⁸. In a recent article, Schmidt-Soltau and Brockington (2007) warn against the trend of calling resettlement of people in protected areas 'voluntary' due to complications in determining volition, and because of a lack of international (and often of national) policies to guide voluntary resettlement. They argue that the large majority of conservation areas in developing countries do not provide the conditions necessary to call a resettlement truly voluntary (that is, the opportunity for residents to have a 'real choice to say no to the government or conservation organisations') and therefore should be described as involuntary (2007: 2195). Unlike the case of voluntary resettlement, international policies for involuntary resettlement do exist. In 2001 the World Bank released such a policy (OP (operational manual) 4.12), which has since become the global standard used to judge the adequacy of resettlement schemes. The LNP adopted this involuntary resettlement policy precisely because it is an internationally recognised standard. The resulting inconsistency has created significant problems for both residents and park staff, as will be shown below. The World Bank policy specifies that involuntary resettlement should be 'avoided

8 Contrary to the Mozambican government's initial intentions as claimed by several anonymous respondents.

whenever possible, and when unavoidable, it should be executed as a sustainable development programme, enabling people to share in project benefits' (Huggins et al. 2003; LNP 2007). As recommended by the framework, the LNP resettlement project is presented as a development initiative that will offer possibilities for better access to state services such as schools, health facilities, public transportation and jobs. However, it has been argued that the possibility that either transfrontier conservation or resettlement initiatives will lead to development is doubtful (Wolmer 2003; Brockington and Igoe 2006; Spierenburg et al. 2006). Other authors such as Karanth (2007: 323) see resettlement as a viable option for improving human lives if carried out in a 'socially just and equitable manner'.

Resource management regime change: From a hunting concession to a national park
Originally, the concept of the Great Limpopo was that it would become a vast conservation area, including the Kruger National Park in South Africa, Gonarezhou National Park in Zimbabwe, Banhine and Zinave National Parks and Coutada 16 in Mozambique then a private hunting concession (Munthali and Soto 2001). However, the political economy of conservation instigated a more radical management change for Coutada 16 in Mozambique. The hunting concession was converted into a national park:

...because of its location, because it is not alone—it is attached to another 'total park' [Kruger National Park]. The idea was to open the boundaries of the Kruger and, if this were to be possible, the LNP also had to be a 'total park' ... the LNP had to follow the model of Kruger and Gonarezhou⁹.

The resultant dominance of the national park management regime in the transfrontier area was further reinforced by the effects of this particular conservation regime in the Kruger National Park. Rising elephant populations there were becoming an environmental concern, at least partially as a result of a moratorium on elephant culling implemented in 1995. South African National Parks (SANParks) saw transfrontier conservation as a potential solution to this problem and subsequently invested resources to support the new park (Venter et al. 2008). Opening the fence with Mozambique would also permit other animals to cross the border at risk of being hunted; therefore SANParks was reported to accept only a maximum park model as a condition for signing the TFCA treaty¹⁰. Another argument put forward to explain the emerging dominance of the national park management regime was South Africa's national security concerns; a national park in Mozambique would diminish the chance of population concentrations at South Africa's eastern border (Wolmer 2003).

⁹ LNP staff member, interview, 30 April 2007.

¹⁰ KFW representative, interview, 17 April 2008.

The Peace Parks Foundation was assigned an important role in implementing the park model; the foundation has deployed some of its South African personnel to serve on the Project Implementation Unit (PIU) in Mozambique that is directly responsible for making management decisions in what is now the Limpopo National Park. The brochure that the PPF published in collaboration with SANParks to celebrate the signing of the final treaty on the Great Limpopo between the heads of state in December 2002 shows how both organisations interpreted the concept 'park':

All a transfrontier park means is that the authorities responsible for the areas in which the primary focus is wildlife conservation, and which border each other across international boundaries, formally agree to manage those areas as one integrated unit according to a streamlined management plan. These authorities also undertake to remove all human barriers within the transfrontier park so that animals can roam freely (South Africa National Parks and Peace Parks Foundation 2003, *italics added*).

According to Mozambican law¹¹, a national park is conferred the highest status of protection and it is illegal to reside there. However, in practice all national parks in Mozambique have people living in them, while generally the national parks in the surrounding countries are void of inhabitants.

Implications of adopting the park model: The decision to resettle

Despite different realities within Mozambican national parks, the adoption of the park model and its integration into the GLTP implied the need for resettlement, as was acknowledged by a senior park official:

It is clear that there is competition for resources for land, for water, for forest resources between the animals and the human inhabitants. Since this kind of [park] model was chosen, there is no choice but to resettle people¹².

Yet, alternative explanations for the emerging need for resettlement were put forward. A representative from the park's main donor organization pointed to South Africa's conservation regime:

We knew that there were people from the beginning, but somehow we thought that given our experiences in other parks people would be able to stay inside without

¹¹ The LNP is classified as a national park of IUCN category 2. Although a national policy governing conservation areas is in the process of being developed, currently the Land Law no. 19/97 and the Forestry and Wildlife Law no. 10/99 determine the rights to land and use of natural resources.

¹² LNP staff member, interview, 30 April 2007.

a problem. However, shortly after, Kruger decided not to manage their fences and animals started coming in. The human wildlife conflict began to be complicated and we realized that the best option was to resettle people¹³.

The human wildlife conflict began to emerge not only as a result of unmanaged fences, as the donor suggests. Wild animals were translocated to the area and fences between KNP and LNP were actively cut (Anderson and Pariela 2005).

Following the Kruger model, the LNP was divided into three major zones: the tourism zone, the wilderness zone, and what is called the support zone, where the remaining 20,000 people live and for whom there are currently no plans for physical displacement. The tourism zone was superimposed on the Shingwedzi River valley and eight resident villages. The LNP management plan (DNAC 2003) describes the rationale for this zoning in terms of a need for up-market development areas offering suitable game viewing and a 'wilderness' type experience that would attract private sector investment. Economic necessity, in combination with certain ideas about what 'wilderness' should look like to attract tourists (Draper et al. 2004), thus became a third apparent driver for resettlement:

The issue is that we needed to be able to prove that a park can make money. And in order to be able to make money we needed to be able to attract tourists. To attract tourists, we had to have some animals. At that time the park had no animals at all. Right now, we are the only park in Mozambique making money. At that time, resettlement was not even part of the plan. The government still did not see resettlement as necessary. We tried to convince them of it, but they did not agree¹⁴.

A fourth justification for resettlement was a perceived threat of poaching. In 2002 the PPF and the Mozambican Ministry of Tourism hired a team of consultants to conduct a socio-economic and attitudinal survey among the residents of the LNP¹⁵. They concluded that poaching was a 'very likely' threat to the park. The report speaks of 'bandits' in the area posing a threat, but also fears that residents will take advantage of:

...the potential 'resource' of high profit game coming into an area where the population is currently struggling for subsistence [which] creates a high potential for this to be seen as a potential means of additional income ... This is especially relevant since the Limpopo National Park was formerly designated as a hunting concession, where the killing of game for subsistence as well as economic purposes was viewed as the norm (Woodburne et al. 2002: 3-29).

¹³ KfW representative, interview, 17 April 2008

¹⁴ LNP staff member, interview, 30 April 2007.

¹⁵ Note that this was after the declaration of the LNP.

Though the consultants noted that the former status of the area may have shaped residents' attitude towards wildlife, they suggest that the solution is to be sought in educating residents and by 'integrating them into the conservation process' (Woodburne et al. 2002: 4-11). No mention was made of the need to provide alternative sources of income and food before limiting their existing livelihood activities through implementing park regulations.

As problems became more acute, a number of options were discussed, including fenced enclaves. These debates resulted in a plan to resettle villages from the Shingwedzi River valley. Arguably, resettlement was implicit in the adoption of the park model. The decision was justified in terms of the mitigation of human and wildlife conflict, the promotion of tourism and reducing the threat of poaching.

Contradictions of resettlement: Residents' views

In line with the World Bank involuntary resettlement policy, the Mozambican government and the LNP staff present resettlement as a development opportunity for residents. However, the understanding of what development means differs between those designing it and those subjected to it (see, for example, Laurie 2005). At a press conference on 23 May 2005, the then coordinator of the PIU of the LNP stressed that resettlement would benefit not only the park but also the communities. He announced that the first hundred families would be resettled soon, and remarked:

It is hoped that this will lead the remaining families to understand that the park will not damage their interests but will actually improve their lives. Families in this area can never rely on farming [alone] to escape from poverty: the soils are poor and the semi-arid climate guarantees that yields from agriculture will always be low¹⁶.

Residents are thus portrayed as poor and unable to develop themselves as long as they stay inside the park. Such views are also reflected in a comment by an ex-administrator of the LNP, who considers that 'people will learn that it is better to have a job than cattle'¹⁷. Clearly, these officials' statements are part of a certain discourse of (state-driven) modernisation or development. However, at the moment the resettlement process itself does not provide for alternative livelihood options that can bring this development¹⁸.

¹⁶ Press statement published by the Smart News Network International, (www.bernama.com/cgi-bin/ssn2/list_item.cgi?peserta/mozambique/mo2505_2.txt, last accessed on 27 May 2005).

¹⁷ Interview, 26 April 2007.

¹⁸ It has been argued that small-scale agricultural production is deeply distrusted by Mozambican government officials and believed to be an insufficient basis for the development (Hughes 2006).

Interviews with residents in four villages designated to be resettled suggest that many feel that outside the park they will not have access to resources that hitherto have been key to their livelihood security. They are concerned about not having access to suitable land for agriculture, and facing a lack of forest resources and reduced grazing land. Elderly people in particular express concern about not having access to certain plants and resources to which they currently have easy access: 'When there is no rain and we cannot produce our maize, we will die because we won't know where the trees are that have fruits. When we get sick we will suffer because we won't know where the medicine trees are.'¹⁹ Some residents are also concerned about access to land for their children. As part of the resettlement compensation, some agricultural fields will be replaced, but access to land for future generations 'will be identified but not developed' (LNP 2007: 37).

Wealthy families are even less likely to see advantages in the move, especially those who have very large numbers of cattle. They commonly cite three major reasons: they consider that working for money is not an attractive alternative option, that grazing is likely to be problematic as their cattle will have to compete for food and water with those of the host villages, and they are afraid of cattle theft which is more common outside the park. One man foresees, 'My children will have to stop studying because they will have to look after the cattle. Here we just let the cattle free for days at a time without having to watch them.'²⁰ Furthermore, the power base of these influential families is likely to be eroded by merging into another village, or living on 'someone else's land'.

Quite a number of young people, however, claim that if all of the promises that government has made are kept, indeed there will be benefits that they consider 'development', such as proximity to health facilities, jobs and concrete houses. As one young woman said,

Life that we will have there will be an advantage if they take us out of this poverty. We will be living in a city because there is city life there. If they build houses for us it will be very good. We will be very satisfied there. We will be able to work [jobs] when we don't have food. We want that type of city life²¹.

However, our studies also found that many residents doubt that the promises of better services, water pumps, houses and proper compensation (including job opportunities)

¹⁹ Nanguene female resident, interview, 23 May 2007.

²⁰ Macavene male resident, interview, 3 June 2007.

²¹ Nanguene female resident, interview, 22 May 2007.

will be fulfilled, and they have a deep distrust of the park project. When asked about how life outside of the park will be different, residents rarely perceive that it will be a positive change or bring development, but they recognise that resettlement represents respite from the emotional and physical damage inflicted by elephants.

Willingness to move: Changes over time

Residents' willingness to move is tied closely to their concept of where they think they can live a better life. Their weighing of advantages and disadvantages is a dynamic process which changes with the changing circumstances. It is important to reiterate that our study found that there is no unanimous local opinion about moving, but rather a wide range of opinions that have fluctuated over time (see also Woodburne et al. 2002: 7-14). Evidence suggests that while very few people actually want to leave, many have realised that in the long run it is potentially beneficial to 'accept' to leave. According to a survey carried out by IUCN²² in 2001 when residents were first informed that they were now living within a national park the idea was met with considerable resistance.²³ In 2002 another survey was carried out by the Refugee Research Programme (RRP) from the University of Witwatersrand, when villagers were asked, 'If you had to move, where would you go?' 95% of the respondents replied that they would refuse to move.²⁴ Although there are still people who claim to refuse to be resettled, five years later many people have 'accepted' to leave for diverse reasons associated with what resettlement means for them, including previous experiences with relocation and increasing problems with wildlife.

Previous experiences relocating

The villagers in the Shingwedzi valley have already been forced to move a number of times (some up to five times) for various reasons over the last forty years. The rural villagisation policies of FRELIMO, following Mozambique's independence, forced dispersed families into conglomerated villages. Shortly after, some families suffered multiple relocations due to the war (first to larger, safer villages, then often to South Africa), and then being repatriated back home after the war. In some cases, under the jurisdiction of recent versions of the same villagisation policy, people have been forced again into conglomerated villages. In some cases this forced relocation has caused increased resistance to moving again. As one resident said, 'We have done always what the government has asked us to do. We moved here and there and we finally came back from South Africa because they told us to, and now this?'²⁵ This history of

22 The International Union for the Conservation of Nature (IUCN).

23 IUCN report, February 2002.

24 RRP database, digitalised by Rachel DeMotts. See also (RRP 2002). The database contains interviews with 84 heads of households and 10 local government officials.

25 Makandezulo male resident, interview, 17 November, 2006.

relocation is sometimes used against the residents, and questions of belonging are raised. As an LNP project coordinator expressed it in an article on the PPF-website, 'many villagers only moved into the area after Mozambique's civil war ended, and they are not used to living with wild animals'.²⁶ In fact, there has been documented evidence of long-term occupation of the area (Harries 1989). Other people, especially young men who engage in migrant labour, refer to moving to South Africa and getting used to living in a different place when asked about their expectations for the resettlement outside of the park. One young man explained, '[Resettlement] will be like going to South Africa because you arrive there and you don't know anyone but then you get used to it. But it won't be so difficult this time because I will be with my whole family.'²⁷ Yet, many people remember feeling like second-rate citizens in South Africa. Another point of reference is the return of refugees from South Africa after the war: 'We decided to accept to leave the park because we remember when the government offered to help to bring people back here after the war those who didn't take the help at that moment later got nothing.'²⁸

Although residents from this area have a history of moving around, and they have proven to be extremely adaptable to new circumstances, proximity to land considered ancestral, and corresponding access to natural resources, have been important driving factors. According to the Refugee Research Programme (RRP) (2002), 70% of people who chose to return to Mozambique after the war did so to be able to produce their own food because in South Africa availability and access to land for cultivation was difficult and many people worked for money to buy food.²⁹ When returning from South Africa or protected villages after the war, many people chose to disregard villagisation efforts and returned to previous homesteads to live close to their fields.³⁰ As one woman expressed it, 'It is very difficult to fit into a place where you were not born.'³¹

The 'invasion' of wild animals

At first the declaration of the park implied very few changes in the daily lives of the residents or in their relationship with wildlife (Norman 2005). However, as increasing numbers of elephants moved into the Limpopo National Park from Kruger Park, residents began to feel the repercussions of the park project on their lives. People began to complain about being at the mercy of the elephants: 'We cannot live here

26 See www.peaceparks.org, article 'Villager relocation a win-win', last accessed 27 June 2007.

27 Nanguene male resident, interview, 16 March 2007.

28 Nanguene male resident, interview, 24 April 2007.

29 Interviews in Nanguene and Macavene 2006-8.

30 Interviews with various village members of Nanguene and Macavene 2006-8; Leonardo, 2007

31 Nanguene female resident, interview, 26 April, 2007.

32 Nanguene female resident, interview, 28 February 2007.

with elephants. We plant our corn to feed the elephants and then we suffer.’³² The years following the implementation of the LNP were drought years that allowed for little agricultural production. Droughts in this area are not uncommon but previously subsistence hunting would carry the local residents through. The residents of the LNP learned quickly that hunting, even of small game for consumption, was against the rules and regulations of the park, and hunters were seriously punished if caught (DeMotts 2005; Norman 2005). The rainy season of 2005/6 did yield maize, but this simply attracted the elephants to the villages’ cultivated areas. In 2006 more than 600 elephants were counted in a third of the park, indicating a potential total population of as many as 1,000.³³ That year was also the first year that the residents within the LNP experienced widespread human and wildlife conflict. Complaints about lions attacking livestock began to circulate, but it was not just the loss of crops and livestock that worried people. Their greatest fear became that of attacks on themselves by wildlife when moving around the park, and fear for their children’s safety. Women reported that they have stopped carrying out activities such as fruit collecting and cultivation in certain areas.³⁴

Residents complain they have no means of protecting themselves, their cattle or their harvests against wildlife: ‘Whenever we report damage to our crops and the loss of our cattle to the people from the park nothing is done, but whenever we try to defend ourselves against the wild animals they are there within a minute to arrest us.’³⁵ No compensation is paid to residents for the loss of crops or livestock.

Stuck between a rock and a hard place: LNP staff negotiating resettlement

Just as the conditions and perceptions that influence residents’ volition to resettle are constantly in flux, park authorities are also under changing pressure from different stakeholders. In the case of resettlement, some demand a more participatory process (the donors and project evaluators) while others push for a faster process (the Mozambican government and in some cases the residents themselves). However, government simultaneously impeded project progress:

They told us to do a study about resettlement -- we wrote a resettlement framework and described options for resettlement but then, in 2004 there were elections and for six months we were not allowed to talk about resettlement. The governor of the province of Gaza at that time said ‘Who said you will be resettled?’ While now he is the Vice-Minister of Tourism in the ministry and he says, ‘Yes, you will be resettled.’ No one wanted to take

³³ LNP wildlife manager, interview, 26 November 2006.

³⁴ Interviews in Chimangue, Makandezulo and Machamba, October 2007.

³⁵ Mavodze resident, interview, April 2005.

responsibility for that time and the process was stopped. In 2005 there was a [meeting of the] CCR [Consultative Committee on Resettlement] again to take up the issue and everyone blamed everyone else for the process being stopped. These pauses have had huge negative impacts in the field.³⁶

Though officially resettlement is still labelled as voluntary, it is generally recognised as being ‘induced’,³⁷ as an ex-park administrator described it, given that the park was established without any consultation with the villagers and now they are forced to live with the consequences. Nevertheless, the label ‘voluntary resettlement’ persists because of political allergies to the word ‘involuntary’, both in Mozambique and in donors’ home countries.³⁸ ‘No donor would ever agree to involuntary resettlement. It cannot be involuntary. It indeed should be called negotiated or accepted resettlement. In fact what goes on is involuntary resettlement, but people are given incentives to convince them to leave.’³⁹

As a result of the labelling, park authorities have been put under pressure to obtain proof of consent to resettlement. A certain resignation is sometimes expressed in regards to the move: ‘This land has already been sold, they told us we have to go, so we will go.’⁴⁰ But consent is generally not easily forthcoming, and politicians have also directly exerted pressure on the residents, as this statement from the provincial governor exemplifies: ‘We are offering you development and there are people here who are making it impossible for us to help you improve your lives.’⁴¹

The consequences of induced volition

The time and effort spent on ‘inducing volition’ have further prolonged an already lengthy process. As a consequence, many have become weary of the whole resettlement process.

Since the park was made we were supposed to leave. Since they said that, people don’t construct houses, we don’t plant trees. This house was built in 2000 but it was never really finished because the park came. There were trees but we stopped planting and the old ones died [papaya]. No one is investing, not to do things for nothing. Even now that we have accepted to leave, the park does nothing.⁴²

36 LNP staff member, interview, 30 April 2007.

37 Interview with former park director, March 2006, and other sources.

38 Various sources, anonymous.

39 Anonymous donor representative, 17 August 2007.

40 Interviews in Macavene May and June 2007.

41 Governor’s speech in Mavodze (a village along the Shingwedzi River), 23 May 2007.

42 Macavene male resident, interview 16 May 2007.

As the extent of residents' decision-making power in the 'voluntary' resettlement was never clearly defined, confusion, frustration and delays have built up. This became most apparent in the negotiations about compensation. Village leaders were consulted on certain details of compensation, such as the design of the resettlement houses, only to be told afterwards that their desires could not be accommodated. One resident claimed his perceived rights under voluntary resettlement: 'Not one person from the communities wrote the government to ask to leave. The government wants us out so they need to do what we say.' This led a community leader to comment on the participatory nature of what was supposed to be a voluntary process: 'You [park staff] should have just built houses and have presented them not having asked us for our opinions.'⁴³ For the park officials the situation was equally confusing, as their mandate was both ill-defined and shifting because of political push-and-pull. The resulting lack of transparency about the resettlement process at the local level created an environment of distrust. As one LNP staff member commented:

One of the issues is that, because of all of this confusion, no one [of the park staff] is working in Massingir. Everything is stopped. And I believe that the villages have not even been informed about what is going on. The problem is that there is really no news to give them they do not like to go home without something to say, something positive. That is why we don't organise meetings now, even though it is an important message to tell people: why things are not working.⁴⁴

This statement illustrates the conclusion of Rew, Fisher and Pandey (2006: 46) that in many resettlement projects local staff are 'prisoners themselves of completely contradictory pressures', yet they shoulder almost all of the responsibility for contact with residents. Despite such periodic stalemates, government and donors are increasing the pressure on LNP staff to resettle the first village as soon as possible. Funding for the resettlement of the rest of the villages will be jeopardised if the first one is not moved soon.

This resettlement process is a matter of pride for many people here. This pilot project cannot fail. The LNP depends on it to be able to resettle other villages, KfW needs it so their project is not criticised, the Mozambican government needs it because it is a model for resettlement and for tourism development for the whole country, the GLTFCA needs LNP to be a success or else it will fail as a project too. Kruger needs it to be a success or else they will have to put back up the fences, and even Zimbabwe, in order to deal with their population inside the park there, they will look to us as a model.⁴⁵

⁴³ Community meeting, Massingir 14 March 2007.

⁴⁴ LNP staff member, interview, 31 July 2007.

⁴⁵ LNP staff member, 19 September 2007.

Conclusions: (In)voluntary resettlement and the policy process

The incorporation of Coutada 16 into the transfrontier park resulted in the creation of Limpopo National Park, entangling both residents and park staff in the complexities of (inter)national policy discourse and private sector interests in conservation. This web of global conservationist and private sector interests as well as the lure of conservation-fuelled economic development has largely shaped subsequent events and their internal contradictions, such as the (in)voluntary resettlement process.

This study has revealed the need for a differentiated view on volition in resettlement that goes beyond the recognition that there is a continuum between voluntary and involuntary resettlement (Schmidt-Soltau and Brockington 2007). First, whether or not people want to be resettled varies considerably from person to person. It is a complex question that involves personal histories, generational differences, family wealth, trust in governmental promises and submission of rights to governmental orders, as well as perceptions of the park and of what resettlement might bring. Second, it is equally important to note that there is a fluctuation in volition over time. As the resettlement policy process unfolds, altering residents' livelihood opportunities and their relationships with authorities, the willingness to resettle shifts back and forth along this continuum.

The heterogeneity of needs and preferences among inhabitants destined to be resettled is an issue that the World Bank involuntary resettlement framework attempts to address by promoting choice at the household level, and participation at the planning and implementation stages of resettlement. However, as this case has shown, meaningful participation is seriously hampered when the demands of (inter)national policy discourses on development conflict with practical implementation of policy. This raises an issue for future research. While Schmidt-Soltau and Brockington (2007) bank on the validity of the international standards for involuntary resettlement, it remains to be seen if World Bank standards can be enforced, or are sufficient to protect resettled people from impoverishment.

In the case discussed here, efforts to adhere to World Bank standards for involuntary resettlement were complicated by residents' false sense of decision-making power and unrealistic political demands on park staff resulting from calling the resettlement 'voluntary'. This led to conflicts and frustrations for residents, staff, donors and government that may not have emerged had the resettlement been regarded as involuntary from the beginning, and had efforts been invested in the negotiation of just compensation. The LNP, because of the context from which it emerged, could not provide conditions for a voluntary resettlement process. However, as one LNP staff remarked, 'The politicians don't realise the importance on the ground of one label or another.'⁴⁶

⁴⁶ LNP staff member, interview, 30 April 2007.



4

The elephants of democracy:
Enacting participatory resettlement policy

ABSTRACT

Based on an analysis of seven years of negotiations about resettlement of villages from the Limpopo National Park in Mozambique, this paper explores how resettlement policy (WB OP 4.12) was enacted in practice. By combining insights from policy implementation and participation literature, we analyse how participatory spaces for influencing policy outcomes were opened and closed over time through reinterpretation of meanings attributed to policy concepts, and through changing power relationships. We assess how the resettling residents were able to influence decisions about post-resettlement conditions, and conclude that better implementation and enforcement of policy is not likely to mitigate the impoverishment risks of resettlement.

Keywords: resettlement, participation, policy implementation, WB OP 4.12, Limpopo National Park, Mozambique

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The elephants that we are used to were different. We could speak to them and they would understand. But these new elephants speak Portuguese or Afrikaans or English because when we speak to them they don't understand anything. These elephants are here because of the park. They were brought in on trucks. They come from South Africa. These elephants were brought here by democracy. They are elephants of democracy.

—A woman in Chimangue village, inside the Limpopo National Park, November 2006

The 'elephants of democracy' represent the seemingly overlooked implications that 'democracy' would have for some residents of the Limpopo National Park in Southern Mozambique. After the nation's official transition to democracy in 1994, internationally-funded projects, participatory approaches and democratic rhetoric flooded the country (Pijnenburg 2004). One project made possible by the transition was the creation of the Limpopo National Park (LNP) in 2001. The park was established in an area inhabited by approximately 27,000 people. As the quote suggests, elephants were translocated into the area on trucks to stock the new park, where wildlife was decimated during the civil war (Arenstein 2002). Park managers decided that 7000 residents would have to be resettled to areas outside the park's boundaries to make room for wildlife, and for tourism. The resettlement, however, would be 'voluntary' and the residents themselves would participate in the planning. For the residents of the area, not just the elephants were foreign, but so were life changes that accompanied it (DeMotts 2005; Norman 2005; Spierenburg et al. 2006). Suddenly faced with an uncertain future, residents had to learn the language of participation in their struggle to gain leverage in negotiations about the resettlement process. Faced with a changing state-citizen relationship and armed with new resources, communication with government officials took on a whole new dimension.

People resettled by development projects or to make room for conservation areas commonly face economic, socio-cultural and social welfare impoverishment (Cernea 1997). A better understanding of the complexity and negative consequences of such resettlement has resulted in policies that aim to minimize or mitigate these risks. In 1980 the World Bank (WB) developed the first international policy for resettlement (Cernea and McDowell 2000). The policy has undergone a series of revisions, the most recent of which, in 2001, resulted in the World Bank Operational Policy on Involuntary Resettlement 4.12 (WB OP 4.12). The policy states that resettlement should be carried out as a development project that leaves people better off than they were before, and encourages the participation of residents in resettlement planning. However, the role that international policies on resettlement can play in minimizing the risks of

impoverishment is uncertain. After 30 years of experience with involuntary resettlement policy, studies carried out by the World Bank itself (World Bank 1994b) and others (WCD 2000) have concluded that resettlement policy is not sufficient for avoiding negative effects of resettlement (Clark 2009a).

One common recommendation for improving resettlement outcomes calls for more resident participation in the decision-making process. This is based on the idea that participation has the potential to ease resistance, increase people's sense of ownership over the process of resettlement, and contribute to the design of living conditions that are acceptable to them (WCD 2000; Koenig 2006; de Wet 2009). Another recommendation, aimed at safeguarding the rights of affected people, calls for better implementation practices (Cernea and Schmidt-Soltau 2006; Schmidt-Soltau and Brockington 2007), external enforcement and independent monitoring of standards (Clark 2009b; de Wet 2009). Schmidt-Soltau and Brockington (2007: 2195) outline the need for thorough documentation of free, prior and informed consultation and resettlement action plans in line with international standards in order to qualify for financial assistance from public sources. Resettlement processes, however, are riddled with power struggles (Dwivedi 2002; Koenig 2006; de Wet 2009), and conflict of interests with respect to resource allocation (Turton 2002; Barutciski 2006; Clark 2009b) that complicate participation and policy implementation. The implementation of resettlement policy continues to be identified as one of the most important barriers impeding successful resettlement, but few studies have been carried out on resettlement policy implementation in practice (Rew et al. 2006). Gaining a firmer grasp on how resettlement policy is implemented in practice may contribute to understanding why resettlement is repeatedly detrimental to affected people.

Policy research indicates that policy cannot be implemented in a linear fashion; rather, it is enacted through interpretation and translation (Stone 1988; Long and van der Ploeg 1989; Hofmann 1995; Yanow 1995). The concept of policy enactment emphasizes the central role of the agency of actors in shaping the policy process. Literature on participation suggests that participatory processes are uncontrollable and inseparable from the exercise of power (Arnstein 1969; White 1996). There are ample studies on the role of participation in policy-making (Fischer 2000; Hajer and Wagenaar 2003; Aarts and Leeuwis 2010) but little is understood about its role in policy implementation (Turnhout et al. 2010). In this paper we draw on insights from these two bodies of literature to understand how participation influenced policy outcomes in practice. We analyse seven years of resident participation in negotiations about compensation for resettlement and donor enforcement of this participatory process to answer two questions: 1) How was the World Bank's policy on participation in resettlement (OP 4.12) enacted?

and, 2) How did this process contribute to residents' ability to influence resettlement outcomes?

PARTICIPATION, POLICY AND PRACTICE

Participation is inseparable from the exercise of power

The concept of participation has been adopted into mainstream development policy and practice as a result of widespread recognition of the fact that some form of participation is necessary to achieve relevant and sustainable development (Hickey and Mohan 2005). However, research on participation has showed how participatory rhetoric rarely leads to stated outcomes of 'empowerment' (Cleaver 1999; Cooke and Kothari 2001), and in practice participatory approaches have been criticized for failing to engage in the issues of power and politics that are evoked by the language of participation and empowerment (Hickey and Mohan 2005). Research has criticized the way that they have been adopted into disempowering agendas that obscure existing power imbalances and depoliticise policy interventions (Ferguson 1994; Rahman 1995). Participatory approaches have also been criticized for their focus on the local without consideration of larger, encompassing limitations to empowerment (Mohan and Stokke 2000; Mohan 2001). In practice, participatory approaches also often do not take into account conflicts and diverging interests among actors that may impede the kind of citizen participation that actually leads to social change and transformation (Leeuwis 2000). While an exhaustive review of the literature on participation and development is beyond the scope of this article, some recent work on issues of power and 'new democratic spaces' created by participatory rhetoric are particularly relevant to the discussion of participation in resettlement policy and practice.

A number of critical scholars have suggested that participation, despite criticisms, can create opportunities for dialogue and social transformation (Cornwall 2002; Hickey and Mohan 2004; Williams 2004; Hickey and Mohan 2005; Singh 2009). Hickey and Mohan (2004) redirect the focus of attention away from discrete events and the facilitated activities of participatory development practice, towards issues of political agency and wider process of 'citizenship', 'rights' and development of 'political capabilities'. Cornwall (2002) describes the definition, creation and metamorphosis of new spaces for political action that may accompany a shift from 'participation' as a practice imposed 'top-down', to citizen participation, akin to grassroots democracy. Williams (2004) outlines ways in which this shift can occur— through increased contact with politicians, political networking and by using the values of participation to demand information and transparency. In this perspective, participation has the potential to open up spaces for change, sometimes in ways not expected or intended (Parfitt 2004; Williams 2004; Sneddon and Fox 2007; Classen et al. 2008). This is one manifestation

of the way that participation is inseparable from the exercise of power (Arnstein 1969; White 1996).

Cornwall (2002) argues that the concept of space is particularly useful for understanding the dynamics of power in participatory processes. This paper analyses the opening and closing of these spaces throughout the participatory planning process of resettlement. We adopt the definition of policy spaces defined by McGee (McGee 2004: 18, citing Grindle and Thomas 1991), as ‘...moments in which interventions or events throw up new opportunities, reconfiguring relationships between actors or bringing in new ones, and opening up the possibilities of a shift in direction’. Participatory discourse is evoked in WB OP 4.12 as a procedural and instrumental element to aid planning, but it was not intended as a transformative element to facilitate empowerment. However, there is a thin line between participation as a planning tool and as a resource in political struggle. It is along this line that we conduct our analysis.

Does policy drive practice or does practice produce policy?

Studies of policy implementation attempt to understand the discrepancy between stated policy goals and implementation outcomes. Many earlier explanations for this ‘gap’ identified technical practicalities, such as the wording of the policy text, miscommunication, lack of incentives, or lack of capacity to be major causal factors (Yanow 1996; DeLeon and DeLeon 2002). This kind of explanation is based on the assumption that the problems are concrete, fixable, and the ‘correct solution’ can be found (Hofmann 1995; Yanow 1996). However, such assumptions ignore that individuals experience and interpret policy ideas reflexively on the basis of their own agency, perceptions, and knowledge. Studies of policy analysis have shown how the same policy artefact can give rise to different events, outcomes and practices in different contexts (DeLeon and DeLeon 2002). Because the actors exposed to the policy process shape the enactment of policy in practice through their interpretations and actions (Lipsky 1971; Hofmann 1995; Yanow 1995; DeLeon and DeLeon 2002), the policy process, then, can be seen usefully as a struggle for the determination of meanings (Stone 1988; Yanow 1996). Through this struggle, groups can actively pursue agendas contradictory to those intended by policy-makers (Long and van der Ploeg 1989).

A policy process consists of the series of ensuing events and set of practices that take place as a result of the introduction of a policy artefact into a particular context. One of the major conclusions of the policy implementation literature is that policy cannot be implemented in a linear sort of planned process; it is enacted. Policy enactment entails the ‘creative processes of interpretation and translation, that is, the recontextualisation through reading, writing and talking, of the abstractions of policy ideas into contextualised

practices' (Braun et al. 2011: 586). A focus the way in which the meanings people give to a policy shape the policy process is at the core of interpretive policy analysis (Wagenaar 2011). Studies in the anthropology of development, specifically ethnographic accounts of development practice, have shown that the relationship between policy ideas and policy in practice is not easily predictable (Hall 1994; Lewis et al. 2003; Mosse 2004; Bebbington et al. 2007; Li 2007). However, while many policy implementation studies have been carried out related to domestic, regulatory policy, much of it in the northern hemisphere, development studies and international policy continues to be an underexplored area of interpretive policy analysis. The participatory component of WB OP 4.12 also creates a new dynamic in resettlement policy practice that has not been fully explored. This paper, therefore, reformulates the crucial question of how resettlement policy is implemented and asks from an interpretive perspective, how is resettlement policy enacted in practice?

If we accept that participation is inseparable from the exercise of power and that practice drives policy implementation, we can move forward to ask what are the mechanisms at work in participatory policy enactment that shape policy outcomes. We do this by analysing the changing meanings attributed to policy concepts over time, and how changes in meanings became associated with changes in power relationships.

DATA COLLECTION AND ANALYSIS

This paper is based on the first author's ethnographic research carried out between December 2006 and June 2010, in Nanguene, the first village resettled from the LNP. Participant observation was the main method employed while living in the village over a period of two years during the preparation for resettlement (December 2006 to November 2008), and for 18 months in the post-resettlement location, the village of Chinhangane (November 2008 to June 2010). Deliberations between village residents and park officials, as well as between donor representatives and government officials were documented. All of Nanguene's 12 households were closely followed by means of observation, interviews and informal discussions with individuals and groups. More than 200 open and semi-structured interviews with residents in eight villages, district, provincial and national government officials (including park staff), donor representatives, private consultants, and NGO staff were conducted. In addition, ten park and two internal village meetings were attended. Meetings and interviews were transcribed and translated, as were unpublished park documents, consultancy reports and meeting minutes.

SETTING THE SCENE FOR RESETTLEMENT

Mozambique's political legacy and the establishment of the LNP

Mozambique has had a history of authoritarian, top-down, company-state rule. The post-independence, Marxist-socialist government dominated by the Mozambican Liberation Front party (FRELIMO) instated a socialist and nation-building agenda that left little room for individual or local level initiatives (Bowen 2000). The end of the civil war in 1992 marked, at least in theory, a shift to democracy in 1994. There is still little precedence for local level participation in formal governance (Abrahamsson and Nilsson 1995; West 2009), as is evidenced by residents' responses to the question, 'do you want to be resettled?' Many residents replied 'yes, because we have to. The government says so'.

The Limpopo National Park (LNP) was established as a stepping stone to the development of the Great Limpopo Transfrontier Conservation Area (GLTFCA) in 2002. The GLTFCA connects national parks in Mozambique (Bahine, Zinhave and now Limpopo), South Africa (Kruger) and Zimbabwe (Gonarezhou). Originally it was expected that it would not be necessary to resettle people. The decision to resettle inhabitants of the LNP was officially made after the establishment of the park.

Two villages, Nanguene and Macavene, were to be resettled as part of a pilot project (Figure 4.1) intended to develop a resettlement action plan that would be used for the resettlement of the other villages. Although Mozambique has resettled many populations because of war, natural disasters and villagization policies, such resettlements have never been carried out according to a policy framework such as WB OP 4.12. Although resettlement in the LNP was avowedly voluntary, WB OP 4.12 is an 'involuntary resettlement framework' (Milgroom and Spierenburg 2008).

The actors

There is a range of actors who have played important roles in resettlement (Figure 4.2). The German development bank (Kreditanstalt für die Wiederaufbau, KfW) has been the main donor to the LNP since 2001 and they were the sole donor to the resettlement initiative. A project back-stopper regularly monitored the LNP project. The World Bank was a minor donor to the LNP project and in parallel funded the development of three transfrontier conservation areas in Mozambique, including other parks within the GLTFCA (World Bank, 2005). Since LNP is part of the GLTFCA and resettlement was planned and carried out based on the WB OP 4.12, the WB became responsible for approving and monitoring the implementation of the resettlement pilot project. The Ministry of Tourism (MiTur) is responsible for all conservation areas in the country but, as the LNP falls within Gaza Province, the provincial governor also was

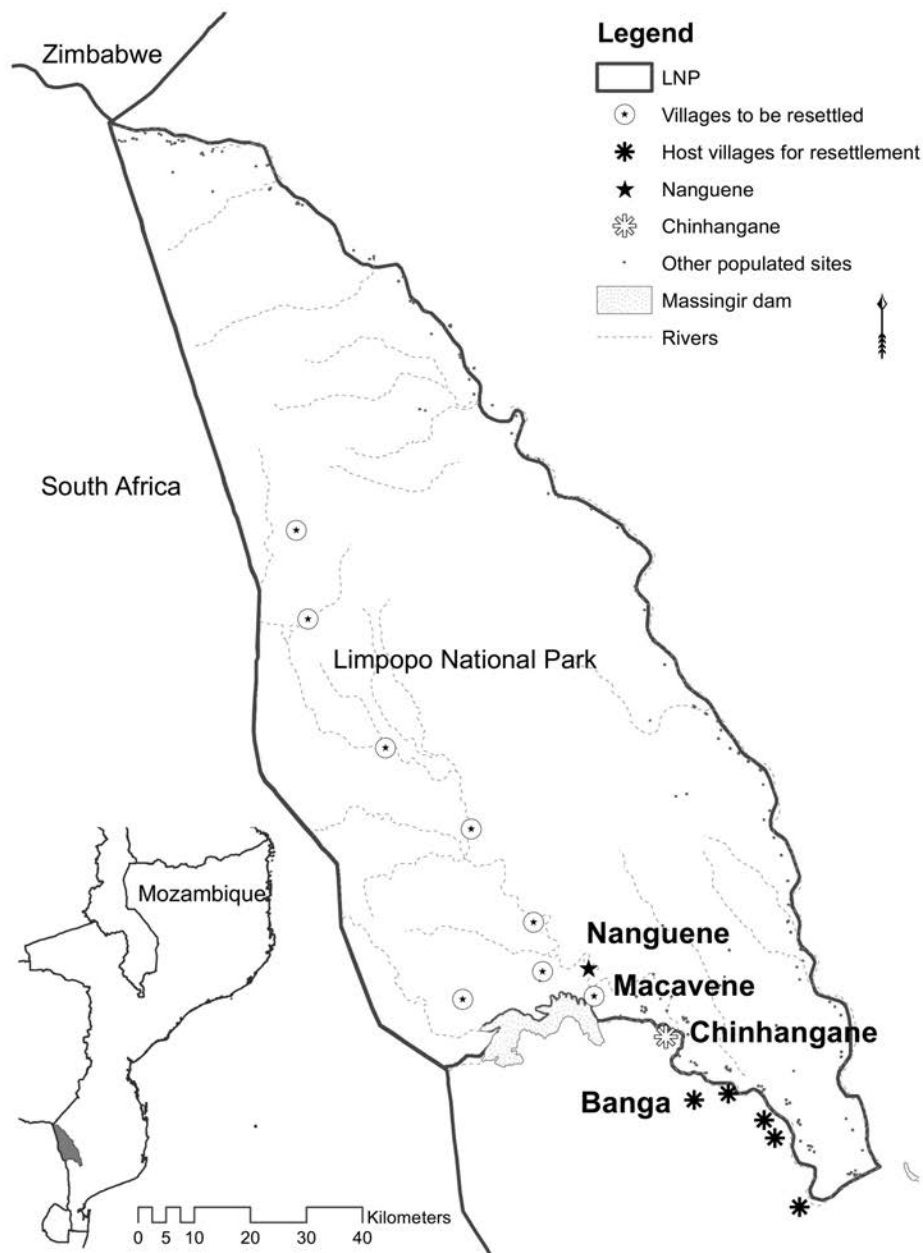


Figure 4.1. The Limpopo National Park, bordering on Zimbabwe and South Africa. The original location of the first village resettled (Nanguene) and its post-resettlement location next to the host village of Chinhangane are indicated. Eight other villages located along the Shingwedzi River in the center of the LNP are slated for resettlement. (Map credit: J Milgroom)

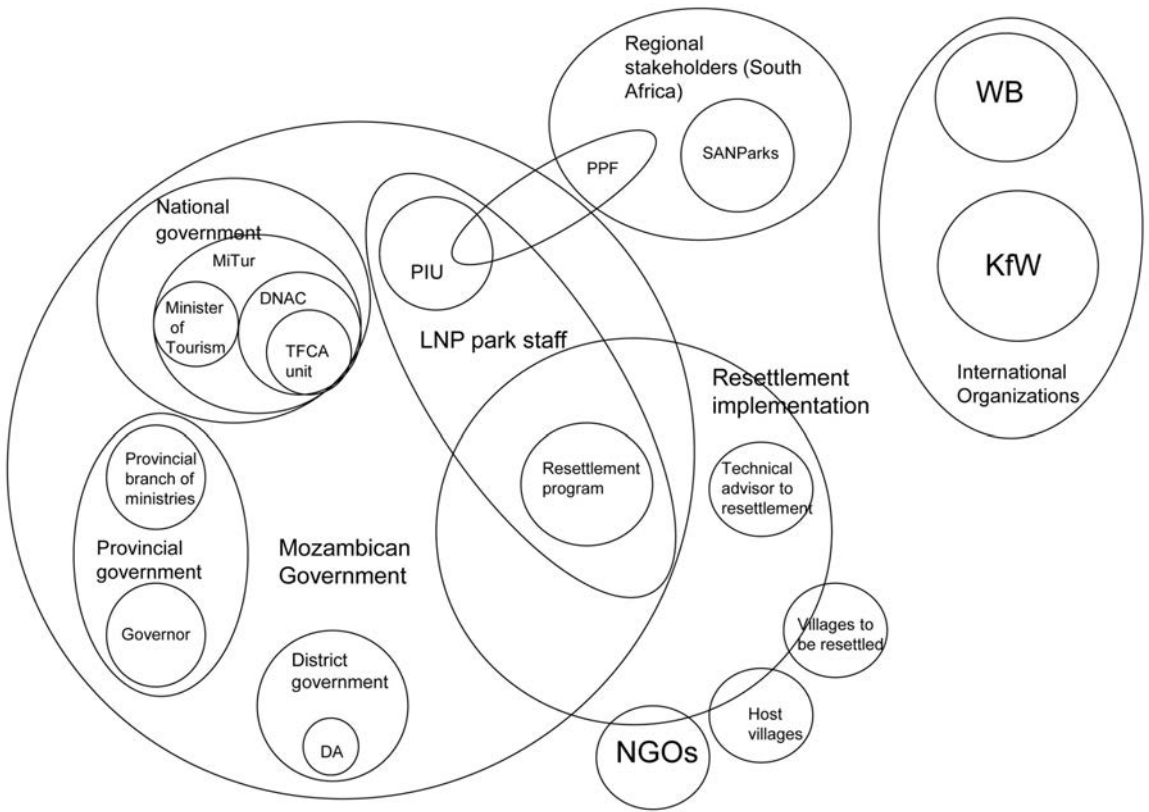


Figure 4.2. Main actors relevant to the LNP resettlement process. Abbreviations stand for: Ministry of Tourism (MiTur), National Directorate of Conservation Areas (DNAC), Transfrontier Conservation Area Unit (TFCA), District Administrator (DA), Project Implementation Unit (PIU), Peace Parks Foundation (PPF), South Africa National Parks (SANParks), World Bank (WB) and Kreditanstalt für die Wiederaufbau (KfW).

an important actor. Decentralization efforts in Mozambique have given an important role to both provincial and district governments. The villagers represented by their leaders, and the park officials who are employees of MiTur, were most closely involved in the day-to-day implementation process. We refer to 'leaders' and to 'MiTur' instead of using individual's names or further specifying groups within the Ministry because of the sensitivity of the information and nature of the argument.

Choosing a policy and initial interpretations

KfW's funding of the resettlement initiative was conditional on the adoption of WB OP 4.12. A KfW representative commented:

When we first heard about resettlement the government was ready to come in here on trucks and cart people away. We said well, in that case we will not fund resettlement. We knew resettlement would be difficult but we could not allow people to be taken away on trucks.⁴⁷

KfW did not itself have experience with resettlement and agreed to resettle people under the condition that internationally recognized standards were used to guide the process.⁴⁸

The first translation of WB OP 4.12 to the LNP case was done by external consultants in 2003. Their report became the reference point for resettlement planning in the LNP although only small excerpts were translated into Portuguese. Both consultants and LNP staff were frustrated that few of their colleagues involved in the resettlement were familiar with the contents of WB OP 4.12.⁴⁹ The fact that the policy was first interpreted by foreigners with little experience in the LNP, and that the policy document was read by only a few of those involved in the policy enactment process, opened up scope for interpretation of what the policy actually meant.

Following the consultants' suggestion a Consultative Committee on Resettlement (CCR) was established to discuss and decide resettlement issues (Huggins et al. 2003). The committee consisted of leaders from the villages to be resettled and the potential host villages, NGO representatives, park staff, and provincial and district politicians from various ministries. Beginning in December 2003 the issue of housing, including the type of house, the size, and details such as the doors and windows, became the centre of CCR discussions. The resettlement houses became an important symbol of progress and political prestige of the LNP project. In comparison, compensation issues such as land for cropping and grazing, were barely addressed. Negotiations over houses and reinterpretations of WB OP 4.12 over different phases of the enactment process form the core case material of this paper.

NEGOTIATING COMPENSATION

We present three phases of negotiation. We describe the main changes in policy interpretation in each phase and the factors contributing to the changes specifically for three groups, the village leaders, MiTur and KfW. Although we recognize that differences emerged within groups, we specifically call attention to this when it is relevant to the overall story.

47 KfW representative, Massingir, 17 April 2007

48 KfW representative, Maputo, 15 June 2008

49 LNP staff, Massingir, 5 August 2008 and Technical advisor, Massingir, 27 February 2008

Phase 1: Discovering participation

Phase 1 of the resettlement negotiations was a slow process stretching over four years (2003-2007). The first meeting to discuss the conditions of resettlement was held at a beach resort far from the LNP, in December 2003. The results of the consultancy described above were presented as the starting point for discussion including a presentation of WB OP 4.12's 12 principles of resettlement. Two notable principles are that resettled people are to be 'actively better off than before', and that 'genuine consultation and participation should take place' (Huggins et al. 2003: 8). The group agreed to add two new principles to the list, reflecting a certain degree of openness and commitment on the part of the government officials to adapt WB OP 4.12 to the local situation.

Four options for the compensation houses were presented. The consultants had recommended a brick house with a zinc roof, wooden doors and windows (Huggins et al. 2003). Village leaders, however, rejected this model saying: '...the houses are too small and go against the local culture. A couple cannot share walls with their children.'⁵⁰ No KfW representative was present at the meeting. Despite resistance from the village leaders, at the third CCR representatives of the provincial offices of the Ministries of Tourism, Agriculture and Rural Development, and Environmental Action jointly decided on the brick house model. One LNP official described the process of negotiation as follows:

The Germans follow the WB involuntary resettlement framework that stipulates that the houses should be slightly improved. We developed all sorts of different models of houses working together with NGOs—all with some small improvements such as zinc roofs, improved walls, etc. We presented these models at a CCR and immediately the provincial government representatives all agreed that that model of a house was not appropriate. They said that the houses had to be out of brick. The decision to not accept improved traditional houses was brought to the national government and the provincial government was supported in their movement.⁵¹

MiTur officials told KfW representatives that the houses must be made of brick because resettlement was to be a development initiative. A KfW representative explained: 'They said that we need to improve people's lives by building them cement houses.'⁵² Another KfW representative was told by the LNP park director that, 'this was the model that people preferred. They told us it was the chosen model based on deliberations with residents.'⁵³ Eager that the project be participatory, guided by the preferences of the residents, KfW approved the decision.

⁵⁰ Minutes from the second CCR 2004, page 9

⁵¹ LNP staff, Massingir, 5 August 2008

⁵² KfW representative, Massingir, 10 June 2007

⁵³ KfW representative, Massingir, 5 April 2008

When the design of the model houses was shown to villagers on paper they had difficulties imagining what the house would actually be like. KfW insisted that two model houses be built so that residents could see and comment on them before the remaining houses were built. While KfW was pressuring the park administrator to make the resettlement process more participatory, MiTur was pressuring him to make resettlement happen more quickly. The minister wanted the contract for the construction of all of the 144 houses to be signed at once. Personal financial opportunities resulting from the contract were widely suspected to be the reason behind his urgency.⁵⁴ The park administrator refused to sign and was forced to resign.

The perception that government officials were personally benefiting from the project funds was pervasive.⁵⁵ Residents distrusted the park staff, accusing them of taking the money intended for the villagers as time passed and no progress was being made on resettlement.⁵⁶ Some villagers blamed the LNP staff themselves for taking the money and others blamed the national government. An elderly woman remarked: 'I discovered at this meeting that the government eats through the park. I can no longer blame the park. It is the government that is covering our eyes.'⁵⁷

In a tense political climate, with no park director in place and a two-year delay on resettlement, there was intense pressure on the park staff to get authorisation from KfW for the construction of the rest of the houses in order to pacify MiTur. KfW first wanted to be sure that the process was progressing in a participatory way, particularly with respect to the model houses. It was arranged that village leaders and residents from close-by villages would visit the model houses and discuss their views at the fifth CCR meeting. 'Proving participation' of the village representatives was not as easy as some had hoped.

Phase 2: 'Proving' participation

It was a hot morning in March 2007, with the sun beating in the curtain-less, screen-less windows of the second story meeting hall of the colonial administration building in Massingir. The district administrator (DA) presided over the meeting, seated in her throne-like chair behind a desk covered with a FRELIMO red cloth. The rest of us were seated in wooden and plastic chairs in a U-shape configuration in front of her. While the governor of the province of Gaza generally attends the CCR meetings, he was not present. The provincial administrator from the Ministry of Tourism, however, was there,

⁵⁴ LNP staff, Massingir, 4 March 2007

⁵⁵ This paper does not accuse anyone of corruption, but describes the perceptions of it and the consequences of those perceptions for the policy process.

⁵⁶ Residents of Nanguene, Nanguene, 19 September 2007, 17 April 2008, 25 September 2008

⁵⁷ Nanguene resident, Nanguene, 23 May 2007

as well as the FRELIMO party representative and other members of the Masingir district government. Representatives of the villages destined for resettlement and some representatives from host villages were present, as well as the LNP staff.

The aim of the meeting was to agree on changes to be made in the design of the model houses. The leaders began to list their complaints: the locks were of poor quality, the house needed another door, another window, more ventilation, etc. but, most importantly, the houses were too small. The officials explained that it was impossible to make the houses larger because of budgetary constraints, that the model houses were larger than originally planned, but that the other changes that the leaders wanted would be made. The leaders continued to express their discontent about the size of the houses but also about the procedure: they did not want to agree to anything without consulting their villagers first. At lunchtime the DA decided that the meeting was over, although no agreement had been reached. The head of community affairs of the LNP summarized the meeting:

About the houses, thank you to everyone. The problems are the size, the windows, the outer walls, and the door locks. The answers: the houses cannot be bigger because they can be made bigger by each individual person. We will make the other changes. Are we in agreement?⁵⁸

It was agreed that he would write up the minutes of the meeting and that these would be presented after lunch. When the document was read after lunch, the leaders were asked to sign it, and the following conversation ensued (this is an excerpt from a longer debate):

DA MASSINGIR: Signing the paper is really just to say that what is written on the paper is what was said in the meeting.

VILLAGE LEADER A: Things need to be clear. We cannot go back to the community having signed, having agreed to small houses.

FRELIMO PARTY SECRETARY: If you don't sign that means that those small changes that were agreed to won't be made either. This is a commitment. What is written is the general consensus. If you do not sign, it is another problem for the park.

VILLAGE LEADER B: We are on a curve and the cars are about to crash. For the leaders inside the park there will be a collision if we sign something that is not clear. We have never had to sign any documents but this time we have to sign something that says the houses are fine. [...] We did not study, but where are the

⁵⁸ LNP staff, Massingir, 5th CCR 14 March 2007

crocodiles that eat the people? We know that there are crocodiles in here—I am becoming a child in the process—I am not understanding. I won't sign. I have never signed anything and today I am obliged to do so? I do not agree.

Earlier CCR meetings had created jealousy and distrust within the villages. Village leaders feared being blamed for 'giving in', or being accused of having accepted bribes. They refused to sign and requested that the a meeting be held in the villages with residents and not in the administration building only with leaders. It was agreed that the next day a meeting would be held in the village closest to the park headquarters, Macavene, the second of the villages slated for resettlement.

The meeting took place in the centre of the village. It was well attended; men sat in chairs and women on mats on the ground while LNP staff either stood, paced, or sat in chairs next to their cars. The resistance against signing the document proved to be even stronger than the previous day. LNP park staff pleaded with the residents to allow the leaders to sign the document:

LNP PARK STAFF: The minutes from the meeting that we had yesterday say what happened in the meeting. The population can say if the leaders can sign the paper or not. There is no pressure to sign but we have to have a testimony about that meeting to record what was spoken with the population. We need to know how many people were in the meeting, how many women, how many men, what was said. We need to show our bosses that we did have this meeting. I would like to have people sign this testimony and let the leaders sign.

[...]

RESIDENT: When you started, you talked about many things, but this signing papers is not what we talked about. [LNP staff 1] says that if the people accept the houses, they can sign, if not, not, but how can we sign if the park doesn't want to make the houses bigger? Why sign?

LNP PARK STAFF: The park doesn't have the money to make the houses bigger.

RESIDENT: We shouldn't sign the paper for free. No one will sign the paper.

[...]

RESIDENT: In the meeting the leaders said that they want two windows, two doors, and these things the park accepted. But about the problem of making the houses bigger—if the population and the park could agree to this we could sign. Those houses are models. If the population doesn't like those houses, the park will have to do what the people want. We are not arguing. The park should do this to get us to sign.

RESIDENT: There should be someone to translate what the people want.

The position that the residents of Nanguene took with respect to the houses was notably different before and after the CCR meeting. Before the meeting, after the visit to see the houses, most residents were elated about how nice the houses were and they wanted to be moved as soon as possible. Only after the meeting did they begin to say that they would not accept the houses until they were made bigger.

The park staff left with long faces to 'inform the bosses' of the results of the meeting. In a document written in English summarizing the process of deliberation about the model houses it was stated that there was a need for 'superior decision making to overcome this impasse...' The document described how the impasse was the result of leaders not fairly transmitting meeting decisions to their respective communities and it was noted that when 'the CCR puts together the willing and the opposing leaders, there is a negative influence on those who want to see the process advancing'.⁵⁹

In order to overcome the 'impasse', LNP staff planned meetings with the two villages involved in the pilot project, one at a time, to break the strength that the group of leaders had when together. They brought reinforcements with them: a World Bank representative and higher-level politicians. An LNP staff member explained: 'We needed to just draw the line somewhere or it [community resistance] will never stop.'⁶⁰ A villager described the meeting like this:

Everyone was refusing to leave. We were sad and upset and the white man said that the houses are very nice and that they are well made and he would like to have one for himself. He said they were going to release more animals here. When we understood that they were going to release more wild animals close to our village we saw that it was not worth it to stay here. We decided to accept because of fear that our children will get killed by animals.⁶¹

The white man, the WB representative, had told a story about a park in Cameroon. There people living in a newly established park had refused to move out. As the wildlife intensity increased, people from the village were killed. The story deeply impacted the residents of Nanguene and they signed the document. A similar meeting was held in Macavene, but in the absence of its leader. Some members of the village who did want to be resettled took advantage of this and signed the documents. While it was well known that the signatures attained were not those of the leader, they were collected and used anyway as proof of participation and popular acceptance of the model houses.

59 LNP's 2007 Report on the Consultation Process for Model Houses Approval, page 3.

60 Technical advisor, Massingir, 15 May 2007

61 Nanguene resident, Nanguene, 24 April 2007

Having attained the signatures that MiTur needed to prove to KfW that the process had been participatory (by means of which the villagers were deemed to have also formally accepted to be resettled although they were not told this), KfW granted authorisation and the construction of the rest of the houses for Nanguene began. Nanguene was finally resettled in November of 2008, after many more meetings, obstacles, and delays.

The complicated deliberations and power struggles that emerged because of donor-enforcement of the participatory principles of WB OP 4.12 caused MiTur and the provincial government to propose the use of another policy framework. The National Institute for Natural Disasters (INGC) resettles people from flooded areas almost every year. It was therefore suggested that the INGC model be applied to the LNP case. In the INGC model, residents are given materials to build their own houses while living in tents provided by the government.

Phase 3: No more participation

On August 15, 2008 the sixth CCR meeting was held, once more in the Massingir administration building. The Governor was present and took his seat on the central throne with the DA seated next to him. A representative from INGC and administrators from neighbouring districts joined them. The Governor introduced the reason for the CCR meeting:

GOVERNOR: Why did we invite INGC? We can change our way of constructing our houses to improve them.

VILLAGE LEADER A: Thank you for the experience. We only have to learn and see what is the difference if we find a person in the shade and a person out in the open sun.

GOVERNOR: This meeting is not meant to solve everything. It is only to study the difficulties we have living with animals. INGC is one way to hurry up with the construction of the houses and it would be good if we could all help construct our own houses.

DA CHICUALACUALA: Thank you INGC for sharing your experiences of construction. The school in Chinhangane was constructed by the people and the people gain self-esteem because of it. [...]

VILLAGE LEADER B: Thank you for [sharing] the experience. But the communities to be resettled were told that we would have houses built for us and then we would be taken to the resettlement area. If you say that the communities should construct their houses themselves, people will go to South Africa because even now they are leaving.

DA MASSINGIR: Three years have passed that we have been talking about resettlement and until now only 18 houses have been built. We should see what it is that we can do to finish with resettlement. So, we should talk with the population about the new INGC experience.

[...]

GOVERNOR: We can offer a tent to each family in their parcel. That person can make a corral, field and house while they are there. The park promises to give us water for that person to drink and make dip tanks for the cows and FRELIMO can help to mobilize the communities.

VILLAGE LEADER A: the case of the tents, I feel very inferior because some people who now sleep in cement houses would to go sleep in a tent? I don't see this.

VILLAGE LEADER C: Thank you Mr. Excellence and in relation to helping us solve the difficulties of our area but the community cannot agree. I think it would be better that the park and INGC went to the communities to make propaganda of the self- construction idea and the ideas of the tents because to say that we as leaders will manage to do so would be to lie (to tell people they should use tents).

INGC: In the case of tents, I will still speak to the bosses and negotiate with the administrator of the park.

[...]

GOVERNOR: We are getting to the end. We can ask for help from INGC in the idea of the construction of the houses. [...] The leaders are left with the job of diffusing information to the communities. We discussed about the tents and everyone here, we are all bosses. Bosses should know how to resolve problems and decide. You cannot go home and say that in the meeting 'they' decided this. You decided. Thank you for the patience. We have on our agendas that we should get tents because you accepted.

MiTur presented three main reasons for switching policy frameworks. They argued that participation and construction of the houses was taking too long and that in the meantime people were suffering from wild animals and the park project could not proceed. The second argument was that WB OP 4.12 was a foreign imposition. As one LNP staff member explained: '...Mozambique has experience with resettling people—we should adopt the INGC model because it is something that comes from here—a home-grown model.'⁶² Thirdly, it was said that if people constructed their own

62 LNP staff, Massingir, 5 August 2008, and MiTur official, Maputo May 2010

63 This reflects FRELIMO's official position about donor handouts such as food aid that was stopped when Guebuza came into office in 2004.

64 Massingir District Administrator, Massingir, 14 June 2010

houses, their ownership of the outcome would increase.⁶³ The DA said: 'People were consulted, but us Africans, we take much better care of something we made ourselves over something that we bought or was given to us.'⁶⁴

Village representatives felt that the government simply did not want to spend money on them. Later, after being resettled, while sitting in his new brick house, the leader of Nanguene explained:

The government did not want the park to give us anything at all. [...] Remember that meeting with the governor where he said that in order to resettle us faster we should just build sand bricks? He didn't want to see us in the conditions that we are in. He didn't want us to receive anything.⁶⁵

The 6th CCR meeting described above was followed up by a trip to the centre of the country by the members of the CCR to visit an INGC resettlement area. According to later accounts the leaders refused to accept the INGC arrangement for resettlement. The government insisted on the INGC model and this, in part, led to the resignation of the head of the resettlement committee. Following his resignation all but one person from the resettlement sub-unit of the LNP left the park. The second park director was fired and a third put in place with a mandate to resettle the villages as quickly as possible. To date, the INGC model has not been adopted and a third phase of funding for resettlement has been granted by KfW.

Elephants of democracy

One and half years after the beginning of the resettlement process an ex-park staff person reflected on the role of democracy in the way the process played out:

You see, the government here is used to being heard and paid attention to, when Frelimo talks everyone obeys. This is democracy but it is not really and the resettlement process taught leaders to demand their rights. We taught them that they have rights over the course of the process! You see it was 'induced participation' and anything induced has its reactions that sometimes we are not prepared for. Like when you induce birth of a pregnant woman. Sometimes suddenly the contractions are too strong and the woman and the baby cannot handle it. The situation becomes out of control and then the doctors decide that it is time to have a caesarean but by the time they manage to cut her open the baby has died. Therefore the matter becomes saving the life of the mother.⁶⁶

During and after the actual resettlement of people and their belongings the leader of Nanguene took a stand to defend the desires and rights of his village that he would

⁶⁵ Leader of Nanguene, Chinhangane, 28 March 2010

⁶⁶ LNP staff, Maputo, 27 May 2010

not have been likely to take before. He refused to allow the transportation of materials from the original village to the post-resettlement location until the payments of cash compensation had been made, despite the residents' desire to be resettled as quickly as possible. After resettlement the leader and the residents demanded irrigation plots from a WB and KfW evaluation mission. While irrigation plots had been discussed, they were not included in the final compensation package. However, having experienced the leverage that they could have in negotiations, the residents insisted and managed to get the monitoring mission to agree to provide irrigation infrastructure. The leader of Nanguene repeatedly remarked how he would not sign the final park documents until all remaining compensation promises had been fulfilled.⁶⁷ This behaviour on the part of the leader and residents represents a certain degree of empowerment resulting from the opening of spaces for participation in resettlement planning.

ANALYSIS: ENACTING PARTICIPATORY POLICY

Over seven years of negotiations about resettlement, spaces for participation were opened and closed in an on-going tug of war over the determination of meaning of policy concepts. The opening and closing of space can be interpreted as an expression of power over decision-making about resettlement conditions. The policy process itself also became a resource mobilized in other societal struggles. In this section we analyse how the actors shifted the meanings they attributed to policy concepts over the course of the negotiations.

Opening and closing of spaces for participation

WB OP 4.12 prescribed a new way of interacting between the government and the residents. It provided new resources in the form of the policy concepts, ideas and the intermittent presence of the donors. These resources were mobilized by the residents and led to a change in power relationships, demonstrating that they were not powerless victims (Beazley 2009). Many accounts of resettlement portray them as such; others highlight people's power to resist resettlement (Oliver-Smith 1991; Hall 1994). Neither quite manages to capture the complexities that the village leaders face when invited to the negotiation table to discuss their futures with government staff and project implementers.

The space for participation, defined as the possibility for residents to influence resettlement decisions, was opened and closed over the three phases of negotiation. As this space was opening and closing the residents were able to influence decision-making more or less (Figure 4.3a) as they struggled to determine meanings of key concepts

⁶⁷ Leader of Nanguene, Chinhangane 17 May 2010

(Figure 4.3b). The first phase was characterized initially by a fairly literal interpretation of WB OP 4.12. By following the guidelines MiTur opened up a space for interaction, discussion, consultation and transmission of information that would not have otherwise existed. Two extra principles were added to the resettlement framework. At this stage, for both MiTur and the residents, participation meant consultation; the decision-making moment was not participatory in so far as it was MiTur officials who determined that brick houses would be a symbol of development. The space for participation after this event was kept closed ('a' in Figure 3a) until KfW demanded that participation be proved in the second phase.

In the second phase of negotiations park staff were forced to open the space for participation at the CCR meeting and under pressure from the KfW. Participation came to mean procedure for MiTur, something that had to be carried out in order to attain the necessary authorisation from KfW. Simultaneously, for the resettling residents participation came to mean leverage because they saw that by refusing to sign the document they could bargain a better deal for themselves and push the limits of the space provided for participation. The physical location of the meeting was key here—the village leaders complained that they were at a disadvantage in the district capital and had requested that the meeting be held in one of the villages where other residents could be witnesses. The park staff, in response to the resistance they encountered in the villages and pressured by MiTur, reverted to coercion to get the leaders to sign the document, and effectively closed the space for participation ('b' in Figure 4.3a).

In the third phase MiTur attempted to replace WB OP 4.12 with a national model of resettlement and strategically reinterpreted participation to mean resident construction of their own houses. In other words, under the new national policy there would be no participation in decision-making but participation in the construction of the houses. Constructing one's house was presented as a way to increase resident's sense of ownership. At this point leaders refused to accept this option and began to speak about their rights to just compensation, thereby filling and creating more space for participation than was originally intended by MiTur (Figure 4.3). This juxtaposition of meanings led to a situation where the provincial governor attempted to gain control over the situation but was confronted with further resistance.

Here we can see that participation, however superficially carried out in practice, opened the door of policy interpretation to a wider range of actors to have more influence in actively shaping policy in practice. The challenges and opportunities that participatory

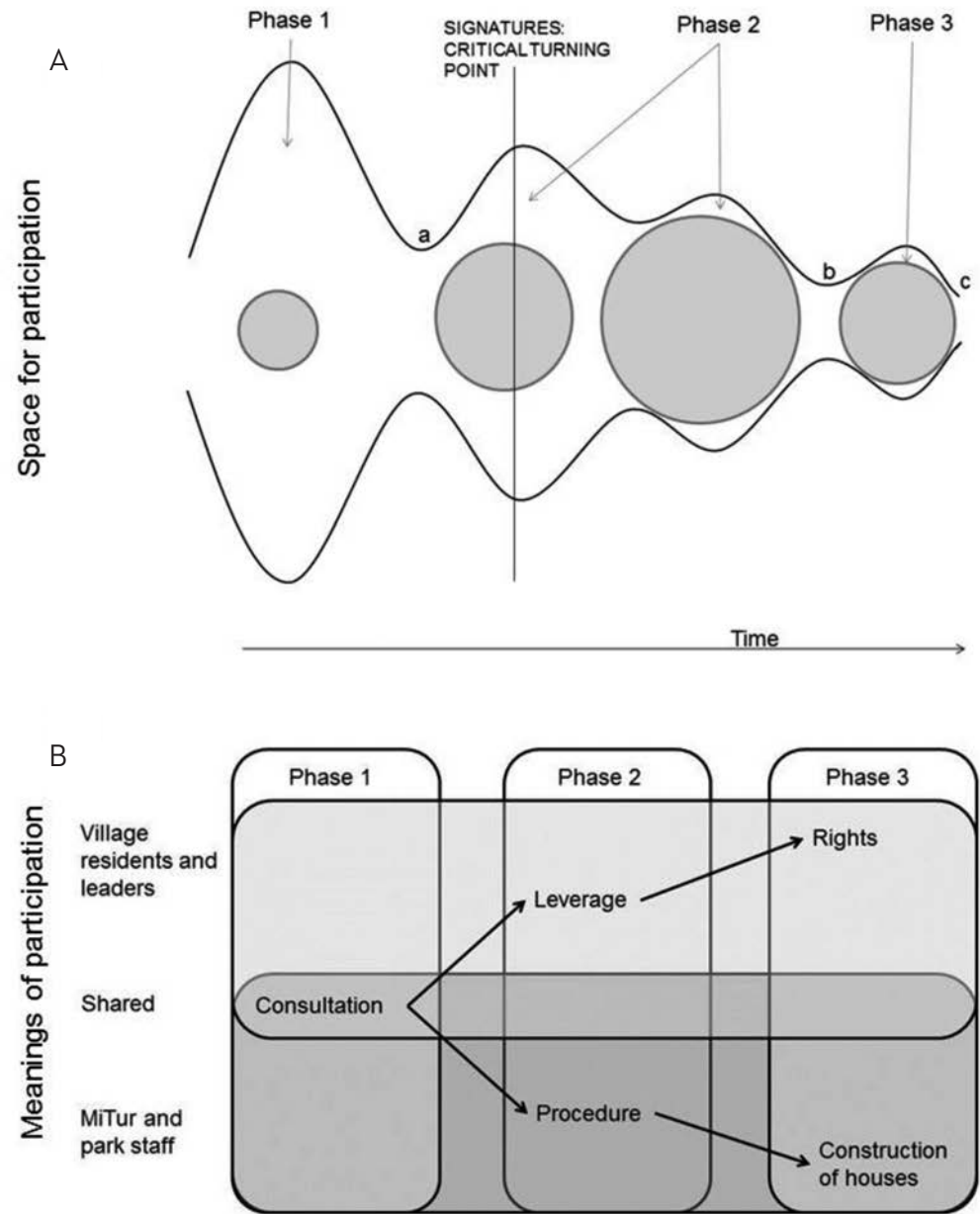


Figure 4.3. A) Spaces for participation open and close over the process of policy enactment, as represented by the outer lines. Residents' capacity to influence decisions within those spaces, as represented by the size of the inner circle, also changes over time. The first, second and third phases in negotiation over the houses are shown, while 'a' and 'b' and 'c' represent decision making moments associated with each phase respectively. B) The meanings attributed to 'participation' diverged over the three phases of negotiation about compensation houses. These shifts in meaning were tightly tied to changing modes of power, as well as to the opening and closing of space for participation.

rhetoric provides for complex policy problems such as resettlement are highlighted by this understanding. The participatory spaces created by the resettlement policy process were appropriated by resettling residents in ways that the government officials did not expect or know how to deal with. The major losses that resettlement was likely to bring for the residents of the park, the changing state-citizen relationship, and the insistence of the donors in making sure that the residents agreed to the conditions created a political tug of war. At its core was a conflict about power over who would determine what the futures of the resettled residents would look like.

Enacting participation

People do not always do things because they are driven by premeditated action or tangible interests (Hofmann 1995). Policy enactment is not bounded by project activities because factors external to the project become internalized in everyday life (Long and van der Ploeg 1989) and other societal struggles get played out within the context of the project. While on the surface it appears that the events described in this article were primarily a struggle over decisions about material compensation as prescribed by WB OP 4.12, we suggest that other societal struggles were as or even more important drivers of people's actions than the material content of the negotiations.

Responding to new-found political power

The attempt to gain leverage in decision-making was a constant struggle throughout the negotiations. In phase 2 residents continually referred to the houses as models to be discussed and changed according to their wishes, so as to not close down their possibility to leverage changes. When they refused to sign the core of the issue at hand was less the size of the houses but the emerging struggle over control of the process—to sign would be to relinquish their power over decision-making. This was evident in Nanguene residents' changed attitude towards the houses before and after the fifth CCR—they were not concerned about the size of the houses before the meeting but when they realized that they could hold out and gain leverage in decision-making by demanding larger houses, the size suddenly became important.

When relationships of power change, particularly in the context of state-citizen relationships, government officials in turn feel that their identity is threatened (Poteete and Ribot 2011). MiTur resented the resistance they encountered from the residents and the sudden loss of authority that came about through the donor-enforced policy principles of participation. In the third phase, when the INGC model of resettlement was presented, MiTur justified the drastic change in the meaning they attributed to the original brick compensation houses by evoking an image of a government providing help to its citizens who had become trapped in a park full of wild animals.

Changing state-citizen relationship

Social relationships embedded in a historical and cultural history influence the way actors enact policy. At least two major clashes rooted in historical context were evident in the way this case unfolded: one between the donors and the government and another between the government and the residents. Over the last two decades, as foreign aid contributions increasingly have formed a core part of the government's budget, corruption also has risen and disdain for donor-imposed conditions has heightened (Stasavage 1999; Hanlon 2004; Mosse 2005b). Mozambique is far from a representative democracy and relationships of power are characterized by hierarchical relations within government and between the state and its citizens (Sumich 2010). Donors, however, expect the state to act like a democracy that is accountable to its people.

The residents were in the position of a citizenry who had survived many years of instability and who were looking out for their chance to gain leverage in a changing political climate. The Mozambican government was used to obedience from its citizens and resented any resistance to their commands. The residents felt that they should not be forced to give over their homes, heritage and land to the elephants and tourists for the economic benefit of others without being compensated in the way that they demanded. While resistance was not uncommon during the eras of colonialism and socialism, effective forms of resistance entailed evasion of the regime, not confrontation (Isaacman et al. 1980; O'Laughlin 2002). This is the major difference between pre- and post-socialist forms of resistance, such as those described in this paper; while mild in nature, they still represent a direct confrontation with governmental organizations.

Rew et al. (2006) theorize resettlement policy in practice metaphorically; how the policy travels down the 'institutional landscape' from the policy makers 'on the hill' to the 'plateau', representing state or regional administration, and then to the 'swamp' where resettlement policy ultimately gets implemented. While they recognize that policy is not a linear process of implementation, they propose that 'the only foolproof mechanism for ensuring a higher level of success is to ensure that a common understanding /vision of aims is maintained and that successive levels of subordinates are held accountable to it' (Rew et al. 2006: 67). However, this proposal assumes that 1) a common understanding can be reached and 2) that common understanding would guide people's behaviour in practice. An interpretive perspective suggests that neither of these two assumptions are likely to hold throughout the enactment of the policy process.

Insights drawn from the case study presented in this paper points to the question of whether in fact the problem is not lack of political will, lack of skills, or opportunistic interpretation of policy for personal interest, so much as misconceived expectations of how the policy process works. Individuals interpret policy ideas and act on the basis of their own previous experience, perceptions, and knowledge (Coburn 2001; Spillane et al. 2002; Yanow and Schwartz-Shea 2006). By reconceptualising the policy process as enactment, a process that inevitably entails recontextualisation, interpretation and adaptation of the policy ideas, what would normally be considered 'context' becomes the focus of analysis. Identifying how contextual factors, such as the wider political economy, shape policy enactment in each policy process allow us to gain a better understanding of why resettlement policy is insufficient for avoiding impoverishment caused by resettlement.

CONCLUSIONS: IMPLICATIONS FOR RESETTLEMENT POLICY PRACTICE

There is no doubt that the use of a guiding policy framework such as WB OP 4.12 improves resettlement outcomes (de Wet 2006; Dear and McCool 2010). However, our analysis reveals that it is unlikely that more participation or better policy implementation *per se* can lead to mitigation of impoverishment risks of resettlement. Resettling residents should be able to influence decision-making about their conditions for post-resettlement, but participatory spaces, inextricably tied up in power relationships, inevitably become the forum for playing out other deeper societal struggles. Resettlement scholars proposing improvements in resettlement protocol theorize that participatory resettlement must not be politically stage-managed (Koenig 2009). But this is easier said than done.

Although participation led to a certain level of empowerment and some material benefits for residents of the first village resettled, it also led to a governmental backlash against participatory processes. Participation threatened status quo power relationships and led government officials to close participatory spaces and resent the imposition of participatory policy. Beazley (2009) describes a similar case in India where the combination of a more inclusive political culture and a more engaged civil society made it possible to negotiate compensation in a way that was favourable to resettling residents in the initial stages, although the effects were short-lived (Beazley 2011). When government officials begin to resent the imposition of participatory policy, the chances that resettled residents will receive just compensation, enough to avoid impoverishment risks are slim, especially in the absence of support of a third party (Hall 1994; Brand 2001; Koenig 2006), or an enabling political environment (Beazley 2009). Village leaders were empowered as a result of the participatory process, but ultimately their capacity to influence resettlement outcomes remained minimal.

Misago (2005) discusses the irrelevance of best practice for displacement in Africa and calls attention to the assumption that international standards can be effective where law and human rights are weakly enforced. The enforcement role of KfW was key in influencing the outcome of the Nanguene resettlement project, but did not prevent the deliberations from being ultimately resolved with coercion. When deliberations are driven as much by underlying power struggles, as by the compensation issues themselves, the external enforcer is left in a disadvantaged position lacking legitimacy or political will to intervene (Ferguson 1994; Mosse 2005a; Li 2007). Relying on external enforcement as a way to be sure resettlement is being carried out in a just way flags this danger –the masking of coercion and manipulation by nominal compliance with procedures. Resettlement is a case where donor accountability to local processes becomes more important than in the average development project because people's futures are at stake (de Wet 2009). Our findings suggest that joining in with the process of active, context-specific policy enactment in practice, as opposed to supporting more or different policy frameworks, may be the best way of being accountable. An elderly woman from Nanguene said, 'They brought elephants from other places to make us leave here because we didn't embrace their ideas.'⁶⁸ As eloquently expressed in this quote, a policy concept is no match for a real elephant.

68 Leader of Nanguene, Chinhangane 17 May 2010



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**Courting the rain:
Rethinking seasonality and adaptation to recurrent
drought in semi-arid southern Africa**

ABSTRACT

Increasingly erratic rainfall and unreliable cropping seasons in southern Africa, combined with high food prices, heighten vulnerability of rural people to food insecurity. To understand what actions are needed to expand adaptive capacity to climate change and its consequences for food security, it is useful to learn from existing agricultural practices in semi-arid areas that exploit positive opportunities of rainfall variability. To determine how residents attain food self-sufficiency based on rain-fed maize farming in a semi-arid region that receives an average annual precipitation of 400 mm, we carried out a detailed, interdisciplinary study of the agricultural system in Massingir, Mozambique from 2006 to 2010. We found that people produced enough maize, when rainfall conditions were favorable, to sustain the food needs of a household for two to three years, buffering the negative effects of subsequent poor cropping seasons and avoiding seasonal hunger periods. To maximize production people employed a variety of practices including: planting after every rainfall event throughout the rainy season, up to six times in one season, on as large an area as possible, as much as 18 ha per household, and employing labor/oxen exchange arrangements. We explored the role of these practices as key factors that determined total food production and variability among households. Although 35% of planting events were successful, total seed sown represented only 8.5% of harvest over 15 years. Labor/oxen exchange arrangements allowed disadvantaged households to produce twice as much as without collaboration. Recent invasion of the large grain borer (*Prostephanus truncatus*), a devastating post-harvest storage insect pest, represents a major new threat to the sustainability of the agricultural system and to food security that could worsen with climate change. Our results suggest that policies aimed at reducing vulnerability to climate change could be improved through a deeper understanding of existing practices. They could encourage food self-sufficiency as a viable option for certain regions, and look beyond seasonal agricultural production by considering the entire local food system.

Keywords: adaptive cropping practices, semi-arid, climate change, maize, food security, post-harvest storage pests

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INTRODUCTION

Sub-Saharan Africa is expected to be one of the regions of the world most severely affected by climate change (Hahn et al. 2009; Kotir 2011). Climate change forecasts for southern Africa suggest that dry areas will become even drier and rainfall more erratic (Lobell et al. 2008). Most studies paint a dismal picture for food production in semi-arid environments, especially for maize (Parry et al. 1999; Jones and Thornton 2003; Lobell et al. 2008). Maize is the staple crop in the region, despite its relatively high and regular water requirement, and is increasingly replacing sorghum and millet that are better adapted to the conditions of southern Africa. Increased variability of rainfall will not only decrease overall food production, but is likely to exacerbate negative effects of seasonal patterns of food-insecurity (Ahmed et al. 2011). Much of southern Africa already suffers from food scarcity between the end of the food stocks from the previous year's harvest and the next harvest (Handa and Mlay 2006; Devereux 2009). The pattern of seasonal hunger periods, known as 'seasonality', has been recognized as one of the major determinants of poverty because it limits choices about education and work, forces the sale of assets to buy food, and has severe consequences for health and nutrition (Devereux 2009; Vaitla et al. 2009). Hunger periods tend to coincide with peaks in food prices, and with high prevalence of diseases such as malaria and diarrhoea in the rainy season before harvest (Chambers et al. 1981). The combination of the recent global food crisis and effects of climate change on agricultural production makes understanding the dynamics of seasonality, and how food production can be improved, doubly important (Swan et al. 2010).

Studies to assess potential impacts of climate change tend to be carried out on a global or regional scale and focus on changes in agricultural production based on risk of drought and changes in the length of the growing period. Such studies often assume generalized cropping practices, such as a single planting date per season, a fixed area for production per household, and do not consider the effects of climate change on post-harvest grain storage. Scaling down from national or regional-scale studies is complex and creates challenges for assessing possible future scenarios and designing policy interventions (Hahn et al. 2009; Thornton et al. 2009). Studies based on actual cropping practices, that look beyond production and that account for heterogeneity between households in terms of yield and households' responses to climate variation, and can lead to different conclusions about food security (Thornton et al. 2010; Moore et al. 2011).

People constantly adapt to environmental and social changes (Barbier et al. 2009; Aase et al. 2010). Expanding adaptive capacity is key to reducing vulnerability to the negative effects of climate variability (Smit and Wandel 2006; Engle 2011). However, policy

makers and researchers alike struggle to ground the concept of expanding adaptive capacity in actual practices and potential actions (Berrang-Ford et al. 2011). A plethora of practices have been documented across the world that are employed to mitigate negative effects of an environmental or political change (Jarvis et al. 2011). By contrast, few studies document cases of people exploiting positive opportunities (Cooper et al. 2008; Berrang-Ford et al. 2011). Adaptive capacity and adaptive practices are context-specific and best understood through in-depth studies of existing practices (Slegers 2008). The area of the world with arid and semi-arid conditions is expected to increase significantly (Fischer et al. 2005). By understanding existing agricultural systems in semi-arid areas, and how they respond to their natural and social environments, insights from farmers' current practices can shed light on the complex challenge of food production in the face of increasing rainfall variability (Mortimore and Adams 2001; Osbahr et al. 2008). Interdisciplinary studies at household and village scale are therefore needed to gain a realistic vision of adaptive capacity and of interventions that are likely to be effective (Thornton et al. 2009; Thornton et al. 2010).

The case study presented in this paper provides an example of an agricultural system that exploits positive opportunities of climate variability. The Massingir district in Southern Mozambique, our study site, was deemed unsuitable for cropping due to low and erratic rainfall and frequent drought (Kassam et al. 1982; Reddy 1986; Westerink 1995), yet we describe how people achieve food self-sufficiency over multiple years after sporadic favorable rainfall events through a mixed crop-livestock farming system based on maize production. This interdisciplinary study brings together and explains the agronomic and socio-economic components of this agricultural system to understand how people manage to attain food self-sufficiency in this marginal environment. Our specific objectives were to: 1) understand the contribution of maize production and livestock to food security, 2) determine which farming practices were key to achieving food self-sufficiency and maximizing maize production, 3) explain variability in maize production among households, and 4) explore the role of post-harvest storage of maize in determining the household food supply and food security.

METHODS

We carried out this study in a series of steps described in detail below. We first documented livelihood activities and cropping practices, including patterns of household food self-sufficiency. To understand how much maize households were able to produce from a favourable rainfall event, we quantified maize production, based on recall data from interviews, over 12 years. Then, we simulated harvest success/failure and relative yield for each planting event over 15 years using daily rainfall data, taking local cropping practices and heterogeneity among households into account. We investigated the

specific characteristics of the local maize, selection practices and local preferences to understand the role of the landrace itself in food production under marginal conditions. Finally we examined post-harvest storage conditions.

The study area

The study was carried out in the district of Massingir, Gaza Province in southern Mozambique (coordinates of the district capital: 23° 55' S, 32° 09' E). We collected data in six villages between 2006 and 2010: Massingir Velho, Macavene, Zulo, Manhica, Nanguene and Chinhangane. Households were defined as all people who share the same granary on a regular basis.

The rains fall mainly between November and March with a long-term average of 399 mm per year (INGC et al. 2003), but large variability between years (200–900 mm) (Rainfall data, IIAM 1986–2005 and Ara-Sul 1995–2010). Temperatures range between an average minimum of 11° C in the cold and dry season to an average maximum of 34° C in the hot and wet season with average daily temperatures that range from 19 and 27° C, respectively. Soils are mainly eutric fluvisols and mollic fluvisols along the rivers, and haplic luvisols and arenosols outside the river valleys (INIA/DTA 1994).

Cropping patterns and food self-sufficiency

To understand the contribution of maize-cropping practices and livestock to food security, we interviewed members of 141 households in a total of six villages between 2007 and 2009. Interview topics included: family demography, sources of income, responses to lack of food, number of livestock, source of oxen for ploughing, planting patterns in recent years, yield (measured in local units), number and location of fields, access to land, seed security, and maize consumption rates. Data on livestock-keeping and sales was complemented by data in two other neighbouring villages (provided by W. Leonardo). We observed and documented cropping practices in the village of Nanguene over a four-year period from October 2006 to June 2010 including: where and when crops were planted, source of the seed, animal traction, labour, planting density and intercropping, weeding, crop protection, and production recorded in local units. We asked nine children between 8 and 12 years of age to draw all the food items they ate in the rainy season, and in the dry season.

Seven households from Nanguene constructed food self-sufficiency calendars specifying sources of food from 1999 to 2010. Household heads indicated when the household was food self-sufficient, eating from their own harvest, and when food was obtained from other sources. We validated these calendars by comparing with our own observations from 2006 to 2010, rainfall records of all years and with independent recollections of

other household members. Pictorial representations of the calendars were used to improve accuracy in three iterations of interviews and calendar revisions with each household head.

Maize production

Household maize yields over 12 years

To quantify patterns of household maize production, we constructed a time series of yields for each of 22 households (HH) from 1999 to 2010. We used yield figures attained through the food self-sufficiency calendar exercise with seven households in Nanguene and interviewed 15 households from Chinhangane using similar methods. We calculated yield (kg/HH) from recall figures based on the local units of bag, sleigh (*xilei* in shangaan), cart and granary. A sleigh or *xilei* is a cart that is dragged behind cattle; because of the sandy soils of the area, the cart does not have wheels, but two wooden rails, like a sled. Calculations to convert local units to kg were based on interviews and corroborated by two independent sources (Leonardo 2007; Trabalho de Inquerito Agrícola 2008). One standard '50-kg' bag of ears of maize, including husks, weighed 20 kg; six bags fit in a sleigh, and four sleigh loads fit in a cart. The number of cartloads that fit in a granary varied between 6 and 31 depending on the size of the granary; therefore we measured the size of the granary for each household. When the size of an individual granary could not be measured, we used the average size for the village. To calibrate conversions of recall harvest to yield in kg/ha, we measured yield in 4 m x 4 m plots in maize fields in the village of Chinhangane between March and May of 2009 ($n=24$) and in April of 2010 ($n=5$), a year in which very few farmers harvested any grain.

Using daily rainfall data to estimate maize production

To explain the trends in the recall exercise (2.3.1), we simulated harvest success/failure and relative yield based on daily rainfall records and crop water requirements. Through this exercise we explored how local cropping practices contributed to maximizing yield. Daily rainfall and temperature data over 15 years (1995-2010) from the ARA-SUL station in Massingir (23° 53' S, 32° 09' E) were used as input; Nanguene and Chinhangane are 14 and 12 km from Massingir, respectively. Decision rules for planting, based on our field observations and interviews, were a function of rainfall, as follows: the first planting event occurred when at least 20 mm of rain fell over five days; subsequent planting events started when more than 10 mm of rain fell over five days. The number of days spent planting per planting event was determined by the number of consecutive days where more than 10 mm of rain fell over the previous five days. The maximum number of consecutive dry days was calculated for each period in the growing cycle for each planting event using INSTAT (Stern et al. 2006). Crop specific evapotranspiration values,

or crop coefficients (K_c) were adapted from Allen et al. (1998) for a short cycle variety of maize (100 days to maturity). Simulations were based on the following additional assumptions: The period of emergence and establishment (INIT) was 0-20 days after seeding ($K_c = 0.4$), the period of vegetative growth (DEV) was 21-45 days after seeding ($K_c = 0.4$ to 1.1, linear interpolation), the period of tasseling, flowering and grain filling (MID) was from 46-75 days after seeding ($K_c = 1.1$) and the period of grain filling and drying (LATE) was from 76-100 days after seeding ($K_c = 1.1-0.55$ linear interpolation). A binary logistic regression was performed based on observations of harvest success/failure of each planting event from the seasons 2005-2006 to 2009-2010, as a function of rainfall and maximum consecutive dry days in each growing phase. This model was used to predict harvest success/failure for the remaining nine seasons, from 1995-1996 to 2004- 2005.

The crop water satisfaction index (Frère and Popov 1979) for each planting event was calculated using INSTAT (Stern et al. 2006) to serve as a proxy for % attainable yield. Soil water holding capacity was assumed to be 100 mm, derived from the soil texture data for an average soil (predominantly loamy sand to silty clay soils) at a rooting depth of 1 m (Allen et al. 1998). For each successful cropping event, relative yield (% of attainable yield) was calculated based on the crop water satisfaction index. Attainable yield was assumed to be 1.8 t/ha, the highest yield of the local maize measured under good conditions (also found by Leonardo 2007).

We estimated the total area planted per household in each year as a function of the number of days suitable for planting (see above), percent of planting days spent planting, number of teams of oxen available and the area planted per team of oxen per day. We assumed six work days per week because most people do not work on Sundays. Labour exchange arrangements, in which labour is exchanged for use of oxen to plough fields, affect the total area of land that can be ploughed by a household each year. Members of a household that exchanged labour to access oxen could not spend all potential work days planting their own fields because they would be working for someone else. Conversely, a household could not use their team of oxen to plant their own land on all potential planting days if the oxen were being used to plant others' fields in exchange for labour. The number of oxen per household was determined by interviews and observation. We assumed the area planted per day was 0.22 ha, based on the assumption that 0.05 ha were ploughed and sown per hour with one team of oxen (based on field measurements), and an average of 4 hr ploughed per day. Therefore:

$$\text{Total area planted (ha/HH)} = \text{no. of planting days} \times \text{no. of teams of oxen /HH} \\ \times \% \text{ of days worked/100} \times \text{area (ha) planted /day/team of oxen}$$

When this estimated area exceeded the total area of fields available to a household, e.g., because of many favourable planting days, the total area of the household fields (determined independently) was used. Total production was calculated as the estimated relative yield (% water satisfaction) per ha for each successful cropping event x total area planted in each successful cropping event. The total amount of seed sown was calculated from the total area planted (successful and not successful planting events) x 25 kg/ha.

To quantify the contribution of labour exchange practices to maize production, we estimated how much could be produced by hand hoeing by households that had no oxen. Area planted per day per person was estimated to be 0.016 ha (Heney 2009). The same calculation was made as described above, replacing 'team of oxen' with 'person' and all days were worked by all labouring people (no discount for labour exchange).

Maize characteristics and people's preferences

To study the characteristics of and preferences for the local maize we held focus group discussions in September 2007, in each of eight villages, with elderly women identified by the leader of each village as those most knowledgeable about agriculture. Groups of 5-16 women discussed and ranked by order of importance within each topic: 1) the uses, 2) preferred characteristics and 3) the pests and problems of maize.

In addition to focus group discussion, we collected maize ears between 2007 and 2009 ($n=120$), characterized them and planted out a sample to characterize the morphology of the plant (IPGRI 2000). With ears that represented the range of morphological diversity, we conducted individual interviews in two villages with elderly women ($n=10$) knowledgeable about seed, to explore seed selection criteria, storage practices, distinction between landraces, and preferences for variety characteristics. Women were asked to make groups of similar ears and define the rationale for each group, its name and general characteristics. Then they were asked to identify three groups they would discard if they had to and three groups that they would keep if they could only keep three. Rationales were discussed with respect to selection criteria and storage practices.

Post-harvest conditions

In May of 2010 all the granaries in the village of Chinhangane that still contained maize 9 to 12 months after the last harvest ($n=9$) were sampled to assess post-harvest damage. Each granary was evaluated for the type of roof, and general condition. Between 19 and 22 ears from the center of the maize left in each granary were evaluated. The percent kernels damaged, dominant color of the kernels, cob and the type of kernel was recorded for each ear.

RESULTS

Multiple-year cycles of food self-sufficiency

Patterns of food self-sufficiency over the last 12 years in Massingir were characterized by years of abundant production which provided sufficient food to bridge subsequent years when crops failed (Figure 5.1). A good harvest is attained approximately one year out of every five. Among the seven households that reconstructed 12-year calendars, the overall patterns of food self-sufficiency were similar, despite the differences in resource-endowment among households with respect to assets: head of cattle, household labour and area of land available for planting (Figure 5.1). Some households in Massingir were self-sufficient for food for 1-3 years after a good rainfall year and an abundant harvest, often reinforced by subsequent smaller harvests. This period was followed by 1-2 years when the primary source of their household food was purchased or gifts. During consecutive years with drought, households produced small amounts of maize on residual water during the dry season (Figure 5.1). Food obtained through the World Food Program's 'Food for Work' was cited as an important source of food in 2002-2003, but since 2005 the role of food aid in this region has been minimal.

Maize production per person over this time period (1999-2010) calculated from household recall data (n=22) (Figure 5.2) reflects the patterns of food-self-sufficiency reported by the households in Figure 5.1. Based on actual consumption rates of maize meal per person derived from interviews, we used a conversion factor of 1.51 kg grain for one kg of ground maize meal (Trabalho de Inquerito Agrícola 2008) to calculate the grain equivalents of required maize per person per year. Mean per capita consumption was 0.46 kg per day, 168 kg per year of maize meal, or 253 kg per person per year of grain. We therefore determined 250 kg of dry grain to be the baseline figure for annual maize requirement per person, a figure also used in previous studies on food security in southern Africa (Eilerts and Vhurumuku 1997; Cumming 2005). In the season from 1999-2000, severe floods led to a median production of 958 kg per person. In Nanguene, the season of 2005-2006 had a median production of 543 kg per person. In these two years, some households produced as much as 3.4 tons per person and most households managed to produce enough to eat for at least two years; these were considered excellent years. In three of the 12 years (2000-2001, 2003-2004 and 2008-2009), most households produced enough grain to feed the household for at least for one year and were considered good years. Small harvests in subsequent years that were considered bad years (2004-2005 and 2007-2008) helped tide some households over until the next harvest. In two years, none of the households harvested any grain (2001-2002, and 2009-2010), and even in bad years where some harvest was reported, (2002-2003, 2004-2005, 2006-2007, 2007-2008), more than half the households (20, 17, 17 and 14 out of 22 households, respectively) did not produce anything. Maize is

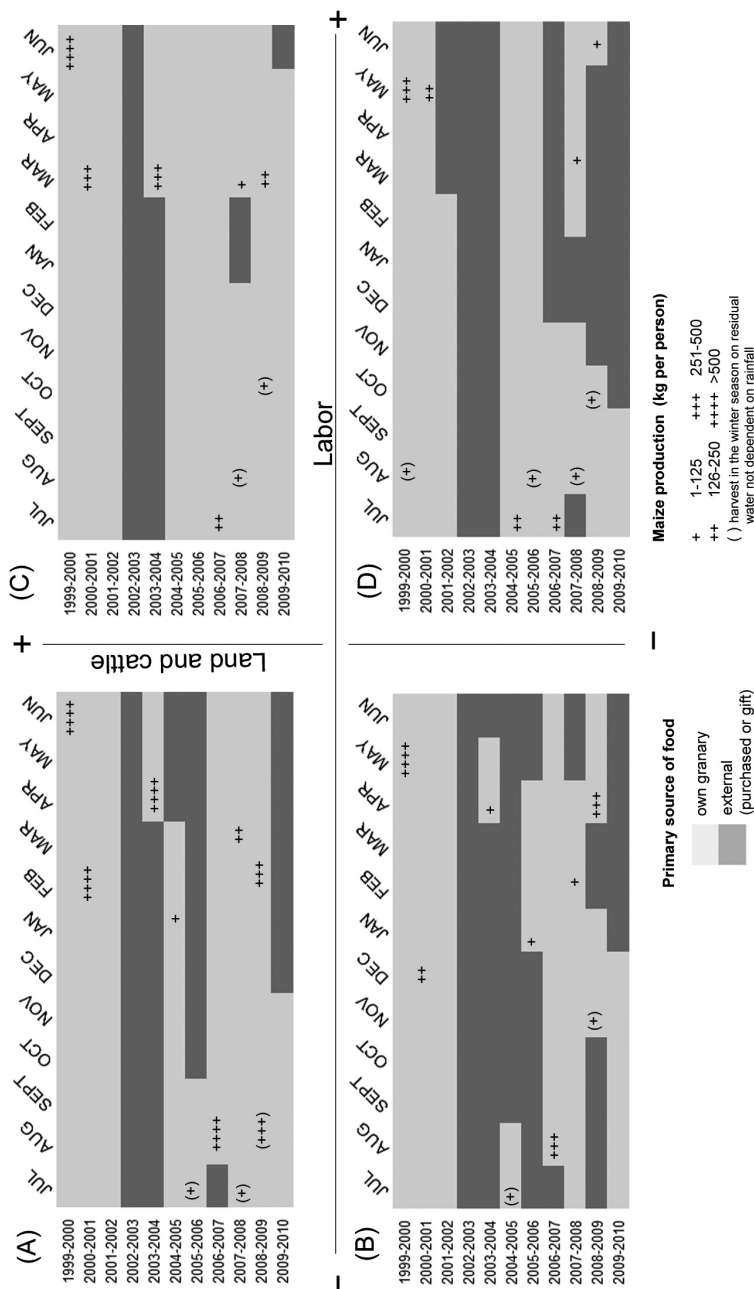


Figure 5.1. Patterns of food self-sufficiency in Massingir, Mozambique from 1999 to 2010, illustrating when households were primarily eating from their own maize production and when they were eating from external sources. Each quadrant is an example of a single household representing households with different combinations of labor, cattle and available land based on detailed interviews as described in the text. (A) Household with two working-aged members, 15 head of cattle and 18 ha of fields. (B) Household with five working-aged members, no cattle and four ha. (C) Household with six working-aged members, 14 head of cattle and 12 ha. (D) Household with two working-aged members, two head of cattle, and five ha. Symbols represent time of reported harvest. + is any harvest from 0 to 125 kg per person (6 months of food), ++ = 126 to 250 kg per person (1 year of food), +++ = 251-500 kg per person (two years of food) and ++++ = > 500 kg per person (more than two years of food). Dark grey bars represent time when the household was eating primarily from an external source of food, and light grey bars represent when the household was eating from its own granary.

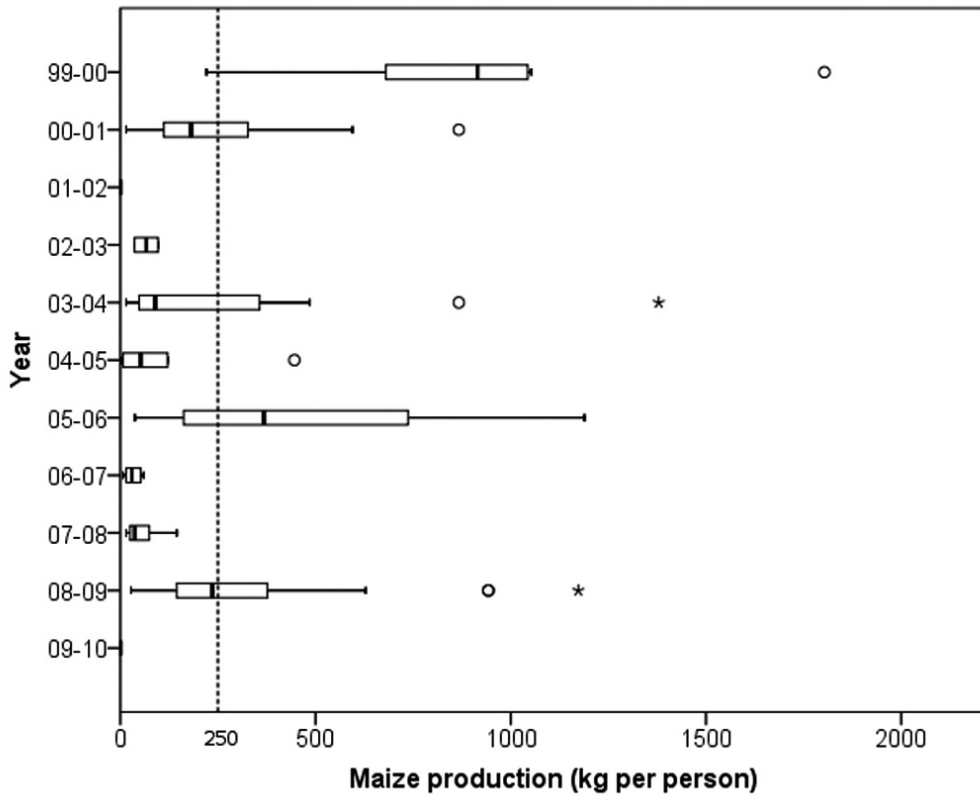


Figure 5.2. Time series of household maize production expressed as median kg per person in 22 households in Massingir, Mozambique 1999-2010. Households that reported no harvest in a certain year were not included for that year, and four points over between 3000 and 4000 kg per person, (two in 99-00, one in 00-01 and one in 05-06) are not shown due to small family size that resulted in large per person estimates. The dotted line at 250 kg represents yearly consumption requirement in grain equivalents for one person based on actual consumption rates.

intercropped with other crops, mainly pumpkin, watermelon, cowpea, sweet potato and groundnut in descending order of importance, but produce from these crops did not last until the dry season. Children identified a total of 40 items that they eat in the rainy season, and only five in the dry season.

Focus group discussions revealed that maize was only sold when there was a large surplus such as the 1999-2000 season. Households with access to cash tended to purchase food before stored grain ran out to make the household stock last as long as possible. When households purchased food, 32 out of 141 (23%) did so with existing money as their first response to lack of stored grain (Table 5.1). Most households engaged in multiple activities when in need of food or money and many of the 'sources of income' overlapped with 'response to lack of food'. Sale of livestock is a prime example. Major sources of income included selling livestock, labour migration and trans-border trade, sale of goods or paid labour (Table 1). Livestock numbers varied considerably among households (Figure 5.3A). Of the 141 households surveyed, 79 (56%) reported the sale of livestock as a source of income; however, between 2006 and 2008, years of very little harvest, many households did not sell any cattle or goats. Most of those who did sold only one animal (Figure 5.3B).

Courting the rain

Increasing chances of production: risk spreading and risk taking

Residents of the Massingir region used many practices to maximize their maize harvest in the face of unpredictable rainfall, some of which were employed at an individual household level, and some of which involved social arrangements and were employed collaboratively (Table 5.2). Planting as much land area as possible each season was the key practice (median 1.2 ha per person, with a maximum of 6 ha per person). Spatial and temporal staggering of planting are two practices that are used to increase further chances of production. Interviews indicated that households have between 2 and 12 fields, distributed across up to six different cropping areas. People commonly plant on portions of multiple fields before planting the entirety of any single field. Temporal staggering of planting entails sowing every time it rains, for as many days as the soil is moist enough for the seed to germinate. This increases the chances of receiving adequate rainfall in quantity and distribution during a growing cycle (Figure 5.4). In 2009-2010 we observed six separate planting events, including one in April, the beginning of the dry season. Estimates based on daily rainfall indicate that people plant up to eight times in a season. Each planting event lasted between four and 14 days.

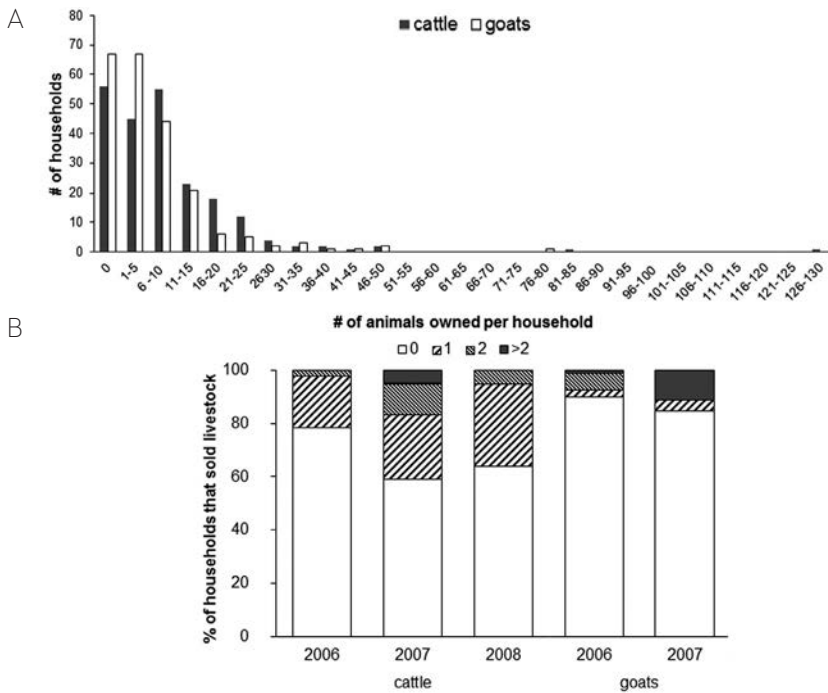


Figure 5.3. Livestock holding (A) and sales (B) among households in Massingir, Mozambique from 2006 to 2008. A. Livestock holdings in 228 households in 2007-2008. B. Proportion of households that sold 0, 1, 2, or >2 cattle and goats in 2006 ($n=80$), 2007 ($n=55$) and for cattle only in 2008 ($n=16$).

Table 5.1. Sources of income, and first and second responses to lack of food in Massingir, Mozambique, expressed as number of households that mentioned each category and the percentage in brackets. Each household mentioned between one and four sources of income ($n = 141$).

ACTIVITY	Sources of income (%)	First response to lack of food (%)	Second response to lack of food (%)
Sell goat or cow	79 (56)	39 (28)	23 (16)
Labor migration and trans-border trade	46 (33)	-	-
Sell agricultural product	39 (28)	4 (3)	7 (5)
Informal labor	33 (23)	17 (12)	14 (10)
Charcoal production/sales	28 (20)	6 (4)	0 (0)
Collect or make things to sell	27 (19)	5 (4)	5 (4)
Sell chickens	16 (11)	5 (4)	4 (3)
Small business	18 (10)	-	1 (1)
Salaried job, Moz	11 (8)	-	-
Temporary job, Moz	8 (6)	-	-
Fishing	7 (5)	2 (1)	0 (0)
Buy food with existing money	-	32 (23)	4 (3)
Ask family for food or money	-	8 (7)	8 (9)
Ask for a loan	-	8 (6)	6 (4)
Plant again	-	4 (3)	5 (4)
Wild fruits	-	3 (2)	8 (6)
Nothing mentioned	4 (3)	7 (5)	56 (40)
Total	316 (221)	141 (100)	141 (100)

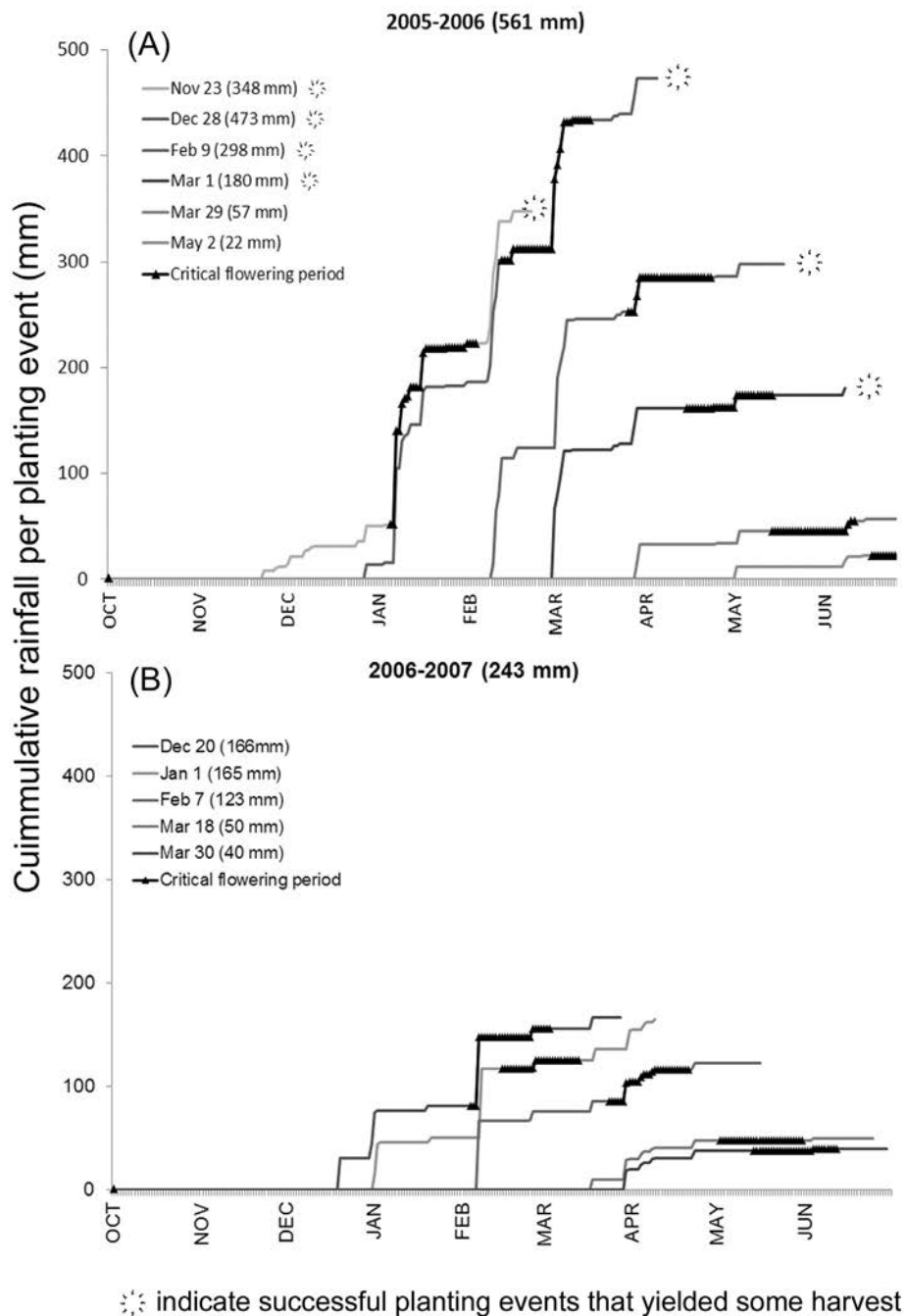


Figure 5.4. Cumulative rainfall for each planting event, highlighting the 30-day critical period of flowering for each planting event. Four rainy seasons are presented: A) 2005-2006, (B) 2006-2007, (C) 2007-2008 and (D) 2008-2009 in Massingir, Mozambique. The dotted circles indicate rainfall events with some harvest.

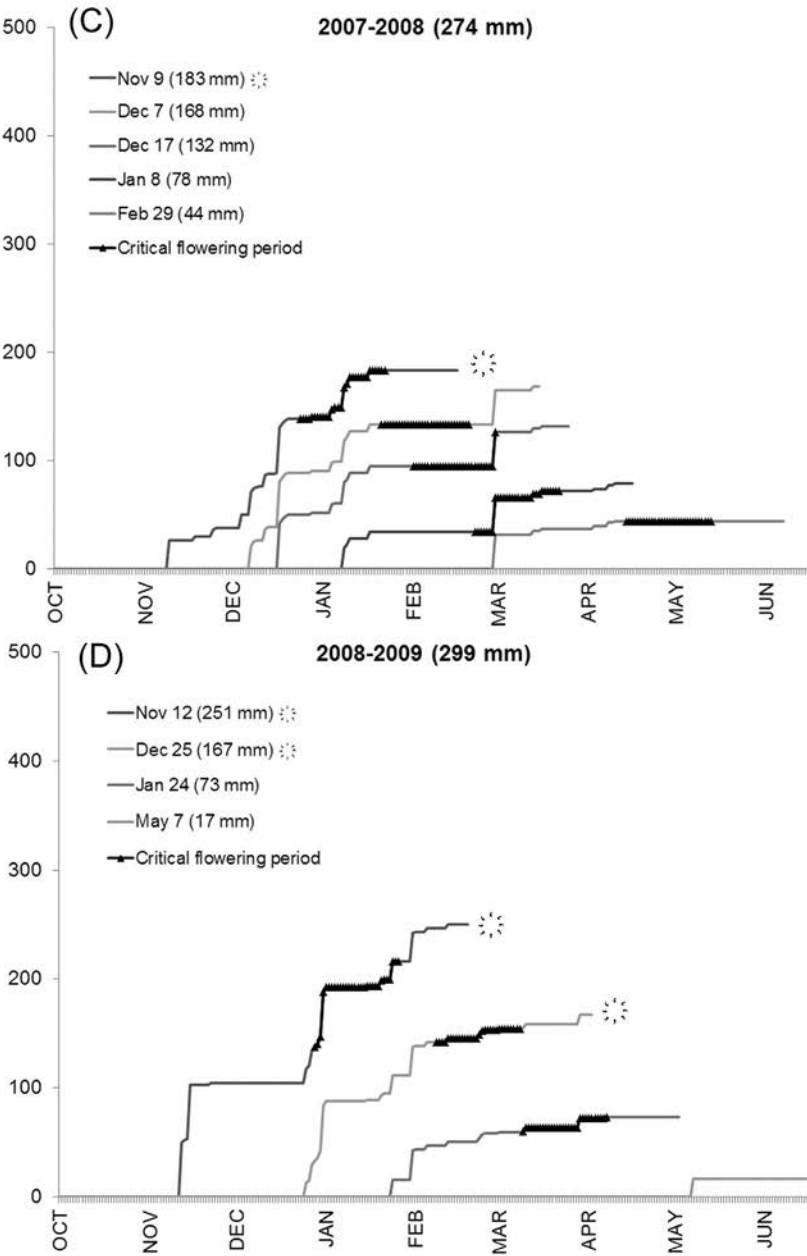


Table 5.2. A list of adaptive cropping practices, the objectives of each practice, how they work, where they are carried out, whether or not they are individual household (IND) practices or social arrangements (SOC), and the type of adaptation involved: Risk taking (T), risk spreading (S), risk avoidance (A), management of resources (M), or overcoming limitations (O).

Motive for practice	ADAPTIVE PRACTICE	How it works	IND/SOC	Type
A. Obtain access to necessary inputs at the right time	1. Default seed selection	Seed is not selected or separated from grain for consumption until the moment before planting: default selection for post-harvest qualities	IND	M
	2. Saving seed multiple years	Households save seed from year to year, preserving local varieties, prepared to plant at the first sign of rain	IND	M
	3. Off-season seed multiplication	Seed multiplication on small plots (river's edge or any depression in the landscape that retains moisture) during the dry season	IND	M
	4. Seed exchange or gifts	Exchange of seed with others to get access to lost varieties or to seed when in need— can be paid in labor, food, other types of seed or given as a gift	SOC	O
	6. Land lending	Asking for the use of plots of land to get access to a field if household does not have one, or to a field in a particular location—mostly no payment in exchange	SOC	O
	7. Labor exchange	Payment for labor in money, or in food, seed and sometimes by land lending (local name for practice: xikoropa)	SOC	O
	8. Cattle lending	The use of someone else's cattle for plowing a field. Three days of work on the oxen owner's field is rewarded by two days of use of their oxen (local name for practice: kukaxela), but can also be with no payment (borrowing) or for money (rental)	SOC	O
	9. Cattle keeping for others	Taking care of cattle for others full time allows the care-takers to use cattle in their fields and is also traditionally a service paid for by one animal per year (local name for practice: kuwekissa)	SOC	O
	10. Plant as much area as possible	This increases overall chances of producing maximum yields	IND	S
B. Cope with scarce and unpredictable rainfall				

C. Avoid losses in the field	11. Spatial distribution	Planting in different fields across the landscape	IND	S
	12. Temporal distribution	Planting every rainfall event, including in the dry season	IND	S/T
	13. Crop/soil combinations	Planting certain types of crops on certain soil types, for example, groundnut on sandier soils and maize on heavier soils.	IND	M
	14. Use of local varieties	Preferential use of local and open pollinated varieties that are well adapted to local conditions	IND	S
	15. 3-5 seeds per hole	To ensure that at least one plant survives, compensate for poor germination, establishment or performance	IND	S
	16. Intercropping	Planting of other crops between rows of maize to increase crop production, decrease weeds	IND	M
	17. Dry sowing	Planting before the rains to get a head start on the use of available water	IND	T
	18. Planting in dry season	Planting if it rains in the dry season	IND	T
	19. Premature maize harvesting	Harvest of maize while it is still not completely dry to avoid elephant attacks risking elevated post-harvest losses	IND	A
	20. Off-season planting location agreement	Agreement among farmers to plant together in the same place during off-season to reduce animal raids of fields	SOC	A
	21. Village nocturnal vigilance	Farmers guard field at night with fire and pot-banging to keep elephants and hippos away	SOC	A
	22. Storing cobs with husks	Maize is stored in the granary with husks to minimize post-harvest pest damage	IND	A
	23. Tight granary construction	Granaries built with drooped thatched roofs to reduce wind and minimize entrance of pests	IND	A
	24. Cooking under granary	Cooking under granary exposes the maize to smoke and makes it less susceptible to pest attacks	IND	A
	D. Avoid post-harvest losses (seed and grain)			

Timely access to resources: management of resources and overcoming input limitations

Timely access to resources determines a farmer's capacity to carry out the practices described above. Farmers must have access to sufficient quantity and quality of cleared land, oxen for plowing when it rains, labor to drive the plow and seed to plant. Ox-drawn mould-board plowing is the predominant form of land preparation; very few people till their fields using hand hoes. Households that do not have the necessary resources collaborate with other households to overcome input limitations. For example, households that do not have oxen for plowing engage in labor exchange with other households called *kukaxela*. The general rule for *kukaxela* is that for three days of labor on the oxen owner's fields, a worker is rewarded two days of use of the oxen on his or her own fields (Table 5.2).

Farmers sow between 20 and 30 kg maize seed per ha, planting 3-5 seed per hole at a spacing of 40-80 cm within a row and 60-100 cm between rows. Despite the large amount of seed required, lack of seed was not a major limiting factor to production. In the 2007-2008 season, after one failed harvest and 16 months after the last good harvest, 13 (38%) of 35 farmers surveyed reported that they did not have as much maize seed as they would have liked, but 28 (80%) had still planted from their own saved seed and had not obtained seed elsewhere.

Minimizing losses: risk avoidance

Once maize has produced ears with grain in the field, risk avoidance is the principal practice engaged in by individual households and in collaboration with other households. These practices include protecting the crop against animals such as elephants in the field and avoiding post-harvest losses in the granary (Table 5.2).

Variability among households

Households had a median of eight people in total, ranging from one to 27. The variability of total household maize production among households in the same season from the same village was enormous. In Chinhangane, for example, yields ranged from 377 to 11,688 kg per household and between 75 and 1172 kg per person in the 2008-2009 season (Figure 5.5). Using data sets from three villages we explore the causes of this variability: one complete, but small, data set (Nanguene, $n=13$), and two larger data sets for which total field area per household was not available for one (Chinhangane, $n=49$) and production was not available for the other (Macavene, $n=128$). The total field area held by the household was the only significant variable explaining maize produced per household in a regression analysis on the data from Nanguene ($r=0.682$, $n=13$, $P=0.021$). Field area per household was correlated to the number of cattle per household (Spearman's $\rho=0.486$, $n=128$, $P<0.001$) and to the number of people in a

household (Spearman's $\rho=0.462$, $n=128$, $P<0.001$) in Macavene. The number of cattle and the number of people in the household were significant variables in a regression analysis on the log of total household maize production in Chinhangane when land area was not included ($r=0.680$, $n=44$, $P<0.001$). When the regression was repeated excluding households with fewer than two cattle (minimum needed for ploughing), the only significant variable was the number of cattle ($r=0.591$, $n=26$, $P=0.001$). The number of people in the household and number of working aged members of the household were both correlated with total number of cattle ($r=0.554$, $n=44$, $P<0.001$ and Spearman's $\rho=0.603$, $n=44$, $P<0.001$).

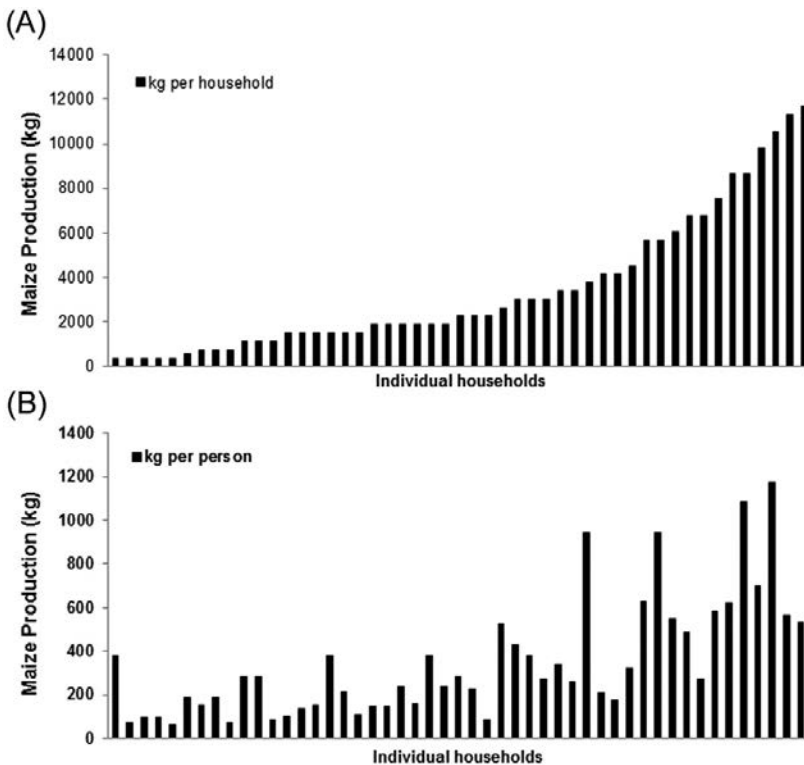


Figure 5.5. Variability in harvest among households in the 2008-2009 season, expressed as (A) the total production, kg per household, and (B) kg per person for 50 households in the same village in Massingir, Mozambique presented in rank order of production per household.

Out of 50 households interviewed in Chinhangane, (20 of which were female-headed households), 29 households ploughed their fields with their own oxen, of which 22 (75%) were male-headed. Of all households that engaged in kukaxela, 9 out of 17 (52%) were female-headed. Only female-headed households reported renting or borrowing cattle. Households that had no oxen and engaged in kukaxela to gain access to oxen

for ploughing produced significantly less maize per person than those that used their own oxen for ploughing (Mann-Whitney test, $P < 0.001$) (Figure 5.6A). There was no significant difference in production between male- and female-headed households who had the same source of animal traction (Figure 5.6A) and there was no significant difference in total area of fields between male and female-headed households (Figure 5.6B), but they had fewer cattle ($P < 0.01$) (Figure 5.6C), and fewer working aged people per household ($P < 0.05$) (Figure 5.6D).

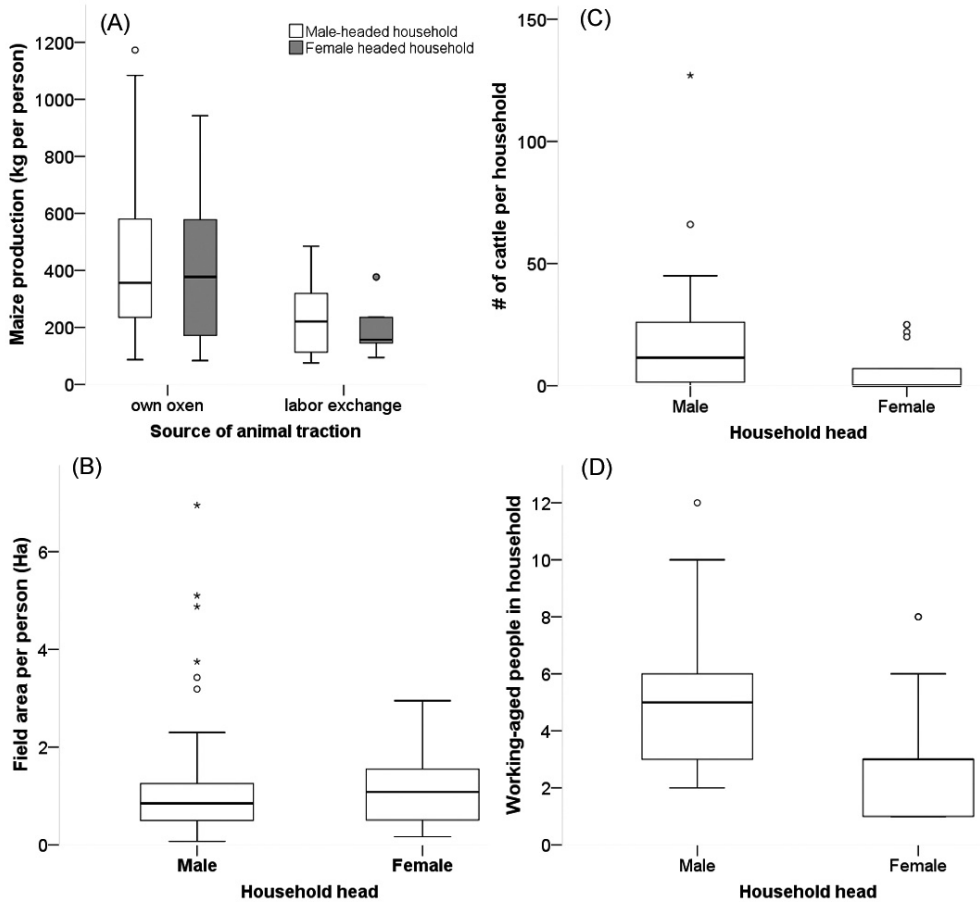


Figure 5.6. Differences between male and female-headed households in Massingir, Mozambique in 2009 (n=50) with respect to, (A) source of animal traction for ploughing (own oxen: male-headed households, n=22, female-headed households, n=7; labor exchange: male-headed households n=8, female-headed households n=9), (B) number of cattle, (C) household labour, and (D) total field area per person.

Rainfall

A logistic regression model containing the variables: rainfall during emergence and establishment (INIT), rainfall during the vegetative phase (DEV) and maximum number

of consecutive dry days during the reproductive phase for each cropping season predicted correctly 100% of the observed responses. This model was used to predict the success/failure of each planting event for the remaining nine seasons (1995-2004). The water satisfaction index was used to estimate percent attainable yield for each planting event. There was a significant correlation between the maize production data based on recall and the predicted maize production derived from the model ($r=0.884$, $n=62$, $P<0.01$). Between 2005 and 2009, 8 of 22 (36%) observed planting events were successful. When success/failure of the harvest was predicted for the seasons between 1995 and 2004, a similar trend emerged; 35% of all planting events were successful. Predicted yield (when > 0) varied from 20% -100 % of attainable yield, with an average of 67% (Appendix 1).

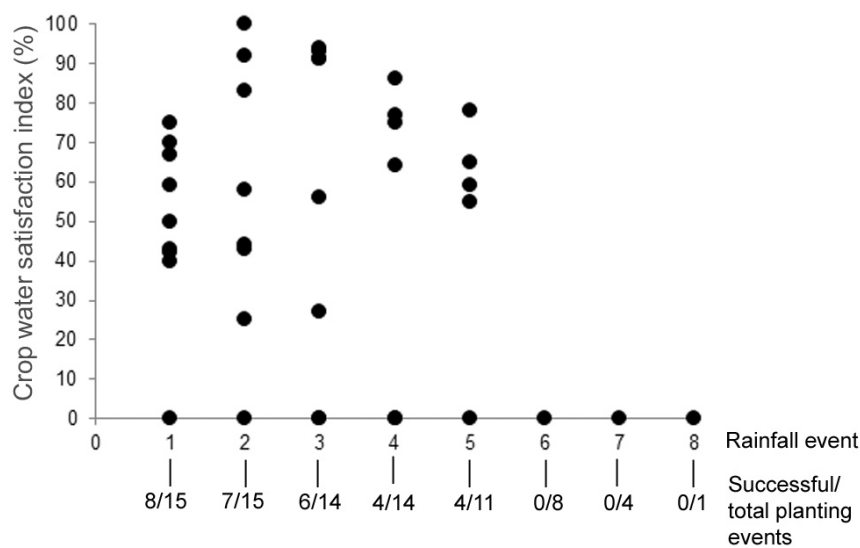


Figure 5.7. Crop water satisfaction index (a proxy for % attainable yield) for each rainfall event displayed by the chronological order of the rainfall event each season from 1995 to 2010. Total number of rainfall events with some harvest (successful) over the total number of rainfall events analyzed are indicated.

We found that 53% of planting events in the first rainfall of the season were successful, followed by 46%, 42% 28%, and 36% in the next four rainfall events, respectively. There were no predicted successful events in the later three rainfall events (Figure 5.7). The crop water satisfaction index, however, was highest in the second rainfall and even the 5th rainfall event had as high as 80% crop water satisfaction (Figure 5.7). The estimated amount of seed needed to sow on every suitable planting day represented 4.5% of total estimated harvest, and 8.5% of harvest recall figures over the 15 years. Estimated yields from hypothetical hand cultivation were predicted to be half as much as when using labor exchange practices.

When the inter-annual rainfall variability and the variability among households with respect to land, cattle and labour was taken into account, we estimate that an average household of eight members needed approximately 11 ha to produce enough to sustain the household for two years (Figure 5.8).

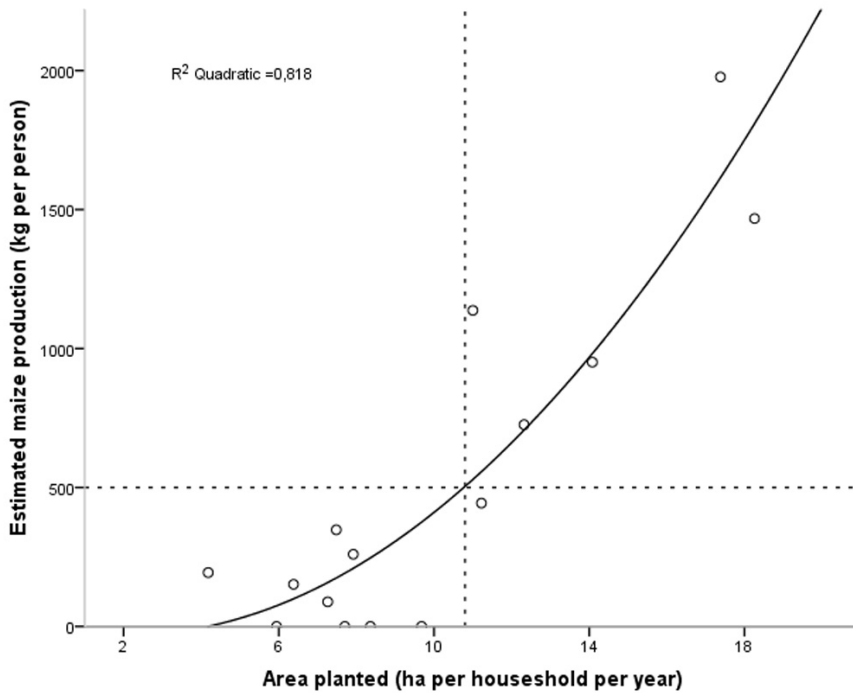


Figure 5.8. Average estimated maize production per person as a function of area planted per year. Data are presented from a 15-year period of variable climatic conditions, and accounts for heterogeneity of household assets (land, cattle and labor). Area planted per household per year was calculated for an average household size with 8 members. At least 11 ha are necessary to produce enough maize to sustain the household for two years (250 kg per person per year).

Characteristics of the local maize

The maize grown in the region is a short-duration (matures in 100 days), open-pollinated landrace; local people refer to it as ‘mavele ya hina’ in Shangaan, translated as ‘our maize’, and differentiate it from maize from other areas, including commercial varieties, commonly called ‘apoio’ a Portuguese word meaning ‘support’. The two most important features that differentiated the local maize from other maize, according to interviews and focus group discussions, were its perceived drought tolerance and post-harvest storage qualities. Granaries are structures with a volume of around 15 m³ that are elevated approximately 2 m above the ground, with the enclosed area below used as a kitchen. Maize is stored in the granary on the cob and with the husks intact and

is constantly exposed to smoke from the kitchen below. Improved varieties, although recognized for their higher yields and improved performance under irrigation or adequate rainfall conditions, were said to suffer more readily from high temperatures, and prone to rotting quickly in the granary because the husks do not close well over the ear in the way that the husks on the local maize does (Figure 5.9A). Ear characterization of local maize revealed that of 151 ears, 97 (64%) of them were missing an average of 1.5 cm of kernels ($n=39$) on the top of the ear which is associated with the tightness with which the husks closed around it (P. Fato, personal communication) (Figure 5.9B).

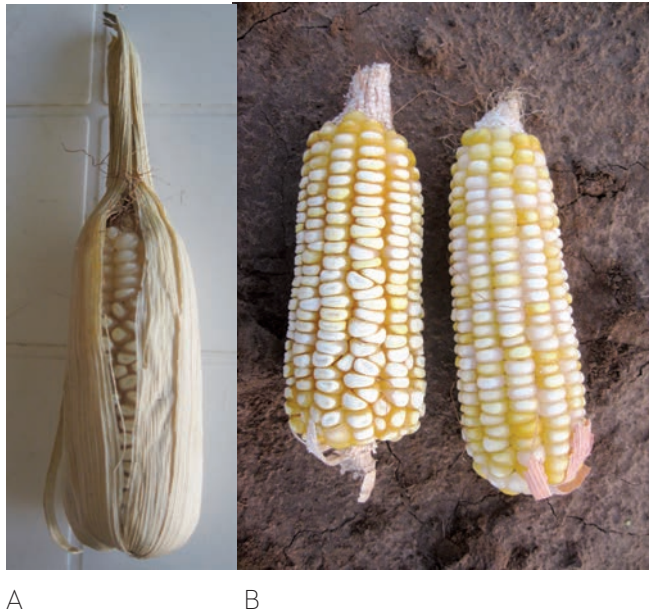


Figure 5.9. Local maize (A) showing long husks and (B) the lack of kernels at the top of the cob because of the tightly closed husks.

Different names are given to physical characteristics of the maize ear, particularly with respect to colour of the kernels, cob and husks, but all maize is treated as one single landrace. Seed is not kept apart from the harvested grain but selected from stored grain when needed for planting; women began to separate ears for seed from ears for consumption during the food preparation process when the granary stocks began to run out. The most important trait for seed selection was that seeds were intact, not broken or with holes, indicating that storage capacity was constantly selected for. The stacking of the ears in the granary is an indirect selection practice. Larger ears, well covered by husks, are stacked at the bottom of the granary, and therefore more likely to be used for seed.

Post-harvest storage

Post-harvest insect pests were named in focus group discussions as the second biggest threat to the maize crop, after crop damage by elephant. It was repeatedly mentioned that post-harvest problems were worse during the study period (2006-2010) than ever before. After 12 months storage, 103 of 189 (56%) ears evaluated from nine granaries showed signs of post-harvest pest damage. The majority of the damaged ears had between 75 and 100% damaged kernels (Figure 5.10). There was no significant difference between the damage caused to maize depending on its kernel type (dent or flint). There were large and significant differences found among granaries. Granaries in good condition had significantly less insect damage than those in poor condition (Mann-Whitney, $P < 0.001$), and traditional granaries with thatched roofs had less damage than granaries with corrugated metal sheet roofs, or with no roof at all (Mann-Whitney, $P < 0.001$) (Figure 5.11).



Figure 5.10. The larger grain borer (LGB) turns the maize kernels to dust.

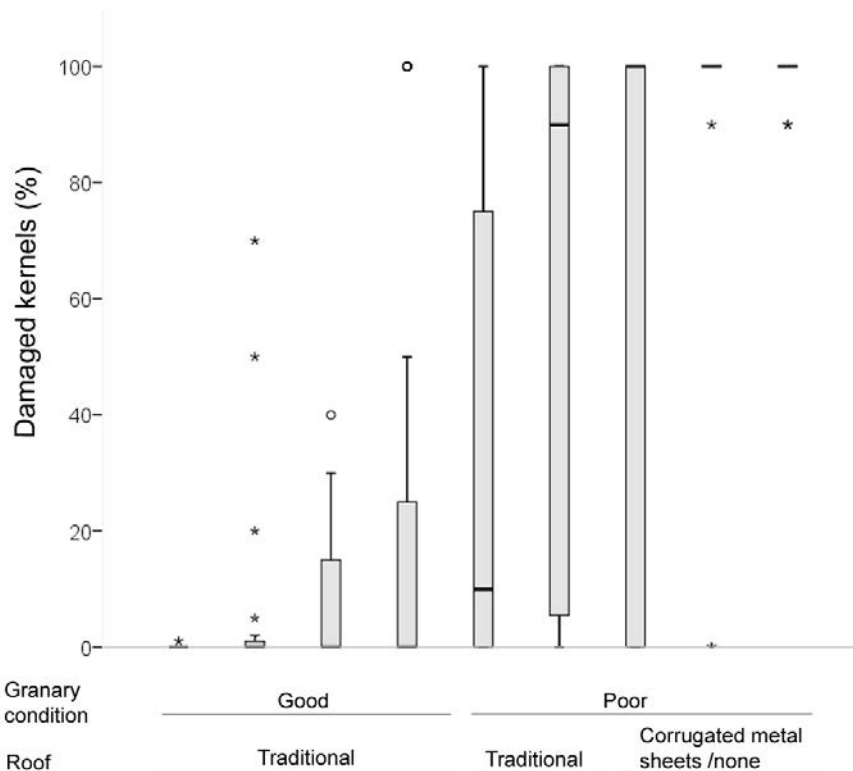


Figure 5.11. Maize ear damage from post-harvest insect pests in Massingir, Mozambique in May 2010. Ear damage (%) per granary, presented by condition of the granary (good/poor) and the type of roof (traditional/ corrugated metal sheets or none). 189 ears from 9 granaries were sampled. Granaries in good condition had significantly less insect damage than those in poor condition (Mann-Whitney, $P < 0.001$), and traditional granaries with thatched roofs had less damage than granaries with corrugated metal sheet roofs, or with no roof at all (Mann-Whitney, $P < 0.001$).

DISCUSSION

Our results suggest that it is a combination of many social and technical practices that makes it possible to be food self-sufficient in the semi-arid ecosystem of Massingir. These practices need to be taken into account in scenario analyses in two ways. First, the time scale of analysis needs to be expanded from annual to four- or five-year cycles to account for sporadic abundant harvests and storage of food reserves that cover needs for multiple years. Second, practices, such as multiple planting events and labor-exchange practices need to be accounted for, as these make it possible to produce more than expected under marginal conditions and more than would be predicted using current methods. Thus it is important to consider a unit of analysis larger than the household when designing interventions to support agricultural production.

Time scale of analysis: multiple year cycles of food self-sufficiency

Massingir is in an agroecological zone deemed unsuitable for crop production when analysis is based on individual years; mean annual rainfall is 400 mm and total crop failure is common (Kassam et al. 1982; Westerink 1995). However, many residents produce sufficient maize in years of good rainfall to last for several years (Figures 5.1 & 5.2). The practice of storing maize over multiple-years was as an important strategy for surviving periods of drought between 1000-1600 AD in the southwestern United States (Spielmann et al. 2011). Sorghum and millet, crops that have better storage capacity than maize, used to be stored for multiple years in southern Mozambique, until they almost entirely disappeared in the 1930s (van den Berg 1987). We found that maize characteristics indicating good storage capacity, specifically ears with long and tight husks were among the most important preferred traits.

Instead of experiencing yearly hunger periods before the subsequent harvest (seasonality) as is common in much of southern Africa and other parts of Mozambique (Handa and Mlay 2006; Hahn et al. 2009), general trends indicated 'seasonality' cycles of a longer duration. Multiple-year periods of food self-sufficiency were especially evident for households with more cattle and land (Figure 5.1A and 5.1C); patterns of annual hunger periods could be seen among more vulnerable households in some years (2007 - 2010) (Figure 5.1Bb and 5.1D). Better understanding of these cycles is imperative for designing interventions. People may not need annual assistance to get through one year with harvest failure, depending on the previous years' harvest. Conversely, lengthy hunger periods of two to three years can have major negative effects on poverty and health.

Households with the means to buy food before their stock in the granary ran out consumed their own maize more slowly. Labor migration and cross-border trade comprised an important source of income for some households, but for others migration was a rite of passage for young men and generated minimal or no remittances, sometimes costing the family money (Norman 2005). Livestock, as in many places in Africa, is an asset that is sold when in need of cash (Moll 2005). When asked about sources of income, people responded that they sell livestock (Table 5.1), but detailed observation and probing questions revealed that livestock was only sold in times of need (Figure 5.3B). Sales of livestock result in an undesirable decrease in assets; households that have sufficient money rarely sell livestock (Hoddinott 2006). The fact that households claimed that they were eating primarily from their own granary did not necessarily imply that they had a diet that was nutritionally balanced.

Primary dependence on livestock would lead to rapid rates of herd depletion. One 50-

kg bag of maize flour can feed an average family of eight people for 12 days and, during the study period, the cost fluctuated around 800 Mozambican meticaïs (between US\$25 and 35). A goat sold for 600-900 meticaïs in Massingir in 2008-2010, equal to or less than the cost of a 50 kg bag of maize meal, meaning that a household would have to sell a goat every 12 days to feed themselves on the basis of goat sales. A head of cattle sold for between 5,000 and 15,000 meticaïs (US\$200 and 600) depending on the size of the animal and the market value at the time of sale. When food stocks in the region are depleted, the market becomes flooded with livestock which forces prices down. At the same time, the price of maize meal and rice rises due to shortage in supply. In a best case, the sale of a single head of cattle sold at a top price can provide households with food for 6 months if they do not spend the money on anything else. Interviews indicated that it was rare to sell two or more cattle per year (Figure 5.3B). Livestock sales play a role in purchase of food, providing a safety net when the granary grain stocks dwindle, but do not sustain household food security.

Cropping practices expand production potential

Cropping practices that are risk-taking and risk-spreading, such as planting with each rainfall event make food production possible in this marginal environment. The rainfall distribution is as important for crop production as total annual rainfall. For example, the 2008-2009 cropping season received a total rainfall of 299 mm and more than half of the households interviewed produced enough to sustain the food needs of the household for one year (Figure 5.5). By contrast, a total rainfall of 342 mm fell in the 2002-2003 season, but it was a year of harvest failure for most households (Figure 5.2).

Research suggests that negative consequences of climate change on agricultural production can be avoided through shifting planting dates (Crespo et al. 2011; Harrison et al. 2011). The effect of dry spells within the season on maize production critically depends on their timing within the crop cycle (Denmead and Shaw 1960; Doorenbos and Kassam 1979). By planting each day that germination is likely to be successful, farmers increase the chance that subsequent rainfall events will coincide with critical periods in the growing cycle of the crop to achieve some harvest (Figures 5.4 and 5.7), although yields attained may be small (Barron et al. 2003). Staggering of planting dates has been documented in semi-arid areas of Zimbabwe (Murungweni 2011), and documented as a strategy in Mexico to avoid pest attacks (Altieri and Trujillo 1987). The practice of planting repeatedly with every substantial rainfall event, even at the end of the rainy season, is a seemingly illogical practice that demands a large amount of seed (Schouwenaars 1988). However, our results suggest that even in the 5th rainfall event a crop can receive 80% of its water requirements as indicated by the crop water satisfaction index (Figure 5.7). Despite the fact that 65% of planting events were

predicted to fail, seed accounted for only 4.5% of total predicted harvest and 8.5% of reported harvest over the long term. In the short term, particularly after years of total harvest failure when food was scarce, sowing repeatedly on large areas of land can require the equivalent in seed of one year's food supply for one person (250 kgs). However, households still chose to allocate this seed to planting because of what they stood to gain in harvest.

Planting fields distributed across the landscape has been documented as a risk-spreading practice primarily in regions with many agro-ecological niches (MacDonald 1998). In Massingir, this practice carried out not among different agroecosystems, but because of the patchy nature of rainfall in the region, also documented in Mexico (Kirkby 1974; Thompson and Wilson 1994). Observations and interviews revealed that rainfall events may provide adequate rain for planting in one field while neighboring fields remained dry. Likewise, a field that has soils with better water holding capacity or that receives run-on water is likely to produce more in a year of low rainfall, whereas in very wet years, well-drained fields would produce better yields. Therefore, spreading the area planted across fields with diverse conditions increases the likelihood that some of the crop will be planted in a location favorable for a good harvest.

Given the rainfall and production variability between 1995 and 2010, we estimate that at least 11 ha of land per household is needed to produce enough maize to sustain a family of eight (median household size) for two years (Figure 5.8). In similar cropping systems, such as the Sahel and semi-arid regions of South Africa, extensive farming has been documented as a strategy to reduce risk of crop failure and to mitigate risks of climate variability (Mortimore and Adams 2001; De Rouw 2004; Thomas et al. 2007).

Another risk-spreading strategy, albeit one that appeared to arise by default and was not explicitly described as a strategy by the farmers, is the use of a diverse population of open-pollinated maize instead of maintaining separate landraces. In many cropping systems farmers maintain multiple distinct varieties or landraces, each better adapted to certain conditions (Bellon 1991). However in Massingir only one landrace was recognized. Because seed is selected just before planting, major selection pressures on the maize population are the long-term cropping environment (whatever survives drought in dry years or yields well in wetter years) and storage conditions (whatever survives post-harvest damage) (Moreno et al. 2006). Repeated selection for long-term storage has likely resulted in maize that can be saved for multiple years. Similarly, by maintaining a diverse landrace, rather than multiple separate landraces, farmers may reduce the risk of crop failure. Asynchronous development may spread flowering over a longer period as documented in pearl millet varieties in the Sahel (De Rouw 2004), but further research is needed to verify this.

Social arrangements: reconsidering the household as the unit of analysis

The amount of grain harvested varied considerably among households in the same season (Figure 5.5). Understanding the causes of this variability helps to identify which households have the capacity to be food self-sufficient and under which conditions. While household assets, such as land and cattle ownership are correlated with production, this is partly because these households can employ more risk-spreading and risk-taking practices in a timely fashion.

Households with more land can plant larger areas, and households with cattle can quickly plant as soon as it rains, taking advantage of the maximum amount of rainfall available. The first and second planting events each season resulted in the highest yields (Figure 5.7), potentially because of a combination of higher rainfall per crop growing cycle and a nitrogen flush that accompanies the first rains in savannah environments (Birch 1958). A household that has first to work on someone else's field before planting their own miss out on important soil water from the first rainfall of the planting event.

The amount of labour per household was not a significant factor for predicting maize yield when the number of oxen was included in a regression model. However, when a household had no cattle, the number of people in the household became important for production. Without cattle, production capacity depends on the labour available to engage in exchange practices and to carry out necessary cropping activities. Conversely, households with elevated numbers of cattle can lend out their oxen in exchange for labour from other households and therefore their own household labour supply is less important. Household size is correlated with maize production, but the household size is not a fixed unit. It may in fact be a function of food insecurity—a household may stay together when there is enough food to feed everyone, and decrease in size when there is not.

Because of the extensive nature of the cropping system, cultivation with a hand hoe is rare. Although households that exchange labour for the use of oxen cannot plant as much land or plant as quickly as households that have their own oxen, labour exchange allows households with no oxen to produce twice as much as they could if they had to plant by hand. Labour exchange is in itself an important adaptive strategy (Osbahe et al. 2008), but studies that identify vulnerable groups often focus on the household as a unit. Our results concerning labour exchange suggest that it is necessary to situate and assess the household production capacity within the social network of the village.

Beyond production

While farmers spread and take risks to produce as much as they can, a new threat has emerged that threatens their multiple-year cycles of food self-sufficiency. The larger grain borer (LGB) (*Prostephanus truncatus*), the most destructive pest of all stored grains (Boxall 2002), was recently reported in the area. First found in Mozambique in the province of Tete in 1999, it was documented in 2001 in Chiucalacuala district, Gaza Province (Cugala et al. 2007). A survey in 2005 found LGB in a neighboring district but not in the district of Massingir (Sitoe 2006). Five years later we found LGB in granaries in Massingir district. This represents a major threat to food security in the region where people depend on saving their maize for between 24 and 40 months after a good harvest.

A more common post-harvest pest, the maize weevil (*Sitophilus zeamais*) causes 6-12% weight loss in maize, whereas LGB can cause 30% weight loss (Hodges 1986; Makundi et al. 2010). LGB causes major damage in granaries after 6 months of storage and losses increase with the length of storage (Boxall 2002). Kernel hardness had no effect on LGB damage (Meikle et al. 1998) but husk cover on the ear delayed LGB infestation in the first 6 months (Meikle et al. 1998; Boxall 2002). The distribution of damage caused by the LGB is sporadic, unpredictable and highly variable from one granary to another (Boxall 2002). We observed that well-constructed and maintained traditional granaries with grass-thatch roofs had less post-harvest pest infestation (Figure 5.9).

Despite major damage, insect-infested maize was consumed regularly. This may have health implications because Massingir is an area where maize is prone to contamination by aflatoxin, a potent carcinogen produced in stored grain by the fungus *Aspergillus flavus*. Field contamination of maize is associated with drought-stress and high temperatures (Munkvold 2003; Klich 2007). Physical damage to the kernel caused by insect pests is one factor associated with elevated aflatoxin contamination in stored maize (Munkvold 2003).

LGB thrives in an environment of between 27 and 32 °C with a relative humidity of 70-80% (Shires 1980; Bell and Watters 1982). Currently Massingir has mean daily temperatures between 27 and 32 °C during only the hottest two months of the year, and relative humidity of between 63 and 71% during the whole year. Climate change predictions for southern Mozambique range from an increase of 1.8 to 3°C by 2050 (MICOA 2003; INGC 2009). This rise in temperature would mean that Massingir would have temperatures between 27 and 32 °C from five to seven months of the year, providing the LGB three times longer a period with a suitable environment for their growth and reproduction. Although dispersal of LGB in the long term is not a function

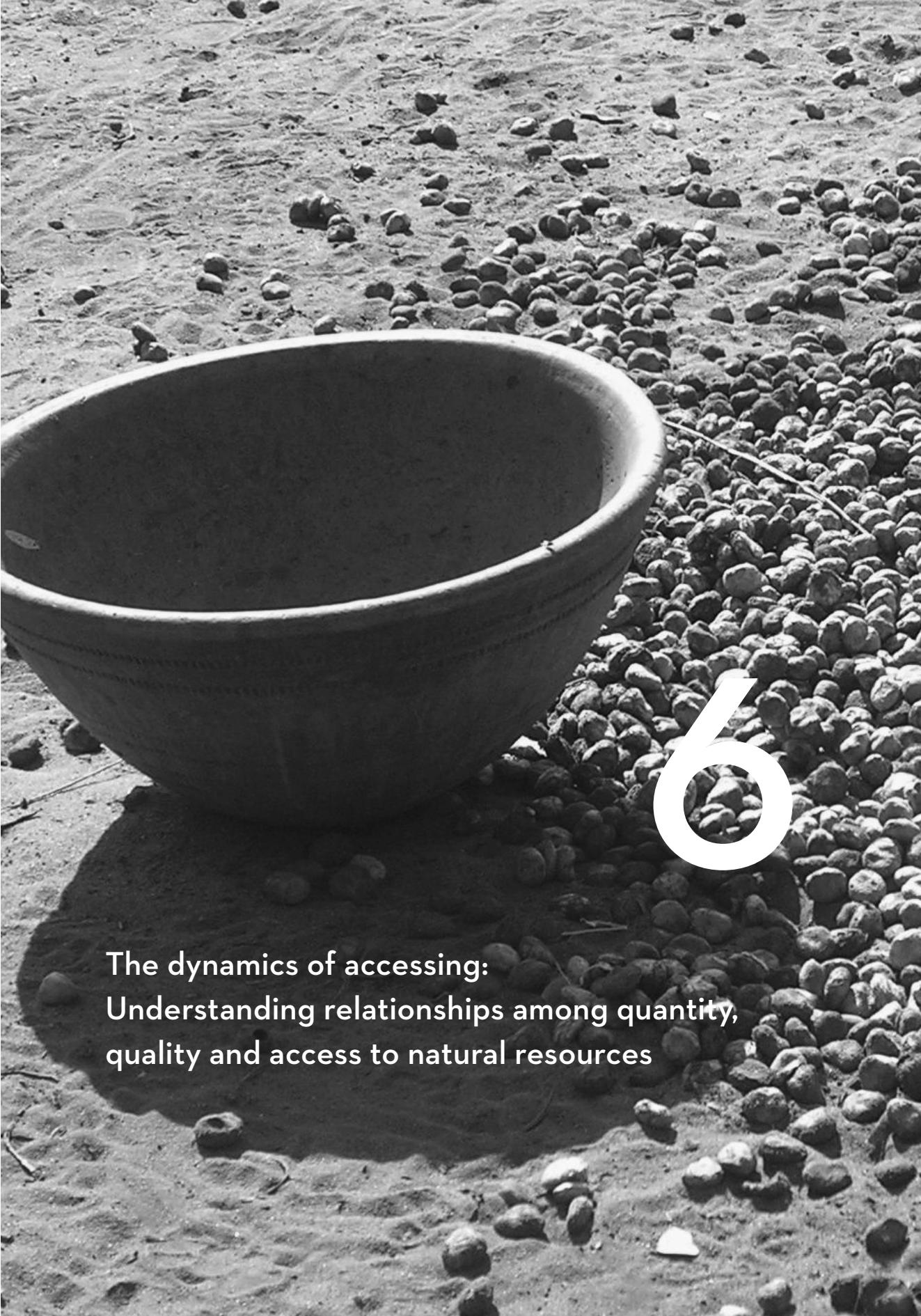
of climate alone, several studies have shown that it is a significant factor in explaining its relative abundance (Nansen et al. 2001; Hodges et al. 2003). This indicates that the threat of LBG to the food security in this and similar regions may worsen with climate change. For the residents of the Massingir region to remain food self-secure, they need to adapt to the new risks posed by the LBG.

CONCLUSIONS

Semi-arid areas are expected to expand because of climate change, and rain-fed agriculture is likely to remain an important source of food for rural residents of Sub-Saharan Africa (Cooper et al. 2008). Therefore, we need to learn from insights available from actual cropping systems in semi-arid agroecosystems to guide efforts to mitigate negative effects of climate change. We found that some residents of Massingir, a region considered unsuitable for agriculture, could attain food self-sufficiency for multiple years by maximizing production and storing grain after favourable rainfall events. This finding implies that our understanding of seasonality and of patterns of hunger periods needs to be extended beyond annual cycles to consider four- to five-year cycles in areas with erratic rainfall. This finding also suggests that in rural areas where extensive land is available, instead of gearing climate change policies and agricultural development interventions towards market integration, or away from dependency on agriculture, the promotion of food self-sufficiency is a viable option. For this approach to remain feasible, however, the increasing problems of post-harvest storage need to be addressed (Nyagwaya et al. 2010). Along with more immediate pest control measures, long husks, a proxy for improved post-harvest storage, could be tested as a selection criterion in breeding programs that focus on development of drought-resistant varieties.

Understanding current practices effective in maximizing production under erratic rainfall in marginal environments is crucial for expanding existing adaptive capacity and to identify new approaches that reduce vulnerability to social and environmental change. Although the existing cropping practices described here, for example, planting with every major rainfall event but only harvesting from 35% of the planting events, seem neither economically nor agronomically logical at first glance, they are the key to production of sufficient maize under these marginal conditions. We found that the disadvantaged farming household produces more than would be expected by employing collaborative adaptive practices, but they remain disadvantaged compared to those with more arable land, labour and oxen for ploughing. Focusing on how these households could further increase production based on current practices is an example of adaptive capacities that could be expanded.

Our results suggest that assessments and policies aimed at reducing vulnerability to climate change should look beyond seasonal agricultural production to include food self-sufficiency, improved post-harvest storage and take a wider perspective than the household as the unit of analysis. Re-examining the assumptions on which we base our research, together with people living in these challenging environments, may be the most hopeful way to contribute to enhancing adaptive capacity.



6

The dynamics of accessing:
Understanding relationships among quantity,
quality and access to natural resources

ABSTRACT

Assessment of the quality and quantity of natural resources without understanding the dynamics of access is insufficient for resolving conflicts around or managing resource use. To understand natural resource use, based on a case study of the resettlement of a village from the Limpopo National Park in southern Mozambique, this article estimates the quality and quantity of four resources available in the pre and post-resettlement location (water, grazing resources, agricultural fields and forest), the entitlements to resources provided as compensation for resettlement, and the customary rules of access existing in the village before resettlement. We then provide an account of the resettled residents' process of accessing these resources in practice, the mechanisms they used to gain access and the limitations and challenges they faced. Overall the resources were comparable in quality between the pre- and post-resettlement locations and although there was less grazing area per animal unit (-29.53 ha), and cleared cropping land and forested area per person (-2.52 and -64.63 ha, respectively), there was sufficient grazing resources and cropping land to accommodate the resettled population. Compensation entitled resettled residents to only one ha per nuclear family and did not make special arrangements for access to grazing and forest resources, but customary rules of access were inclusive and park staff did not expect problems of access to arise. Despite this, resettled residents encountered major challenges to access resources. Our analysis suggests that resource use is ultimately shaped by the relationships between quantity, quality and access to resources.

Key words: natural resources; access; resettlement, Limpopo National Park, Mozambique

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INTRODUCTION

Conflicts over natural resources and competing claims made by different groups on the same resources are increasing in number and intensity (Nie 2003; Giller et al. 2008). How to deal with these competing claims in an equitable way is rapidly becoming a question that urges greater insight. Competing claims on natural resources are characterized by overlapping layers of governance, multiple uses and users of resources, and divergent cultural, economic and environmental valuation of resources across scales (Giller et al. 2008). This complexity poses challenges for equitable and sustainable management of natural resources. Current trends of land grabbing and increasingly strict enforcement of conservation area regulations are excluding residents from access to the natural resources on which their livelihoods depend (Brockington and Igoe 2006; West et al. 2006; Borras Jr et al. 2010; Land Research Action Network 2011). Efforts to protect natural resources tend to be incompatible with the livelihood needs of local residents (Adams et al. 2004; Agrawal and Redford 2007; McShane et al. 2011). Natural resource management approaches that have strived to achieve environmental sustainability and social equity, such as community based natural resource management and transfrontier conservation, have largely failed to achieve their goals (Campbell et al. 2001; Wolmer 2003; Piers 2006). Policy makers, scientists and practitioners alike seek options that work.

Many studies that aim to address competing claims on resources focus on assessing the quantity and quality of the resources at hand, but fail to consider how people access those resources. Similarly, studies focused on access to natural resources rarely consider the quantity and quality of those resources. The Millennium Assessment, for example, aimed to ‘understand the consequences of ecosystem change for human well-being’. It was a multi-scaled study that took account of human well-being and human use of resources. Yet it still focused primarily on the quantity and quality of natural resources (Scholes and Biggs 2004). In fact, the only millennium development goal that deals with the management of natural resources (MDG 7) uses area of land as the basis of the two indicators defined for resource conservation, and overlooks quality (Roe 2003). Such a focus on quantity and quality of resources reveals only part of the relationship between people and natural resources which co-exist in complex social-ecological systems (Leach et al. 1999; Li 2001). Understanding access to natural resources is an important missing component in these kinds of studies.

The concept of access is employed in a wide range of literature dealing with common pool resources (Ostrom et al. 1994; McCay and Jentoft 1998), community based natural resource management (Agrawal and Gibson 1999; Leach et al. 1999; Coulthard 2011), property rights (Peluso 1996; Berry 2009; Sikor and Lund 2009) and gender analysis

(Gezon 2002; Gugurani 2002; Agarwal 2003; Sultana 2011). Access is discussed primarily in terms of who has access, differential access among social categories, improving access through, for example, establishing access rights, rules and norms of access and the consequences of not having access. It has been recognized that the rules and norms of access change in response to social and ecological processes (Berry 1989b; Agrawal and Gibson 1999), as does the quality and quantity of natural resources (Leach 1999: 232). However, there remains an inadequate understanding of the relationships among access, quantity and quality of natural resources and how these relationships influence resource use.

In southern Mozambique the establishment of the Limpopo National Park in 2001 laid claims to land and water in an area in which approximately 27,000 people reside. Conservation managers supported by international donors made the decision to resettle some of the residents to locations outside of the park's borders. Resettlement planning was driven by questions about how much (quantity) of which resources (quality) people would be entitled to as compensation for resettlement. The residents to be resettled, however, continually pointed to another type of question: will we be well received in the new location? This question in practice means, among other things, will we be able to access the resources we need? The objective of this study was to explore how the relationships between quantity, quality and access influenced resource use in post-resettlement. In this paper we analyse the quantity and quality of the resources available in the post-resettlement location, the formal entitlements to resources provided by the government as compensation for resettlement, the customary rules of access existing in the village before resettlement and the challenges faced by resettled residents in accessing resources in their new location. The research questions that we pose are: 1) Were there enough (quantity) of the right kind (quality) of resources available in the post-resettlement location to accommodate the resettled villagers? 2) What entitlements to resources were resettled people provided as compensation for resettlement? 3) What were the rules of access in the village before resettlement? and 4) What facilitated or limited access to those resources for the resettling residents? We first define access, and describe access in the context of resettlement before turning to the case.

What is access?

The definition of access we use is 'the ability to benefit from things' (Ribot and Peluso 2003: 153). Ribot and Peluso (2003) identify key mechanisms that may influence or facilitate access (Table 6.1). These mechanisms can be rights-based, defined by law, custom or convention, whereby the state, or customary governing body will enforce a legal claim or oppose an illegal action (Ribot and Peluso 2003: 162). Structural and

relational mechanisms function in parallel to rights-based mechanisms. These are the political, economic and cultural factors that limit or enable a person's ability to benefit from a resource. These mechanisms include technology, capital, markets, labour, knowledge, authorities, identities and social relations. While Ribot and Peluso (2003: 162) recognize rights-based mechanisms to include custom or convention, we added customary institutions as a separate rights-based mechanism to differentiate between informal and law-based rights (Table 6.1). We also added distance as a separate mechanism because of its importance in this case (Table 6.1). All of these mechanisms are interrelated and can function sequentially, simultaneously or in opposition to one another (Ribot and Peluso 2003).

Informal rules and norms about access shape who can access which resources through which mechanism (Berry 1989a; Agrawal and Gibson 1999). However, access is a dynamic and constantly re-negotiated process (Berry 1989b; Shipton and Goheen 1992; Gengenbach 1998). Mechanisms of access may differ according to the specific character of a resource (Peluso 1996; Ostrom 2009), the user, the season or because of particular circumstances (Shipton and Goheen 1992). Informal rules and norms are constantly adjusted to adapt to changing economic, environmental, social and political circumstances, including formal policies and laws (Berry 1989b, 1992; Peluso 1996; Elmhirst 2011). In the day-to-day use of resources, however, people's behaviour commonly deviates from the informal rules and norms of access (Gengenbach 1998; Agrawal and Gibson 1999; Leach et al. 1999). To distinguish between the rules and norms of access, and the constantly negotiated day-to-day interpretation of those rules we will use the word *accessing* to refer to access in practice.

Access in the context of resettlement

Development projects such as dams and conservation areas often lead to displacement of people. Resettlement commonly leaves people worse off than before (Cernea 1997; Brockington and Igoe 2006; Schmidt-Soltau and Brockington 2007). The risk of losing access to common property resources and the risk of landlessness in post-resettlement have been identified as problems common to many resettlement projects (Cernea 1997; Kibreab 2000; Koenig and Diarra 2000). In an attempt to mitigate the risk of impoverishment caused by resettlement, the World Bank (WB) developed a policy (WB OP 4.12) that calls for fair compensation, and upholds that resettled people should be provided with development opportunities. The provision of conditions for people to benefit from resettlement requires careful planning and negotiation of compensation on the part of those responsible for enacting the policy (World Bank 2004). The policy is primarily concerned with how to determine how much (quantity) of which resources (quality) each person should get. Access is not explicitly addressed

Table 6.1. Mechanisms of access, adapted from Ribot and Peluso, 2003

of access (Gengenbach 1998; Agrawal and Gibson 1999; Leach et al. 1999). To distinguish between the rules and norms of access, and the constantly negotiated day-to-day interpretation of those rules we will use the word *accessing* to refer to access in practice.

Type	Mechanism	Definition	Examples
Rights-based	Legal	Rights attributed by law	Rights to property through a title or deed
	Institutions	Rights secured through informal rules	Customary recognition of inheritance of land
	Illegal	Benefiting from things not sanctioned by law or society	Theft, squatting, violence
Structural and relational	Technology	Use of a technology or a tool makes it possible to extract resources otherwise not possible, physically reach a resource, facilitates faster extraction, etc.	Plow, fence, tubes, pumps, electricity, roads, cars, weapons
	Capital	Capital can be used to purchase technology, tools, labor, and rights to resources, to leverage more capital (loans), to stake claims	Purchase of technology for extraction, production, conversion, credit, plant trees to stake claims on land, pay for travel to bargain for access with authorities
	Markets	Markets allow the resource owner to commercially benefit from it	Existence of, distance to market, price of commodity, preferential treatment
	Labor	Those who have labor available to them, or who control labor opportunities can benefit from a resource that otherwise would remain unexploited, allocate labor opportunities as favors, and bargain down wages	Laborers in an agricultural or extraction setting allow for more production. As a laborer, ability to work and to maintain access to employment with others also brings benefit from resources otherwise not available
	Knowledge	Knowledge and information can bring direct benefits from resources. Ideological controls and discursive practices also shape who can benefit from which resources	Information about prices, education, expertise, cultural taboos, ethics. Discourses, for example about the value of getting a job over cultivating the land
	Authority	Individuals or institutions given authority influence who benefits from which resources as nodes of direct or indirect control	Laws, permits, lobbying, favors, allocation of labor opportunities, direct allocation of resource use rights
	Identity	Identity or membership in a group can determine who can benefit from which resources	Age, gender, ethnicity, status, profession, place of birth, historical claims
	Social Relations	Social relations are key to all mechanisms of access	Friendship, trust, kinship, reciprocity, patronage, dependence
	Distance	Physical distance limits or facilitates access	Land that is close enough to walk to and from easily in a day is more accessible for agriculture than land far away

except in a footnote that says:

For losses that cannot easily be valued or compensated for in monetary terms (e.g., access to public services, customers, and suppliers; or to fishing, grazing, or forest areas), attempts are made to establish access to equivalent and culturally acceptable resources and earning opportunities. (World Bank 2001: 3, endnote 11)

How 'attempts to establish access' are to be made is unclear. Formal entitlement to resources provided through the national government in the form of compensation for resettlement, are ineffective if access to resources is denied in practice (Sikor and Lund 2009). In a study about access to resources in the LNP, Witter (2010) found that fear of losing access to and especially control over resources was one of the main reasons that residents were resistant to resettlement.

The study site and context

The Limpopo National Park (LNP), located in Gaza Province in southern Mozambique, forms part of the Great Limpopo Transfrontier Conservation Area (GLTFCA). The GLTFCA connects the Kruger National Park in South Africa, with Gonarezhou National Park in Zimbabwe and Zinhave, Banhine and Limpopo National Parks in Mozambique. Of the 27,000 people who reside within the borders of the LNP, 7000 live in villages along the Shingwedzi River that runs through the centre of the park. These villages were designated for resettlement outside the park's boundaries in 2003, after the establishment of the park (Milgroom and Spierenburg 2008).

The South African NGO, Peace Parks Foundation (PPF), was the primary promoter of the establishment of the new transfrontier conservation area (TFCA) but major funding for the creation of the LNP and for resettlement was provided by the German development bank Kreditanstalt für Wiederaufbau (KfW) (Wolmer 2003; Duffy 2006; Spierenburg and Wels 2006; Milgroom and Spierenburg 2008). Simultaneously, the WB funded the TFCAs and the Tourism Development Project that was intended to support the development of biodiversity conservation and tourism in three TFCAs in Mozambique (Limpopo, Lubombo and Chimanimani) (World Bank 2005). Because of KfW's involvement in the LNP, the WB project focused mainly on the other two national parks within the GLTFCA in Mozambique but it maintained a role in monitoring developments in the LNP and specifically monitoring resettlement. The World Bank Operational Policy for Involuntary Resettlement (WB OP 4.12) was adopted as the guiding framework for the resettlement initiative.

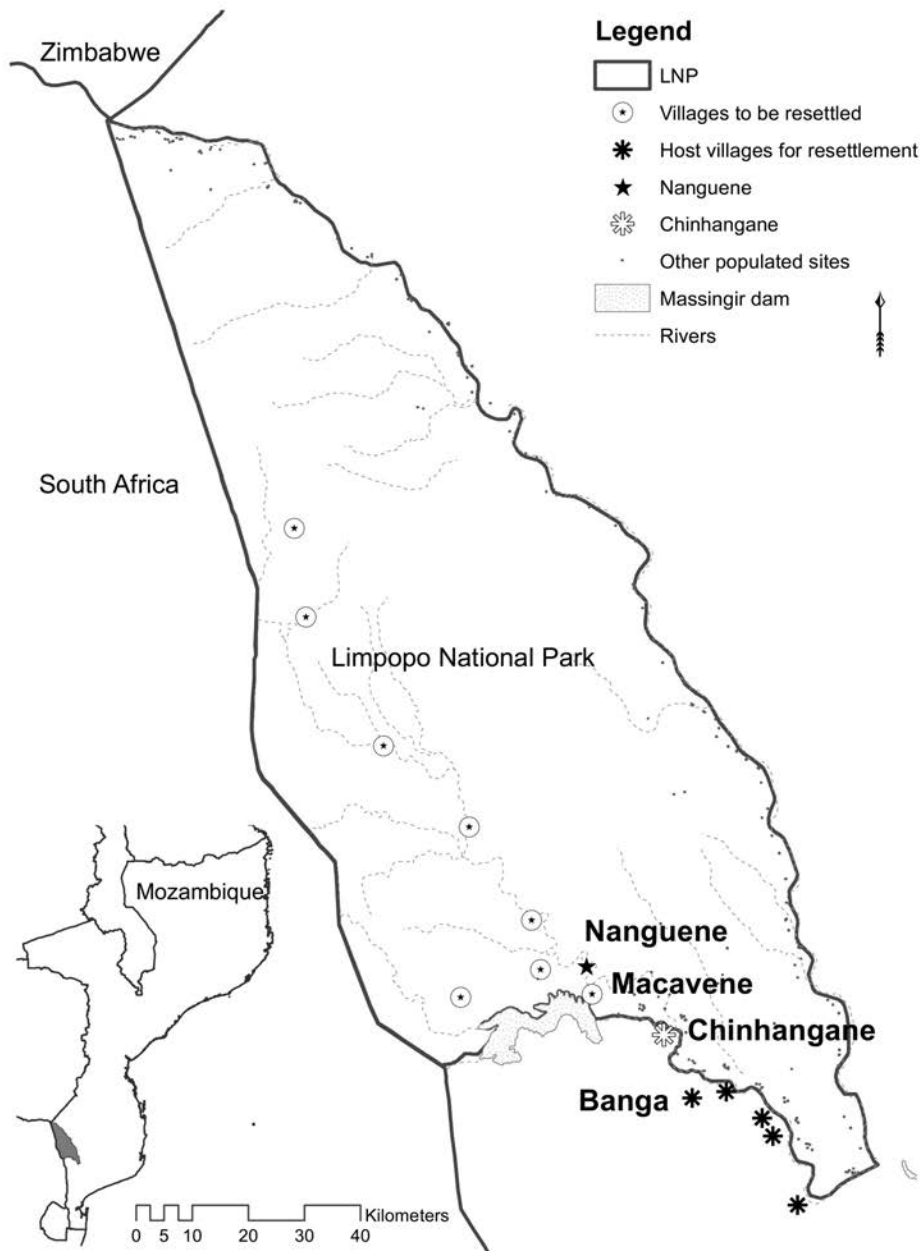


Figure 6.1. Map of study area, highlighting the location of the villages to be resettled, their proposed resettlement location (host villages) and the four villages involved in the pilot resettlement project. Nanguene was moved to Chinhangane in 2008. (Map credit: J Milgroom)

A pilot project involving the resettlement of two villages, Nanguene and Macavene, was intended to establish precedents for the resettlement of the remaining six villages. Nanguene, a small village of approximately 70 people, was resettled in 2008 as a new neighborhood of the village of Chinhangane that lies a short distance outside the park boundaries. Macavene, a village of more than 1000 residents, was to be resettled as an independent village next to the village of Banga but to date has not been resettled (Figure 6.1). The compensation package for resettlement included one brick house per nuclear household, assistance with materials to rebuild additional houses, 1 ha of arable land per nuclear household, compensation in cash for remaining land lost, fruit tree saplings, seed and a small amount of cash to ease transition (MiTur 2007).

All land in Mozambique belongs to the state. A law was passed in 1997 that recognizes customary tenure and requires approval by the community for use of village land by external parties, but no land can be purchased. Residents in this area depend heavily on natural resources for their livelihoods (Milgroom and Giller forthcoming). Agriculture and livestock rearing are the most important activities. Most residents were born within the area but have experienced a turbulent history of upheaval because of floods, disruptive social policies and war (Lunstrum 2007). Many residents have connections to South Africa because of historic labor migration to mines, current cross-border trade and having moved there during the civil war, often leaving relatives behind when they returned (Rodgers 2002; Norman 2005). While they have moved many times within the Massingir area, their sense of connection to the land within the park has not diminished, partly because access to resources is heavily dependent on one's place of birth or that of one's relatives (Witter 2010).

METHODS

Analysis of quantity and quality of natural resources

We assessed the quality and quantity of the natural resources in the pre-resettlement location of Nanguene (23°47'S, 32°07'E) and in the post-resettlement location of Chinhangane (23°54'S, 32°15'E) using a variety of methods. We chose to analyse the quantity and quality of water, agricultural fields, grazing and forest resources because these were ranked to be the four most important natural resources by the resettling residents (Milgroom forthcoming).

Spatial data analysis

A land cover map developed by PPF, based on multi-season Landsat TM imagery from 2005 and 2006, was used to determine areas covered by different types of vegetation within and around each village (Geoterralmage Ltd 2008). The accuracy and the relevance of the classification used in the map for local resource use was validated

through ground-truthing, as described for each resource below. The boundaries of the villages were determined using a combination of spatial data collected while walking with village residents, discussions about the boundaries with village elders, and through secondary sources. The boundaries of Chinhangane traditionally have been contested and are not legally delimited, but the approximate boundaries recognized by the villagers were used for our study. The boundaries of Nanguene were not legally delimited, contested, nor well-known locally; therefore, for the purpose of this study, we defined its boundaries based on the areas of resource use. Spatial data were collected while accompanying residents in their daily activities using GPS (Garmin GPSMAP 60) and processed using ArcGIS 10.

Agricultural fields

To assess soil quality we took soil samples (0 - 20 cm) in Nanguene from three different cropping areas. Soil was tested for pH in water using a 1:1.25 soil to solution ratio, cation exchange capacity (CEC) using the ammonium acetate method (Reeuwijk 2002), texture using the modified pipette method (Gee and Bauder 1986), % soil organic carbon (SOC) using the Walkley-Black procedure (Black 1965), total nitrogen (N) using the Kjeldahl method (Bremner and Mulvaney 1982), phosphorus (P) by Olsen extraction (Olsen et al. 1954), potassium (K) by flame emission spectrophotometry (Reeuwijk 2002). For Chinhangane, soil analyses were provided by the Mozambican Institute for Agricultural Research (IIAM).

To determine the total area of cropped land, we walked the perimeter of 282 ha in the major cropping areas in Nanguene and Chinhangane in 2009 and used these spatial data to validate the land cover map for agricultural land. Of the total area, 35% of waypoints corresponded with the dryland agricultural fields class, and 31% with the 'wetland seepage/pan' class (for explanations of classes see Table 6.2). We confirmed that the residents had fields on the often dry wetland seepage/pan areas and therefore we joined these two classes to represent the total area with agricultural fields. The remaining 20% fell in open woodland and bushland potentially indicating clearing of forest between 2005, when the images were taken, and 2009, when ground-truthing was done.

Whether the area available for cropping in the post-resettlement location was sufficient for both the resettling and host villagers was determined by dividing the total area judged to be 'adequate' and 'moderately adequate' for cropping, as determined by Rural Consult (Rural Consult 2008: 39) by 1.25 ha per person. This value was determined based on the area necessary for a household to be food secure given the rainfall variability of the region (Milgroom and Giller forthcoming).

Grazing

To determine the quality and quantity of grazing resources in both locations we walked with local shepherds along their normal routes in the dry (October) and rainy season (January) in Chinhangane, and in the dry season only in Nanguene, recording the routes using GPS. Quadrats of 0.25 m² were placed every 100 steps along the route and standing biomass (excluding bushes or trees) in each quadrat was collected. The fresh weight of the collected biomass was recorded in the field and dry matter was attained after drying the samples in the laboratory (g/0.25 m²). The distance from each grazing area to the village, and to water holes for the livestock, was measured.

We consulted studies on species composition and grazing quality to determine overall the grazing quality of each land use type defined by the land cover map. We overlaid 231 points from the recorded grazing routes to validate the land cover map for accuracy. Of these points, 172 (74%) corresponded to the 'open woodland/ bushland' class, and another 24 points (10%) to the 'bushland and thicket' class. These are the classes we used to calculate grazing area (explanations of classes under Table 6.2). Bushland and thicket and seasonal bushland and thicket were considered to have higher quality grazing than open woodland/bushland because of the greater prevalence of high value grazing species (Stalmans et al. 2004; Rural Consult 2008; Elderman 2009).

To determine whether or not the grazing area in the post resettlement location was sufficient for the livestock from both Chinhangane and Nanguene, we calculated carrying capacity based on an annual production of dry matter (DM) of 1560 kg/ha (Timberlake and Reddy 1986; Timberlake 1988; Pagot 1992; Mfitumukiza 2004). We considered that each tropical livestock unit (TLU) weighing 250 kg needs 2281 kg of dry matter per year (Badini et al. 2007). We also considered a 50% use efficiency of the grazing resources (Timberlake and Reddy 1986).

Forest

Previous studies carried out in the vicinity on the human use of forest resources provided the basis for our calculations of quantity and quality. We used the results from Verbeek (2009) to identify the most important species used for food, construction, and firewood. These results were verified through comparison with those of Witter (2010) and through our own interviews and observations. We took into consideration all the species mentioned by more than 75% of respondents during a free-listing exercise (Verbeek 2009). We associated each of these species with a land cover class based on their reported habitats (Wyk and Wyk 1997; Palgrave and Palgrave 2002; Schmidt et al. 2004) and related studies (Stalmans et al. 2004; Rural Consult 2008; Verbeek 2009). Verbeek (2009: 41) found that the riverine forest has a significantly higher number of

species than the upland forest; therefore, we used the area of riverine forest as a proxy for 'area with elevated biodiversity'.

Understanding rules and norms of access and accessing natural resources

We carried out this research from December 2006 to June 2010 within and around LNP. To investigate access we employed participant observation and repeated in-depth interviews in the village of Nanguene for 24 months before resettlement. We observed livelihood activities and documented the residents' negotiations with LNP park staff and the host village about the conditions for post-resettlement (Milgroom et al. forthcoming). During this time we investigated the rules and norms of access by asking men and women in the resettling and host village how they got access to each field and grazing area they used, whether the resource was shared with the household, the village or other villages. We also observed and participated in collection trips with women to get water and fruits and on fishing expeditions and with men to get construction materials. In each case we asked how they knew they could use the resources they were using. We also inquired about how we would access all four resources if we were new to the village. We compared our results with other studies carried out in the area. After resettlement we continued working with the village in the resettlement location of Chihangane, recording how each household accessed resources in the new location. In this period we systematically asked the same questions that we did before resettlement and followed up on cases where people had difficulty accessing resources, with in-depth interviews. We collected and analysed LNP documents associated with the resettlement project, and carried out repeated, in-depth interviews with LNP staff.

RESULTS AND DISCUSSION

Quantity and Quality of resources in pre- and post-resettlement locations

At first sight, the total area and the quality of resources were similar between the pre- and post-resettlement locations. However, there were differences in the quantity of higher quality resources and the quantity of resources per person and per animal unit. The total area per village was larger for Chihangane (post-resettlement location) than Nanguene (pre-resettlement location) but the area covered by high-quality grazing land and by riverine forest was much smaller (Figure 6.2, Table 6.2). The number of people and livestock inhabiting Chihangane before resettlement was seven times more than in Nanguene, therefore, the quantity of resources per person and per animal unit, assuming equal access, was much less in Chihangane than in Nanguene, even before the arrival of the resettled villagers (Table 6.2).

In Chihangane, water was available all year around from two sources. One source was

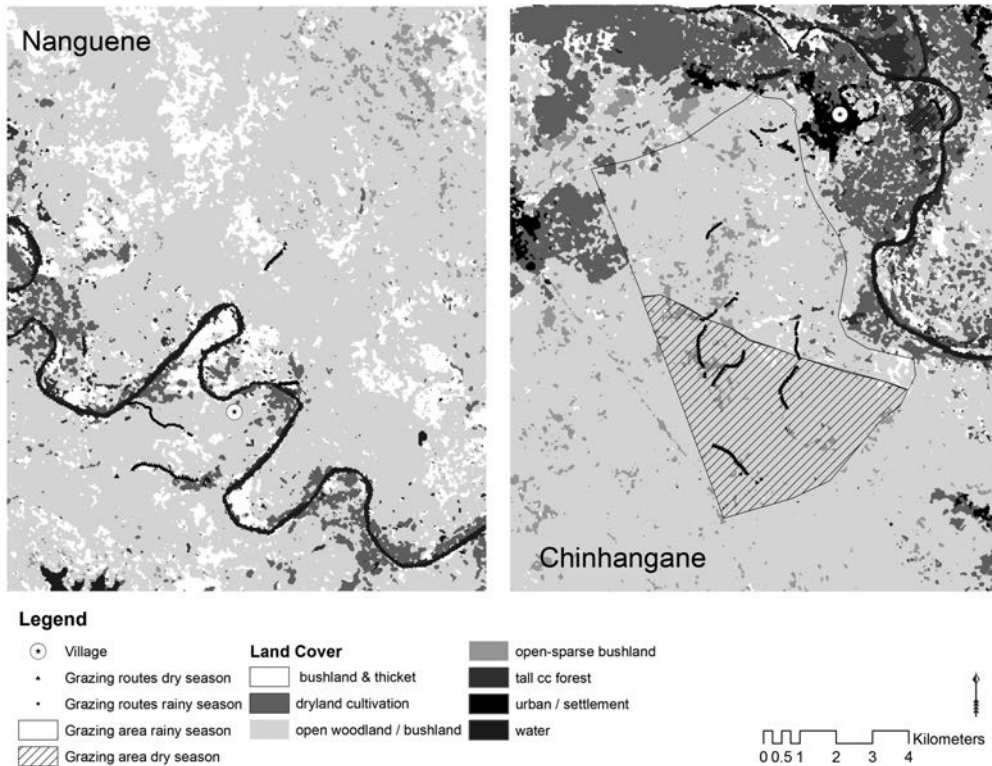


Figure 6.2. Land cover maps for the Nanguene (A) and Chihhangane (B). Grazing routes and areas in the dry season are indicated for both villages, and in the rainy season for Chihhangane. The village boundaries are indicated for Chihhangane because they effectively limit where people can take their livestock to graze. The village boundaries for Nanguene are not indicated because they did not limit grazing. The areas covered by cultivated land, open woodland / bushland, and urban settlement are larger in Chihhangane than Nanguene. (Map credit: J Milgroom)

a pump in the resettlement neighbourhood, with salty water not suitable for drinking or cooking. The other was in the established village of Chihhangane, which had sweet water. Resettled residents have to travel 1.5 km farther to the sweet-water pump than they had travelled for water pre-resettlement.

There was no obvious difference in soil quality between the two villages. Both villages had adequate soil nutrient concentrations for cropping. The area of open fields was less per person in Chihhangane (0.91 ha/person) than in Nanguene (3.32 ha/person). The area of potentially cultivatable land as defined by Rural Consult (2008) occupied by existing fields (506 ha) and forest (889 ha), measured 1395 ha in Chihhangane. Based

FOREST	quantity quality	P (mg /kg)	279(19.7)	39.73(14.6)	
		K (cmol/kg)	1.08(0.73)	1.76(0.6)	
		CEC (cmol (+)/kg)	18.6(4.95)	38.35(9.66)	
		pH	6.6(0.24)	7.25(0.42)	
		Cleared potentially irrigable land (km along river)	1.3	1.8	
		Not cleared potential irrigable land (km along river)	6	13	
		Total area of forest (ha)	5763	74.8	6504
		BIODIVERSITY (area of riverine forest) (ha)	114	1.48	186
		Area for collection Nhiri, Ntoma, Nkuwa (food) (ha)	1084	14.09	381
		Area for collection Nkanyu and Nwambo (food) (ha)	4753	61.74	6167
		Area for collection of firewood and construction Materials (ha)	4660	60.52	5750
					10.29
					-51.48
					-64.63
					-1.19
					-13.49
					-52.04

*Original land cover and vegetation classes from the Great Limpopo Transfrontier Park (GLTFP) land cover map (Geoterrimage Ltd, 2008). Class names and descriptions as followed. Wetland seepage / pan: Vegetated wetland areas that are less permanent in nature than the floodplain class, which appear to be associated with riparian and seepage zone, and pan landscape features. Tall closed canopy (cc) forest: Closed canopy tall forest (or very dense woodland areas (i.e. multiple vegetation strata likely), where tree canopy is likely to be greater than $\pm 70\%$. Dryland / subsistence cultivation: Rainfed subsistence / semi-commercial cultivation activities (predominately field mosaics but may include scattered dwellings) Urban / settlement: Areas of concentrated urban or settlement patterns. Closed canopy (cc) bushland & thicket: Closed - medium canopy short bushland and / or thicket areas (i.e. multiple vegetation strata likely), where shrub and bush canopy is likely to be greater than $\pm 70\%$. Open woodland & bushland: Open canopy woodland and / or bushland , where the tree and bush canopy is likely to be between 40 - 70 %. Closed canopy (cc) bushland & thicket (seasonal): Closed - medium canopy short bushland and / or thicket areas (i.e. multiple vegetation strata likely), where shrub and bush canopy is likely to be greater than $\pm 70\%$. Class shows a distinct seasonal canopy variation compared to the cc bushland and thicket class.

on a need of 1.25 ha per person (Milgroom and Giller forthcoming), this area could accommodate 1116 people if all the forest area were cleared. Currently, in total there are 636 inhabitants including the resettled residents, suggesting there was enough cropping land in Chinhangane to accommodate residents from both villages without having to cut down all of the existing forest.

In the rainy season forage is available close to the village, but livestock walk increasingly longer distances during the dry season to find grazing. There was no significant difference between the villages in standing biomass per ha of grazing grass in the dry season in the grazing areas used (kg/ha). However the grazing areas and water points were three and five times further away, respectively. The areas near the village of Chinhangane had already been overgrazed and were no longer suitable for grazing until the next rains (Figure 6.2). Even in the rainy season the distance to grazing resources in Chinhangane was greater than in the dry season for Nanguene (Figure 6.2). There was four times more standing biomass per animal unit in Nanguene because of the elevated numbers of livestock in Chinhangane (Table 6.2). The area of high-quality grazing was five times greater in Nanguene and 26 times greater when expressed per animal unit. We estimated that the grazing land in Chinhangane can accommodate 2160 TLUs; Chinhangane and Nanguene residents combined owned 1131 TLUs after resettlement. Therefore, the total grazing resources in Chinhangane were sufficient to support the livestock from both villages.

The tree species most important for food were, in order of importance (local names in parenthesis) were: *Sclerocarya birrea* (nkanyu), *Berchemia discolor* (nhiri), *Diospyros mespiliformis* (ntoma), *Manilkara mochisia* (nwambo) and *Ficus sycomorus* (nkuwa). Important species for construction were: *Colophospermum mopane* (xanatsi/gunwe) and *Androstachys johnsonii* (simbiri), and for firewood: *Colophospermum mopane* (xanatsi/gunwe) and *Combretum apiculatum* (xikukutse). Three of the trees used for food were found in the riverine habitat, and in the bushland and thicket forest, greater areas of both of which were found in Nanguene (Table 6.2). Areas for the collection of timber for construction and firewood were larger in Chinhangane. However, the total area used for collection of forest resources, the area of high biodiversity, and areas for the collection of key species for food, construction and firewood, were all larger per person in Nanguene (Table 6.2).

Rules and norms of access to resources

Water, a resource fundamental to daily survival, is shared by everyone. Residency or group membership is not a requirement to access water. A fee may be charged to those who can pay it to cover the costs of the maintenance of the well.

Food production is central to local food security and there is a general culture of inclusiveness and flexibility about access to land, as is common in other places in Africa where land is not constrained (Shipton 1994). This undertone of solidarity, in theory provides everyone with as much land as they need to produce food for their household (see also Shipton and Goheen 1992; Witter 2010). Even if someone is not from the village in which she or he wishes to cultivate, it is common practice to borrow land and longer term access to fields can be attained through the village chief (see also Leonardo 2007). Survey results from October 2008 revealed that 126 people out of the total population of 559 were living in Chinhangane in order to use the fertile soils of the river valley, although they were not from the village. These individuals came without their families to cultivate on borrowed land, and at the end of the season returned with their harvest to their original village.

The agricultural fields of the permanent residents of Chinhangane were either inherited, opened, borrowed or recieved as a gift (see also Witter 2010). Out of a total of 154 fields owned by 63 households interviewed, 58% of the fields were inherited, 34% were opened by the owner, 2% were borrowed and 6% had been received as a gift. Only the male household heads or widows had inherited fields, while all categories of owners except widows or female children opened fields.

Grazing land is a resource shared by the whole village (see also Elderman 2009). Village boundaries are supposed to be respected although boundaries are often contested. Agricultural fields, although privately managed during the cropping season are common grazing areas when there are no crops standing. The leader of the village, together with the village elders, decides when cattle are allowed to graze freely.

Forest resources are also shared by the whole village. Fruits, firewood, construction wood, plants, fish or game can, in theory, be collected by anyone in the natural forest. However, some forested areas are re-growth on former cropped land, and some natural forest areas belong to a particular household for future use, or to a charcoal-maker. In these areas, collection of some resources is restricted and permission must be obtained (see also Witter 2010).

Accessing resources post-resettlement

We found that there were differences among the formal access to resources presumed by the government as part of compensation for resettlement, the informal rules regarding access to resources and access in practice. In the following sections we provide examples of how these rules of access played out as resettled residents engaged in accessing resources.

Accessing water

Waiting for water

In Chinhangane, there was only one pump with sweet water for the whole village for which residents had to pay a monthly fee. Fetching water required the time that it took to wait in line. Often, when the lines were very long, the women would leave their jerry cans to mark their place in line. Nanguene women had their jerry cans stolen or removed from the line when they did this on various occasions and therefore did not dare to leave them alone. This obliged them to remain in line for longer. Traditionally only women fetch water—men collect water only when no women or child is available to do so.



Figure 6.3. Women fishing in groups with nets in the Shingwedzi River (Photo credits: J Milgroom)

Catching fish

In Nanguene women fished with nets two to three times a week in the small pools of water in the river bed (Figure 6.3). In Chinhangane, they were living next to a river that never went dry and that had more fish than the Shingwedzi River. However, because of the currents and depth of the water, the women could not enter the river with their nets. Fishing in deeper water was considered a man's job, but men rarely fished unless it was for commercial purposes, meaning in practice that the resettled residents did not have access to fish for consumption in their new location.

Accessing fields

A site of traditional ceremonies

In compensation for resettlement, each resettled nuclear family was allocated 1 ha of land in Chinhangane. An area of 18 hectares was cleared by the LNP as one contiguous block for the 18 nuclear families from an area that was previously dense forest. After the fields were officially handed over, Nanguene residents discovered that they encompassed a site with traditional spiritual value for Chinhangane residents. A legendary healer had been crippled by ancestral spirits while performing a ceremony at this site. Chinhangane residents believed that anyone who planted crops there would also become crippled. The LNP staff responsible for resettlement reported that

they knew that the plowed land contained a place of ceremony for Chinhangane but they had still accepted the land as the site for Nanguene's fields. The sacred site—in the center of someone's field—was simply marked with cinderblocks. It was widely believed by the Nanguene villagers that Chinhangane offered them this location precisely because it would not be used by people from Chinhangane. Resettled residents who had secured other fields only planted in the fields allocated by the park last, or did not plant them at all. Households that had to plant on these fields did so in fear.

Elusive irrigated fields

Infrastructure for irrigation had been discussed as one option for compensation but it was not part of the final package. Nonetheless, after resettlement the residents of Nanguene requested irrigated plots from WB and KfW representatives and the LNP staff attempted to secure a location for irrigation for the people from Nanguene. The leader of Chinhangane identified available land but later reneged on the offer. Similar transactions occurred five times, each time involving different people allocating or offering land and then reneging on their offer, over a period of two years. This occurred despite attempts by the district administrator and KfW representative to intervene. Interviews revealed that no one wanted to give up irrigable land to Nanguene and three years after resettlement none had been secured.

This can be explained by two phenomena. Firstly, although the leader of Chinhangane offered land in his village, grandchildren of the original owner protested the use of their land for Nanguene. The village leader is supposed to be able to make decisions about resource allocation on behalf of the collective, however, he may not have proprietorial rights, jurisdiction, or control of access to any individual's land (Shipton and Goheen 1992). He can allocate land that does not have any owner, but land without an owner is scarce. Secondly, when individuals offered land and then reneged, it was because they did not feel sufficiently recompensed. Ceding land to outsiders, even if the land is currently unused, potentially implies giving it up forever. Many people lend land to others, but mainly to people, for example family members, from whom they can reclaim or borrow land in case of need (Gengenbach 1998). The fact that they were requesting irrigable land, a restricted resource of considerable value, exacerbated the reluctance of Chinhangane to make any firm offers.

Only fields for family

The cropping system in Massingir is based on extensive farming of large areas (Milgroom and Giller forthcoming). Before resettlement, each household in Nanguene had 5 to 18 ha for cropping and field size was limited only by their capacity to clear and crop it (Gengenbach 1998; Witter 2010; Milgroom and Giller forthcoming). The one

ha provided as compensation for resettlement was not sufficient to fulfill household food needs and resettled households had to find additional fields on their own. The resettlement staff reported in interviews that Nanguene households would not have a problem doing so.

In the first cropping season many of the resettled households borrowed fields; some cleared the borrowed fields only to be evicted later, but none secured fields in Chinhangane on a permanent basis. A year and a half after resettlement, only half of the resettled households had secured permanent fields, which were significantly smaller than those they had before resettlement. Permanent access to fields was only achieved through family connections, marriage, by paying money or by requesting land from the leader of the neighboring village; no fields were secured through the leader of the host village. Those with family ties in the host village managed to access more and larger fields than others. The difficulty faced by some households in securing fields may have been the result of a response of the village to feeling that their resources were threatened by the newcomers (see also Gengenbach 1998). It was effectively a reassertion control over access to resources. Four months after resettlement, half of the households, including the leader of the village of Nanguene and all others that had no family connection with the 'owners of the land' in Chinhangane, went back into the park looking for cropland and for grazing. They were granted this land by the leader of a village inside the park who had kinship connections with the leader of Nanguene (Milgroom forthcoming).

Accessing grazing resources

A flexible notion of quantity

The establishment of the LNP created a ripple effect, attracting a range of new projects to the area. One of the first was a Community Nature Conservancy funded by the African Wildlife Foundation (AFW) to cover approximately 56,000 ha (Contour Project Managers 2006). This area included the land belonging to three communities and had been secured over a period of five years following the procedure in the 1997 land law (see also Lunstrum 2008) (Figure 6.4).

A project unrelated to the LNP was launched by the private company ProCana, a subsidiary of the Central African Mining Company, to invest 510 million US dollars to grow sugarcane in Massingir for ethanol production. The area chosen for this project overlapped with the land set aside for grazing for the resettled villagers from the LNP (Figure 6.4). This created a clash between the two mega-projects that in turn became a conflict between the Ministry of Agriculture (MinAg) and the Ministry of Tourism (MiTur). According to interviews with KfW and WB representatives, the WB halted

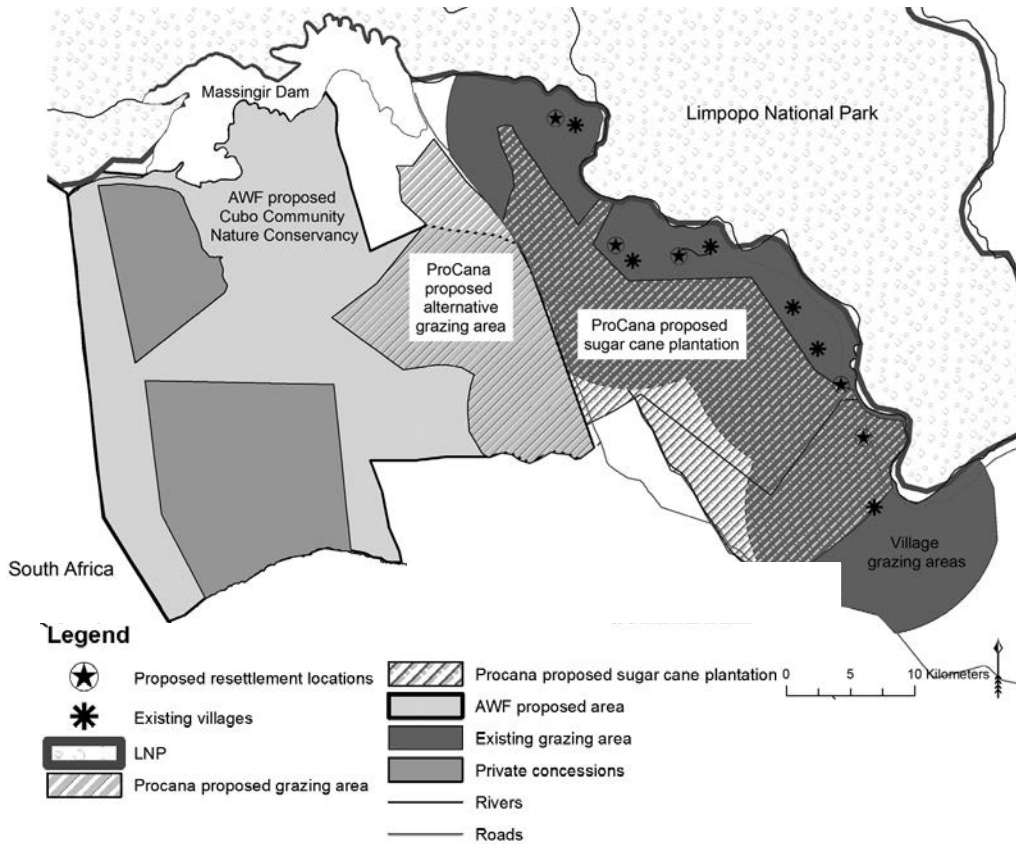


Figure 6.4. Overlapping land claims in Massingir district, Mozambique. The land secured for the AWF community nature conservancy overlapped with two existing private concessions. The concession given to ProCana overlapped with grazing areas for existing villages and the areas designated for resettlement of villages from the LNP. To compensate villages for lost grazing area, alternative land was identified in AWF's project site causing the community Nature Conservancy project to stop and AWF to leave Massingir in 2008. ProCana withdrew in 2010. (Map credit: J Milgroom)

resettlement until the land issue was resolved. In September 2007 the Economic Council of the respective national ministries was convened to resolve the conflict between MinAg and MiTur. According to the revised contract signed between MinAg and ProCana in 2008, ProCana agreed to compensate the resettled communities for grazing land they would develop for sugarcane by providing alternative grazing. However, the alternative area identified by ProCana was land on which AFW was planning their project. ProCana promised to improve the grazing potential in the alternative area and to establish an intensive grazing system, complete with boreholes, fences and new varieties of cattle. AFW was offered a significantly less desirable piece of land that was not feasible for developing a conservancy; they closed their office in Massingir and abandoned the project in late 2007 (Figure 6.4).

Before KfW and WB agreed to continuing the resettlement project, they requested studies to determine if there was sufficient land to support both ProCana and the grazing needs of the current and resettling residents in the pilot project. Three versions of the first consultancy report were produced in which the area of land estimated to be available differed significantly (Table 6.3). The conclusion of the first version was that there was enough land to support the cattle belonging to the host and resettlement villages of the pilot project, i.e., Nanguene, Chinhangane, Macavene and Banga, but it also noted that after one year there would no longer be enough land because the herds were expected to grow through natural reproduction (Escrivão 2007). This version calculated the area of available land to be 20,000 ha. The second version gave a significantly reduced figure for the total area available (8000 ha) and concluded that there was insufficient land even for the existing livestock (Escrivão 2007). The third version concluded that there was enough land at the time of resettlement and for the future for the villages of Nanguene and Chinhangane, but that there would not be enough for Macavene and Banga, and therefore the additional alternative land where AWF had its project would be needed (Escrivão 2007). This last version was presented to the WB representatives, who gave their approval to continue the project.

Thereafter a second study was carried out, in 2008 (Rural Consult 2008). The report's authors measured the land available for grazing, excluding the land proposed to be used by ProCana, and concluded, embedded in a paragraph in the final chapter of the report, which was only in Portuguese, that there were only 1621 ha available for Chinhangane and Nanguene and that this could satisfy only 50% of their livestock's needs (Table 6.3). In December 2009 ProCana officially abandoned their project and withdrew from Massingir. In 2011, however, a South African company linked to Tsb Sugar announced plans to re-launch the failed ProCana project as what will be known as the Massingir Project for Biofuel Development (Esi-Africa 2011).

Cattle theft

Inside the park Nanguene residents had experienced little cattle theft. In the dry season, when the good grazing areas were further away from the village, the herds of cattle were left alone in the forest to graze for a week, sometime for the whole season. In Chinhangane, however, cattle theft was a major problem and residents did not leave their cattle unattended. This implied that a household either had to hire someone to graze the cattle or keep a child out of school. Households that did not have children of appropriate age to graze cattle, or that could not afford to hire someone, effectively did not have access to grazing resources.

Table 6.3. Two consultancies were carried out to determine available land for grazing in post-resettlement, one in December 2007 before funds were stopped due to overlapping land claims, and one in May 2008 after the project had already been allowed to continue. Conclusions about available land differed between versions of the same consultancy and between the two consultancies. The third version of the first consultancy (shaded in grey) was the one presented to the World Bank to obtain approval for the project to continue.

Date	Consultancy report version	Village	Grazing land available (ha)	Carrying capacity (AU)	Total AU requirement after resettlement	Calculated balance (AU)	Final conclusion
December 2007	1	Chinhangane + Banga	20,000	2875	2427	+448	The current grazing area is enough to support resettlement, but after one year there will be a deficit of land because of growth of herds
	2	Chinhangane + Banga	8000	1375	2426	-1051	There is not enough land to support the existing livestock before resettlement
	3	Chinhangane + Banga	7300	1137	1015	+122	There is enough land to support livestock from Chinhangane and Nanguene
May 2008			3000	637.5	1412	-774	There is not enough land for the livestock of Banga and Macavene, but alternative land will be made available (20,000 ha)
	1	Chinhangane	1621	565	1131	-566	Area available for grazing only covers 50% of the needs of the livestock in Chinhangane with Nanguene
		Banga	2630	1106	1568	-462	Area available for grazing only covers 60% in Banga with Macavene.

Accessing forest resources

Resettling with construction material

In addition to receiving a brick house, resettled residents were to receive construction materials to re-build the additional houses typically constructed around their compounds. Compounds are commonly composed of between three and ten houses, depending on the size of the family. The area around Chinhangane did not have enough forest suitable for harvesting construction materials (*Colophospermum mopane* was the preferred tree), partly because of charcoal production that began in 2004 in earnest when the forest was divided into plots and allocated to various charcoal-making teams. The trees that were still available were not accessible for construction because of their high value for charcoal. Nanguene residents were informed that they should cut all the posts that they would need in the forest near Nanguene before resettlement. We recorded the number of posts prepared for construction of houses after resettlement, and the size of the posts that each household in the resettling village cut down. In addition, they dismantled their granaries, houses and kraals and gathered still usable material to be transported to the resettlement site (Figure 6.5). In total 2041 new trees were cut and 976 old posts were kept as of October 2008.



Figure 6.5. Resettling residents cutting down new posts, dismantling existing structures and transporting construction materials to the resettlement site. Posts for construction of houses, corrals and granaries were transported on trucks because of lack of available construction materials in the post-resettlement location. (Photo credits: J Milgroom)

'Cultivating kinship' through nkanyu

Resettled residents were provided with fruit trees to replace those in their previous homesteads but they were not compensated for loss of access to common resources such as the forest and non-timber forest products (MiTur 2007). They were expected to access these resources on the same terms as the existing residents of the area.

After resettlement, however, resettled residents expressed their despair about not having access to a particular species of high cultural importance, the nkanyu tree (*Sclerocarya birrea*). These trees are located primarily on currently cultivated or former

fields and are accessible only to the owners or certain family members (see also Witter 2010). Since Nanguene residents had been allocated land that did not have *nkanyu* trees, and had not yet established rights to collect fruit from the land of distant family members in the host village, they had no way to collect *nkanyu* fruit. *Nkanyu* fruit is used to make an alcoholic beverage for a harvest ceremony (Jan –Feb). The seeds are collected and eaten throughout the year as an important source of food during the dry season when other sources of protein are scarce. However, interviews revealed that the despair expressed by residents was not about the fruits themselves, but about the loss of the opportunity to share in the cultural ritual of making and drinking *nkanyu* beverages. Traditionally each household collects fruit, makes the drink and invites friends and neighbors to share it. The next day another household will do the same, and everyone enjoys the drink from the fruits of each other's trees. The drink is not supposed to be sold, therefore the only way to access it is to make it or through social connections. Because of the low density of trees in the natural forest, without *nkanyu* trees on their new fields, resettled residents were not able to make their own; and they were not invited to join in others' drinking parties. This is because the *nkanyu* ceremonies are held in honor of the ancestors to reaffirm relationships within a lineage group (Witter 2010: 259). This represented a missed opportunity to integrate with the host village. Although some residents of Nanguene had familial relationships in the host village, others did not and needed to 'cultivate kinship', or the kind of relationships also called 'bond friendships' by Colson (1971) that could facilitate access to resources via other means (Gengenbach 1998). Some households did this through marriage, and others through developing new, or rekindling old friendships or family ties.

Finding firewood

The higher population density in the resettlement area limited the amount of firewood available. The additional time that women required for collecting firewood each day was considerable. This was exacerbated by long waits to get water, which sometimes left them without enough time to collect firewood and unable to cook so would go to sleep hungry. Ownership of a cart facilitated access to firewood because they could collect large amounts of firewood and from deeper in the forest where it was more abundant.

Resource use is shaped by quantity, quality and access

Our findings based on spatial analysis of available resources suggest that there were enough grazing resources and area for agricultural fields of sufficient quality in the resettlement location to support both the host and resettling village (without Pro Cana). However, by taking access into consideration, this conclusion changes dramatically. After resettlement, despite the availability of sufficient resources, and the

Table 6.4. Mechanisms of access operating in post-resettlement as residents of Nanguene attempt to gain and maintain access to resources, in Chinhangane, Masingir. Some mechanisms also serve to limit access to resources.

	Mechanism	Water	Grazing	Fields	Forest
Rights based	Legal	A new well was built for Nanguene in compensation for resettlement	Land law recognizes customary tenure by requiring delimitation, community consultation and agreement to the use of their land	Agricultural fields were given to each household in compensation for resettlement to each household to	No compensation for loss of common property after resettlement
	Institutions	Equal access to water for all	Equal access to grazing resources for all	Access to fields provided to those born or married into the village or if requested from the leader	Equal rights to forest products except for some resources located on another person's current or old field
	Illegal	Theft and removal of jerry cans from the line at the well limited access to water	Land law procedure, adhered to by AWF was not by ProCana. Cattle theft limits access to grazing areas.	Some resettled residents returned to an areas inside the park to open new fields	Deforestation by illegal charcoal producers, limited access to forest for other uses
Structural and relational	Technology	Well and pump provides access to water where there are no other sources or water is far away	ProCana used GPS, maps, and a tractor to mark and claim land	Infrastructure for irrigation allows for agricultural production without rain. This added value of the land close to the river limited access to land for irrigation for Nanguene.	Cart for transporting wood, fishing line for getting fish from river facilitates access to these resources
	Capital	Fee for residents to use water from the well	Used to negotiate rights of use of land with government, village leaders, and to stake claims on land (payment of tractor, etc). Capital (a small animal per year) used to hire herders to protect livestock from theft.	Some households paid fees to get access to dryland fields both in Chinhangane and back inside the park.	Used to get licenses to produce charcoal, to buy fishing tools
	Markets	If the well is broken, those with a cart or tractor can sell water	Biofuels boom led to ProCana's investments.	Fields cannot be legally purchased, limiting access for those who did not have necessary social relations to access them through customary mechanisms	--

Labor	Time to wait in line at the well for water	ProCana controlled potential labor opportunities and used them to bribe district government and gain support. Available household labor to protect from cattle theft facilitates access to grazing areas	Labor available to clear fields increases access to land for agricultural production	Labor of preparation of <i>nkanyu</i> drink gives access to social reciprocation, favors. Labor necessary for collection of firewood and construction material in faraway locations
Knowledge	--	Tinkering with information about delimitations increased possibility to access land	Knowledge of the healer who was crippled on the land where fields were allocated limited people's capacity to cultivate there	Information about where fruit trees that are not on someone else's field are increases access to fruit. Knowledge about distant kinship ties with a resident of the host village can facilitate access to <i>nkanyu</i>
Authority	--	Ministry of Agriculture, Ministry of Tourism, national, provincial, and district administrators and village leaders all involved in granting ProCana rights to village grazing land	District administrator, park, local authorities incapable of securing land for irrigation for Nanguene. Leader of Chinhangane also refused to grant more dryland fields to Nanguene residents	Park staff facilitated the cutting and transport of posts from Nanguene to Chinhangane
Identity	Only women get water. Resettled residents were targeted at the well	Important political figures supported ProCana and facilitated their access to land.	For being a member of the resettling group access to land was both facilitated (1 ha per household allocated) and limited (no one wanted to provide Nanguene with land for irrigation)	Identity as a resettled person limited access to <i>nkanyu</i> ceremonies
Social Relations	Friends or family members protect other's jerry cans and place in line at the well	Patronage relationships between leaders and government officials and between government officials and ProCana facilitated access to land for ProCana	Kinship ties provide preferential access to land	Nkanyu ceremonies key to integration (social lubrication) and get access to other resources
Distance	Long distances to water limit the amount of water a household can use	Grazing resources far from water points limiting the quality grass that the livestock can feed on	Accessible fields were found outside the host village, too far to travel on a daily basis and led some resettled residents to move back into the park	Distance to firewood and construction materials limited access to those resources

apparently inclusive rules and norms of access in the host village, the resettled residents faced major challenges to access the resources they needed (Table 6.4). Sometimes this was because of the quantity of resources, sometimes it was with whom to exchange labor or livestock due to quality, other times because of access, but ultimately resource use is shaped by the relationships among quantity, quality and access.

Quantity

Quantity was the main limitation to the use of firewood and construction material. There was six times less area per person for collection of wood in the post-resettlement location and there were no longer sufficient trees in the vicinity for the needs of the village. This was evident in the massive transportation of posts for construction from inside the park to the resettlement site (Figure 6.5). Quantity is not as fixed as measurements might suggest; it is shaped by what is measured, the way that it is measured, who measures it and the way boundaries are determined. This was illustrated by the three versions of the same consultancy report that each presented different conclusions about how much land was available for grazing. It is also illustrated through our study—we measured area of land with a certain vegetation type, but it would have been more appropriate to count the number of trees of the type that people use, for example the nkanyu tree.

Quality

Quality was the main limitation to the use of the fields allocated by the park and of water in the tap provided in the resettlement neighborhood. The quality of a resource is socially-constructed, based on the intended resource use and who evaluates the quality; a culturally valuable resource has more gradations of quality when evaluated by a resource user than when evaluated by someone who is not familiar with the resource (Shipton and Goheen 1992). For example, park staff apparently did not believe that it would be a problem that the dryland fields provided in compensation for resettlement were cleared on land used by the host village for traditional ceremonies. Physically and legally the residents had been granted access to the fields but their fear of repercussions prevented their access to the land in practice. Park staff also considered the water in the well dug for the resettlement neighborhood to be of sufficient quality, but saltiness limited the residents' access to water—they preferred to walk two kilometers and wait in line for water. Perceptions of quality can change through access to new information or other social, environmental or economic changes. For example, until the people realized that their fields encompassed a site of traditional ceremonies, they were unafraid to plant there.

Access

Social factors limited access to grazing, dryland fields and nkanyu fruits. Grazing resources were available in the post-resettlement location in sufficient quantity, and appropriate quality. However, the risk of livestock theft, not an issue before resettlement, effectively restricted their access to these resources. Resettled residents could only graze their livestock if they had someone in the household who could protect the livestock from being stolen, the capital to pay a herder to do so, or the social relations for a herder. Similarly, there was sufficient land of adequate quality to be able to provide fields for the residents of Nanguene. In practice, however, only those resettled who had family ties in the host village were able to access fields readily (Milgroom, forthcoming). Rules of access to nkanyu trees prohibited collection, without permission, of the fruits from fields belonging to others.

Relationships among quantity, quality and access

Our findings suggest that resource use is shaped by the relationships between quantity, quality and access (Figure 6.6). The combination of the quantity and the quality of a particular resource sets the outside limits of the potential use and function of a resource. This, together with social contextual factors such as, but not limited to social institutions, cultural values, formal laws and policies and economic opportunities shape the informal rules and norms of access to that resource (Berry 1989b; Peluso 1996). Individual or household access in practice, or accessing, depends on the resource, the user, the season etc. (Shipton and Goheen 1992) and is mediated through mechanisms of access (Ribot and Peluso 2003). Examples of these relationships are provided below. Resource use then influences the quantity and quality of the resource. This was illustrated in the case of forest resources in Chinhangane. Because of the use of trees for charcoal making, there was insufficient quantity of wood for firewood and construction. Resource use also influences the wider social, cultural, economic and political contexts. The use of resources within the LNP as a habitat for wildlife led to the resettlement of people and the introduction of the WB policy for involuntary resettlement.

Two illustrative examples of the relationships between quantity, quality and access are that of securing area for irrigated fields and collecting nkanyu fruits. The quality of land influences the quantity of land necessary to attain a certain level of production. The total quantity sets the outer limit of land available for cropping. In Chinhangane there was land available along the river that was not being cropped because of its low quality for dryland cropping. When the resettlement staff from the LNP attempted to secure land for irrigation, however, the economic opportunities that became available from the option to irrigate contributed to a situation where accessing in practice differed

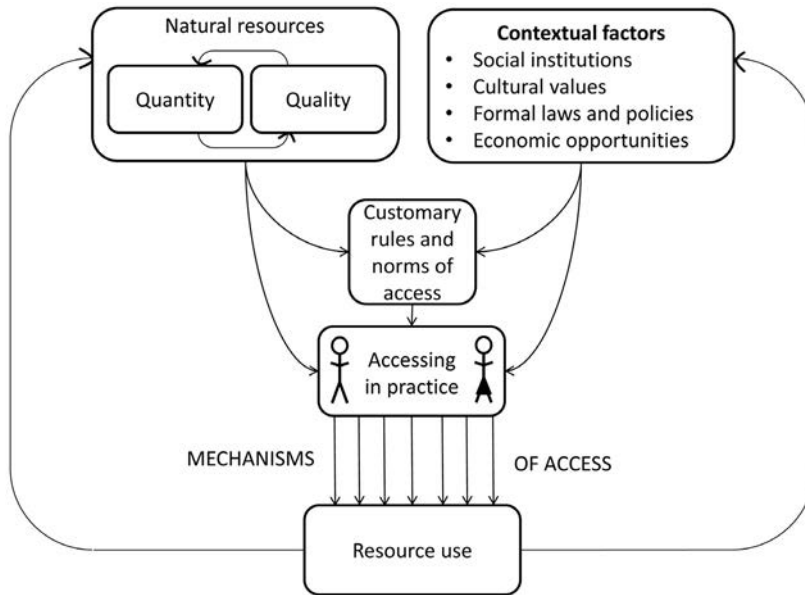


Figure 6.6. The combination of the quantity and the quality of a particular resource sets the outside limits of the potential use and function of a resource. This, together with the social institutions and cultural values, formal laws and policies and economic opportunities shapes the informal rules and norms of access. Individual or household access in practice, or accessing, depends on the resource, the user, the season, etc., and is mediated through multiple mechanisms of access. Accessing is different from resource use in that it can include accessing a resource for reasons other than resource use, but it ultimately determines resource use. Resource use then influences the quantity and quality of the resource as well as the social, cultural, economic and political contexts.

from the rules and norms of access. The rules and norms of access to land for cropping are generally inclusive, but because of the relatively small area (quantity) of available land suitable for irrigation (a quality of the land representing an economic opportunity) and the identity of the people requesting the use of the land as outsiders and newcomers, Chinhangane residents actively denied access to any small plot of land for irrigation for Nanguene. In a similar sense, the relatively few nkanyu trees in the vicinity (quantity) marked the outer limit of the available fruit. The high cultural value of the fruit contributed to shaping customary rules of access to it that gave preference to members of the same lineage. The resettled residents, many of whom lacked lineage connections and therefore could not access the fruits through customary rules and norms, *per se*, attempted to employ alternative mechanisms to gain access to the nkanyu fruits and festivities.

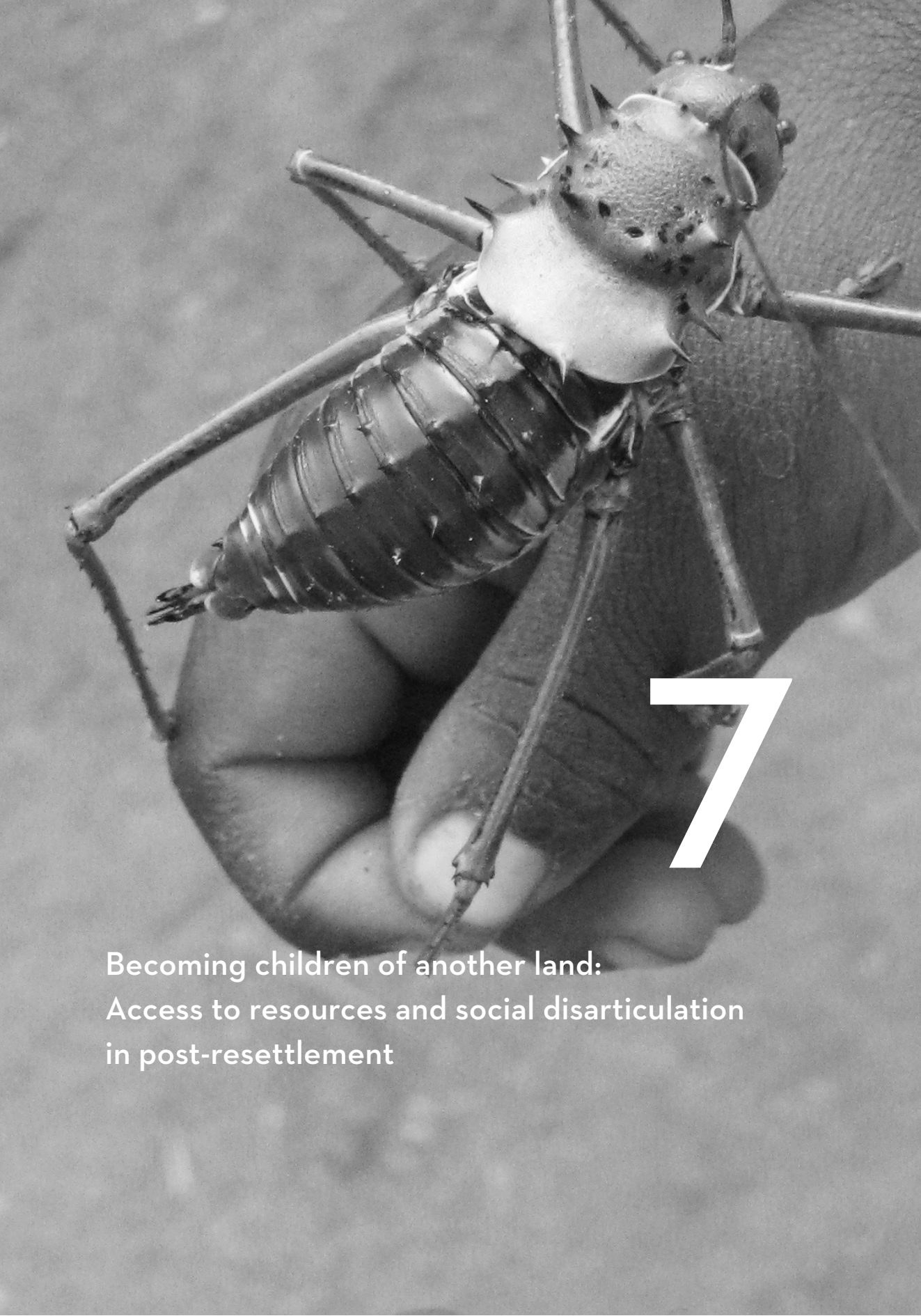
Implications for methodology

This study shows that commonly-used methods of spatial analysis of resources can generate a misleading image of potential resource use. This may be true even when

ground-truthing is carried out, rules of access are considered and local valuations of resources are used as the basis for the study as we did in our study. Understanding accessing requires an approach that allows observation of negotiations among people. Surveys alone may elicit rules and norms of access that differ from accessing in practice. Many studies of natural resource access, use, management and conflicts are carried out at a scale that masks actual practice. Complementary small-scale studies based on research methods that capture actual accessing can provide insight into the dynamic relationships among quality, quantity and access that ultimately determine resource use.

CONCLUSIONS

Resource use is shaped by relationships among quantity, quality and access. Assessing the quantity and quality without understanding the complex dynamics of accessing is insufficient for developing environmentally sustainable and socially equitable alternatives for resource management or for resolving conflicts over natural resources. Further research is needed on the relationships between quantity, quality and access (Figure 6.6) in other settings. We recognize that there are methodological challenges to understanding accessing in the detail required to elucidate alternative arrangements in the context of competing claims on natural resources. However, without insights derived from understanding the processes of accessing it is unlikely that competing claims on natural resources can be resolved in an equitable manner.



7

Becoming children of another land:
Access to resources and social disarticulation
in post-resettlement

Meselina is of short stature, has a sinewy build and biceps of a body builder. Her veins bulge out along the length of her arm, her hands and fingers are thick from work. Born somewhere around 1940, her children are in South Africa and she lives with her husband, Madala Zhita, who is now blind. Alone she maintains the house, cattle, fields, gets water and firewood and pounds and grinds the maize for the two of them to eat. Before she was resettled from her home in the Limpopo National Park she selected the best trees from the forest near her house out of which she carved enough instruments for grinding maize, a large rounded pole like an oversized pestal, to last her at least a lifetime. She was afraid that in their new home she wouldn't find the right wood.



Figure 7.1. Meselina is carving the large pestle that women use to grind maize. This instrument can be made only from a special wood that she was afraid of not finding in the post-resettlement location. Therefore she carved out as many as she could to have enough of them for the rest of her life. (Photo credit: J Milgroom, October 2008)

After being resettled with the rest of the village she and her husband couldn't secure any fields in which to plant maize when the rains came. When other resettled families went to look for fields and grazing land back inside the park on the other side of the river, only four months after resettlement, she and her husband decided to join. Meselina closed and locked the door of their new, painted, brick house, tied the key to a string and put it around her neck with the blue and white string of beads she was already wearing. She carried a large sack of maize on her head, and an empty yellow jerry can tied with a piece of cloth slung around her shoulder and set off towards the river where she would wait for a boat to take her across and continue walking for many hours through the forest in search of the others.



Figure 7.2. Meselina as she sets off on her journey back into the park in search of a new home. (Photo credits: J Milgroom, May 2010)

INTRODUCTION: PEANUTS

Nanguene was the first village resettled from the Limpopo National Park. Less than four months after the village had been moved to a planned resettlement site outside the park's boundaries, complete with new brick houses and tap water, half of the resettled households secured new lands back inside the park. Something had gone wrong with the resettlement process to drive people to attempt to reestablish a new village so soon after being moved. The resettlement of Nanguene appeared to have had all of the ingredients to make it a success. 'This is peanuts',⁶⁹ said a donor representative who had experience with resettlement in other places: Nanguene is a very small village of only 70 people that was resettled as a unit to a place only 26 kilometers away by road. The resettlement site had enough resources available to support the resettling village, albeit less than what they had before resettlement (Milgroom et al. forthcoming). The resettling population had chosen where they wanted to be resettled to, they were culturally similar to the host population, and kinship connections between the two villages seemed plentiful in the eyes of the park staff.⁷⁰ The resettlement project was guided by the World Bank Operational Policy on Involuntary Resettlement (WB OP 4.12), was relatively well-funded and externally monitored. Despite these conditions, resettlement of the village of Nanguene quickly led to a tearing of the social fabric that had kept the village together as a unit before the move. This chapter seeks to understand what happened.

69 Interview, AFD representative, Massingir April 17, 2008

70 Various interviews, for example: LNP staff, Massingir, August 5, 2008; April 28, 2010

In a meeting with residents of the resettling village, the host village and with the park staff, just before the physical resettlement, a revealing metaphor was repeatedly referred to about resettling residents 'becoming children of another land'. Analysis of this metaphor helped to understand the events that occurred soon after resettlement. It also led to theoretical insights about why the resettlement of the small village of Nanguene caused rapid tearing of the social fabric.

Resettlement and social disarticulation

It has been widely documented that resettlement tends to be economically and socially detrimental for resettling people. Despite attempts to improve resettlement practice through policies that emphasize participation of local people in planning their own resettlement, and the need to turn resettlement itself into an opportunity for development, stories of successful resettlement are still rare (WCD 2000; Downing 2002; Brockington and Igoe 2006; de Wet 2009). Cernea (1997) identified a list of eight risks that resettlement tends to bring: landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity and mortality, loss of access to common property resources and social disarticulation. While economic, material and productive losses are easier to mitigate and more commonly addressed in projects, social impacts, such as marginalization and social disarticulation are more difficult to understand, foresee and prevent in resettlement planning, and as a result often get left aside (Cernea and McDowell 2000; Koenig 2006; Downing and Garcia-Downing 2009). Displacement resulting from natural disasters, war or famine leads to negative social impacts when families are separated, deaths occur, villages are dispersed and there is little support to put the pieces back together. It is more puzzling, however, that planned resettlement resulting from a development project should lead to such negative social impacts when everyone is alive and well, there is no fragmentation of families or neighborhoods, and especially when measures are taken to minimize social impoverishment by for example, resettling social units together and keeping leadership structures in place.

Resettlement pulls apart social networks; interpersonal relationships are altered as the spatially and culturally based patterns of interaction are forced to change (Cernea and McDowell 2000: 363). Social networks that provide safety nets are broken, and social capital is dismantled. Authority structures are disregarded, groups lose their capacity to manage themselves and the society is less able to cope with uncertainty (Downing 1996). Some authors blame planners' lack of awareness of social issues (Cernea 1996: p. 32 as cited in Mahapatra and Mahapatra 2000: 440), or lack of sensitivity to the importance of cultural practices and religion (Vanden Berg 1999). Others focus more on the reactions of the resettled people; tribal or ethnic conflicts that erupt (Baird and

Shoemaker 2007), major changes in the physical environment that lead to differential adaptation by households to the new situation (Colson 1971), and the cultural dissonance that is experienced after resettlement as people lose their bearings about basic questions of identity (Downing and Garcia-Downing 2009). Yet others have described cultural clashes and competition over resources with the existing population as the cause of social disarticulation (Abutte 2000). None of these findings appear to explain the social disarticulation experienced in Nanguene. This chapter offers an alternative explanation.

In the case presented in this chapter, the resettlement planners were aware of the importance of social issues in resettlement and took some measures to minimize social disarticulation, such as moving the village as a unit that replicated as much as possible the existing social organization. They also tried to accommodate the religious and spiritual needs of the resettling residents by carrying out ceremonies to inform the ancestors of the resettlement, and by allowing each household to choose what they wanted to do with their family members' tombs left in the park. There were no tribal or ethnic conflicts, and the physical environment was very similar to their pre-resettlement location. The group of households that re-resettled themselves back in the park claimed that they were looking for fields and grazing resources that they were having trouble accessing⁷¹ in the official resettlement site.

Ribot and Peluso (2003) make a distinction between resource access (gaining and maintaining access) and control of access to resources, which is the ability to decide about other people's access to resources. Witter (2010) carried out a historical study of mobility of people in and around the area that is not the LNP. She found that in the past the difference between resource access and control of access to resources determined many decisions about where and with whom people settled. In Makandazulo, where most of her fieldwork was carried out, she found that people were well aware of the challenges they would face with respect to control over access to resources if they were resettled, and for this reason continue to resist resettlement. However, the distinction between accessing and controlling access to resources does not fully explain the phenomenon of social disarticulation.

Sikor and Lund (2009) have described the relationship between property and authority as mutually reinforcing. People attempt to secure their claims to land through seeking recognition of their property by a politico-legal institution (Sikor and Lund 2009). Property only exists if sanctioned by socially legitimate institutions and institutions are

71 Access is considered here the 'ability to benefit from a resource' (Ribot and Peluso 2003).

only legitimate when recognized as such by those seeking authority for the recognition of their property (ibid, page). By recognizing and enforcing the legitimacy of property claims, the institution simultaneously gains recognition as an authoritative body.

This theory has been used to describe the relationship between property and authority, but the relationship between more general access to resources and authority has not yet been fully explored. Property is only one kind of rights-based mechanism that is used to claim access to resources. Access encompasses a much wider realm of claims to resources than property (Ribot and Peluso 2003).

Colson (1971) describes how, after the resettlement of people from the area that would become the Kariba dam in Zambia, women married into households to gain access to resources where they could not access them independently, and then divorced when they were able to access the resources without the marriage contract. In southern Africa competition among lineages for resources has been, and continues to be a common cause of division of social units as small groups break off to establish their own territory with their own control over access to resources (Junod 1962; Harries 1994; Witter 2010). However, the relationship between access to resources and the cohesion of a social unit and how this plays out in the case of planned resettlement remains insufficiently understood in resettlement literature and praxis. Therefore, in this chapter we pose the question, what was it about accessing resources that led to social disarticulation in the case of the resettlement of Nanguene?

Metaphor analysis

The metaphor about the resettling residents 'becoming children of another land' is central to this chapter. Based on Lakoff and Johnson (1980) we use metaphor analysis to understand the principles or schemas behind this repeated metaphor, and then focus primarily on the implications for action of the metaphor towards the subject of the metaphor. Metaphor analysis can help reconstruct people's points of view as well as cultural phenomena (Schmitt, 2005). Metaphors are seen to be the expression of a culture's basic ideas (Lakoff and Johnson 1980) and can 'give new meaning to what we know and believe' (Johnson, 1987: p 139). Metaphor analysis can provide insight into how a metaphor can shape the way people perceive the world and act in that world (Yanow 1992). Through an analysis of 'becoming children of another land' we explore the implications of paying attention to metaphor for resettlement planning. It is in this metaphor that hidden dynamics, intentions and identities began to emerge that, almost foreshadowing, would later significantly influence the events in the LNP.

METHODS: RESEARCHING RESETTLEMENT

This research is based mainly on ethnographic fieldwork from 2006-2010 during which I worked and lived with the village of Nanguene for 24 months before resettlement and for 18 months thereafter. A number of methods were used in data collection and analysis. This chapter is based mostly on data from between May 2008 and June 2010 covering the period right before resettlement (November 2008) and the initial post-resettlement phase. Data was generated using participant observation, and repeated in-depth interviews with residents from Nanguene and Chinhangane, the LNP staff from the resettlement sub-committee, and donor representatives. I attended and documented resettlement working group meetings between the resettling residents, the host residents and the LNP staff, and collected and analyzed park documents on resettlement. I measured the fields that Nanguene residents secured in Chinhangane as well as in their re-resettlement location back inside the park with GPS. Qualitative data was sorted and coded in an iterative process during data collection and again after fieldwork was completed (Patton, 1990).

The core material of this chapter is based on a discussion between representatives of villages involved in the pilot project (Nanguene, Macavene, Chinhangane and Banga) and two LNP staff members in a GTR meeting just over a month before resettlement took place. The meeting was organized to discuss how the host village would receive the resettled village. Here we turn our attention to the case study. We first describe the study site and the dynamics of land in Nanguene prior to resettlement. We next present a critical event that occurred before resettlement to set the stage for the meeting and the introduction of the metaphor. Finally we describe the events that transpired as residents re-resettled themselves. This is followed by an analysis of the relationships between autonomy, authority and access to natural resources.

Study site: Resettlement from the LNP

The Limpopo National Park (LNP) was established in 2001. In 2003 park managers decided that approximately 7000 people residing in eight villages along the Shingwedzi River that runs through the center of the park would have to be resettled. Approximately 20,000 other people living along the edges of the park would not be required to move. A pilot project involving two villages, Nanguene and Macavene was initiated to develop resettlement protocol for the remaining villages. The German development bank, Kreditanstalt für Wiederaufbau (KfW)⁷², the major donor to the LNP project and sole donor supporting the resettlement, required the adoption of the World Bank Involuntary Resettlement Policy (WB OP 4.12) to guide the process of resettlement.

72 Now merged into the KfW bankengruppe

The WB OP 4.12 require compensation to be provided for resettling people that would at least replace losses incurred because of the relocation. Compensation in this case included one brick house to replace each household's main house, cash compensation to replace the remaining infrastructure, one field of one ha to replace one ha of the total land each nuclear family had previous to resettlement, cash compensation to replace remaining land foregone, a seed package, tree saplings, nails and basic building materials, and cash compensation for the transport of livestock for livestock owners and a small amount paid to everyone to assist with the transition. No measures were taken to compensate for loss of access to common pool resources.

Land, leadership and history

In Mozambique, history has left many layers of overlapping jurisdiction in governance and with respect to control over land and resources. Pre-colonial leadership structures were used by the Portuguese to extend their control into the hinterlands (Bowen 2000). After the independence war, Mozambique was governed by the socialist party called the Liberation Front of Mozambique (Frente de Liberacao de Mocambique-FRELIMO), and during the civil war against the National Resistance of Mozambique (Resistencia Nacional Mocambique-RENAMO) that lasted from independence in 1975 to 1992. After independence these leaders were associated with their loyalty to the colonial government and replaced with a different leadership structure (Bowen 2000). In the late 1970s and 1980s the FRELIMO party under the rule of Samora Machel implemented villagisation policies that grouped small settlements into larger villages for the purpose of providing services to the rural areas. The villages created during villagisation have remained the core villages in Gaza Province, but since then, especially since the end of the civil war some people have moved back to their original settlements. Territories associated with the traditional 'owners of the land' overlap with the officially delineated villages. These historical 'sediments' (Moore 2005) influence politics and power in everyday life as residents simultaneously navigate multiple and overlapping jurisdictions (West and Kloeck-Jenson 1999).

Of particular relevance to this chapter is the way these 'sediments' have influenced access to land. All land in Mozambique public; there is no private ownership of land, but customary land tenure has been recognized in the national land law (1997). In some villages traditional leaders or 'owners of the land' are also the politically recognized leaders of the village. In villages where this is not the case, however, issues of land allocation, as well as spiritual rituals and ceremonies fall under the jurisdiction of the traditional leader. The traditional leader is not elected, but is a descendent of the original founder of the village.

The region of the LNP is sparsely populated (2-4 people/km² inside the park and approximately 14 people/km² in the resettlement area). Land is not a major constraint; the amount of land that a household uses is determined principally by their capacity to work the land (Gengenbach 1998; Witter 2010). Although the traditional leader has the ultimate word about land allocation, other household heads that are male descendants of the founder of the village and therefore members of the lineage of 'owners of the land' can also make decisions about land (Witter 2010). Land can otherwise be accessed by non-lineage members by requesting permission to use the land from the leader, or another male descendent of the appropriate lineage, but a non-lineage member is not considered an 'owner' of his or her own field in the same way that lineage members do (Witter 2010).

FINDINGS

Ghosts

While the 18 resettlement houses were being built in Chinhangane, the guards that kept watch over them started hearing things in the houses at night. They reported that they heard stones being dropped on the roofs and ghosts. They said the ancestors were angry because they had not been informed about Nanguene people coming to live on their land. A ceremony had been performed for the ancestors of Chinhangane to inform them of the arrival of Nanguene to their land but the apparition of ghosts in the resettlement houses called attention to the fact that the houses had not in fact been built on land that belonged to Chinhangane, the host village, but on the land traditionally belonging to the neighbouring village, Marenguele. Nanguene's houses had been built on a site of perennial conflicts caused by historically overlapping jurisdiction over the land. These conflicts complicated the incoming residents' access to resources, specifically to cropping land, and left them without social room to manoeuvre between one village and the other.

Chinhangane is a new village created by villagisation from four small villages that traditionally had been ruled by two different but important leaders. Marenguele, that lies north of the present day Chinhangane, was one important chiefdom, and Banga, the southern neighbour, was the other (Figure 7.3). Traditionally the land around the new village of Chinhangane still belongs to these two chiefdoms. Since the end of the war the people from two of the four villages have returned to their original locations, Marenguele and Kombzwane. The present-day leader of Chinhangane struggles to keep people under his jurisdiction. The situation is further complicated by the fact that Marenguele residents were thought to be supporters of the opposition (RENAMO) during the civil war and so is not recognized officially by the current Mozambican government, has never appeared on any map and has not been provided with services.

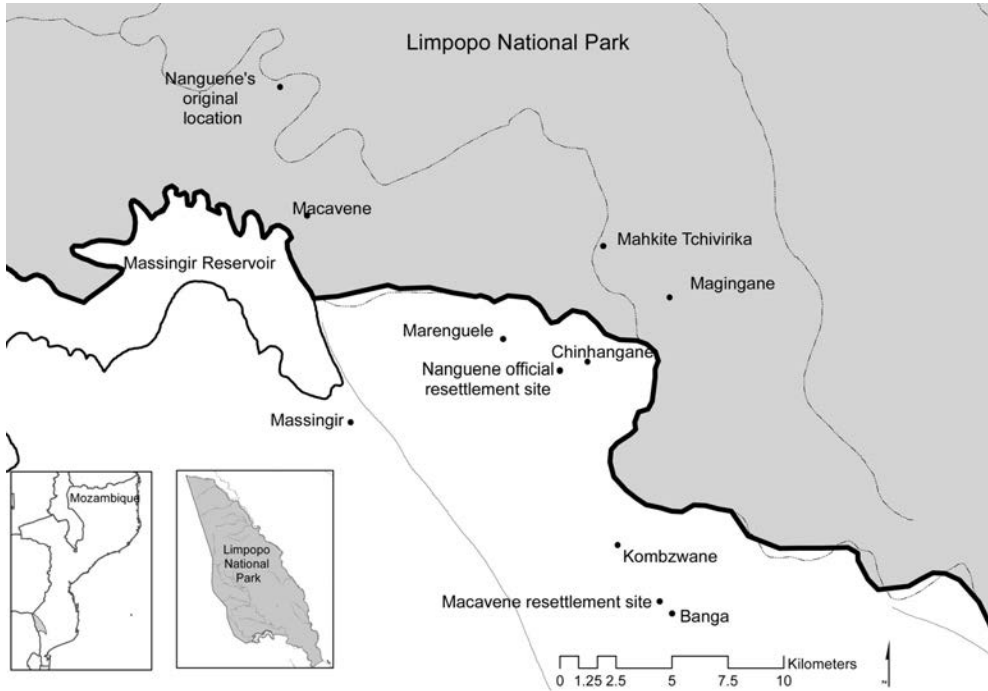


Figure 7.3. The original location of Nanguene inside the park, the official resettlement site and Nanguene's re-resettlement location back inside the park near Madingane. The host village Chinhangane is situated between the traditional 'owners of the land' from Marenguele and Banga. The village of Macavene is to be resettled near Banga. (Map credit: J Milgroom)

People from Kombzwane, a much smaller and less important settlement than Marenguele were still clandestinely moving back to their original location at the time of Nanguene's resettlement.

The residents of Nanguene preferred to be relocated southeast of the main village of Chinhangane, near the settlement of Kombzwane. However, the leader of Chinhangane did not accede to this request because he feared that this would embolden more of the people originally from Kombzwane to move back to their original location. He therefore chose as the area for Nanguene to settle a location to the north of the access road to Chinhangane. The park authorities accepted this choice and thus built the resettlement houses in the area indicated. The incident of the ghosts made the resettling residents, the park staff and the residents of Chinhangane realize that the resettlement houses had actually been built on Marenguele's land. However, the location of the fields to be provided in compensation for those left behind in the park had already been chosen – and they were in fact on Chinhangane's land. This in practice meant that Nanguene people were living on land that belonged to one leader, and

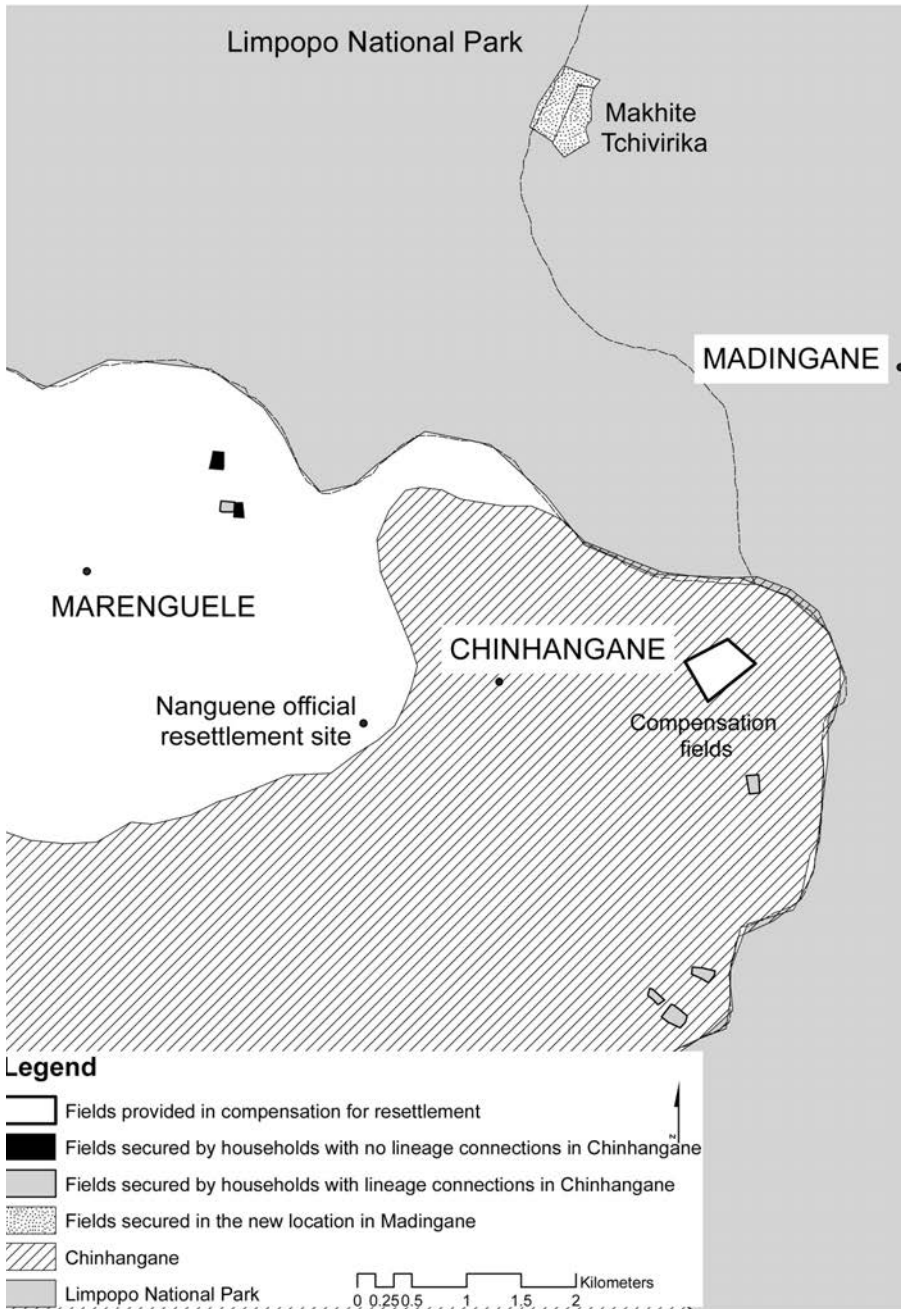


Figure 7.4. Map of the boundary between the Marenguele and Chinhangane with respect to the location of the resettlement houses and the location of the fields provided in compensation for resettlement. Fields permanently secured by residents of Nanguene from the Mahlaole lineage and from other lineages are indicated as well as the location and area of land secured in the newly established village Makhite Tchivirika.(Map credit: J Milgroom)

they had their fields on land that belonged to another (Figure 7.4). One park staff commented:

All the elders were there when we chose the site. The ones from Marenguele also. They made it very clear that the area for Nanguene was going to be only on one side of the road, not the other by any means. It was only later that I learned why. I think that they organized between themselves for Marenguele to host the houses and Chinhangane to give the land for fields and grazing.

The fact that the resettlement houses had been built on Marenguele's land created a major problem because the village of Nanguene was stuck between the jurisdiction of two leaders. The implications are described in the following section. As the leader of Nanguene said: 'Before it was discovered that we were on Marenguele's land Chinhangane was open and welcoming to us but now they are not at all. If we are stuck between the conflict of Nchenya [leader of Marenguele] and Kosene [leader of Chinhangane] we will suffer living there.'⁷³ Despite this concern, however, the residents of Nanguene were at that point more worried about the rapidly approaching rainy season. They wanted to be resettled as quickly as possible so that they could have time before the rains to find and prepare fields. The leader of Nanguene wrote a letter to the district administrator asking for her help to speed up the process of resettlement. By doing this they gave up any opportunity to negotiate for better resettlement conditions.

The metaphor : Becoming children of a new land

On September 23 2008, shortly before the physical resettlement of people and their belongings in November 2008, a meeting was held in the town of Massingir (the district center) with the representatives of Nanguene, Chinhangane, Macavene (the second village to be resettled as part of the pilot project) and Banga (the village that was to host Macavene), as well as Nchenya, the traditional leader of Marenguele. The meeting was called by the LNP staff to discuss the details of how the village of Chinhangane was going to welcome the village of Nanguene, in response to concerns expressed by residents of Nanguene.

It was at this meeting that the implications of being resettled across divided jurisdictions became clear to Nanguene residents. A metaphor emerged that was repeated throughout of the meeting, stringing together people's thoughts and fears and intentions, and through which the position of the resettling residents became explicit;

⁷³ Interview, Nanguene, Sept 23, 2008

as resettled newcomers, they were likened to children. This metaphor had a double meaning for the participants; (i) it referred figuratively to differing expectations about social integration between the host and resettling villages; and (ii) it referred literally to the future of their village, via the children who were being resettled. During the meeting it became clear that the way that social integration played out in practice would have major implications for the autonomy of the village of Nanguene, the pre-resettlement authority and social organization, and the process of accessing land for cropping and other resources. The conversation was long and full of numerous side discussions about details, conflicts and plans; here I narrate only the between-the-lines conversation expressed through this metaphor.

This metaphor was introduced first by the park staff person responsible for coordinating the meetings as he introduced the purpose of the meeting:

We should know that we are receiving this community in happiness, and sadness; we will cry with them and we will play with them... Nanguene brings boys and girls, they work, go to the fields, get water. Chinhangane also has boys and girls who have their own ways. How will it be?

The village of Banga, soon to be the host village for Macavene, spoke for the need to welcome the newcomers and encourage them to integrate into the social networks of the host village:

They want to be well-received. If I have a visit and I leave them alone it means I did not receive them with love. Girls will be courted by boys and they should do so with love.

This was re-emphasized by the park staff person:

Nanguene has men and Chin has women. They will love each other—our children will intermarry. We cannot put up barriers.

However, his comment sparked some resistance to the idea of a sort of inevitable integration between host and resettled village; one of the residents of Macavene said:

We can't tell our children that they have to get married in Chinhangane just because their parents went to live there.

This resistance was echoed by a resident of Nanguene who said:

The children can only understand where they were born—those children born in Chinhangane are the only children from Chinhangane.

He went on to say that regardless of day-to-day events ultimately the leadership of the host village would not take care of them because they were not family:

What I want to say is that the kids can fight and my child can come home [from school] with an eye poked out and we will have to go to the hospital. When a child is hurt the teacher should take the child to the hospital but in the end it is the father who goes.

The rules of the game, he then said, will always be defined by the original residents of the land:

If they are playing ball they can say hey, you kicked me! And the other child can say no, this is not Nanguene.

Another resident of Nanguene then chimed in:

...even if we are living together it doesn't mean that we are equals. Among kids at home who eat in the same plate, there are some who hit each other and the other child is then afraid to eat.

This comment refers to the potential discrimination that the resettled villagers might face regardless of the official welcoming of the resettled village by the host village leader.

The concern whether or not the residents of Nanguene would be discriminated against as newcomers was exacerbated by the allocation of their resources in areas with different leaders. The discussion of the nuances of social integration reached no conclusion in itself. None the less, the way in which the residents from the resettling, host and neighboring villages would integrate socially was clearly important not only for the resettling residents, whose concern focused on the implications for accessing resources, but also for the residents of the host villages. The host villages were concerned about how important ceremonies were to be carried out and to what extent the resettling villagers would refer to them for authority or attempt to remain autonomous units.

Autonomy

The balance between social integration and the autonomy of each village as a separate unit evidently was regarded as a delicate issue. The LNP staff person promised the residents of the resettling villages that they would not be subject to the authority of the host villages and that they would remain independent villages. The notion of autonomy, however, like social integration, was contested. A resident of Macavene (resettling village) said:

... We don't want to be slaves. It seems that where we are going we will feel like slaves... each village should have their own ceremonies, not have other villages come tell us we should do our ceremonies. No one should tell us to dance or to blame us for no rain if we don't dance...

The government promised that we would have our own leaders and our own community police... This is why we agreed to accept [to be resettled].

In response to this comment a resident from Banga (host village) stated:

We know they will do the ceremonies they have to do. If they go to church they will go to church in their own way. What the committee decided was that if they wanted to do ceremonies, Nanguene should invite Chinhangane.

The leader of Chinhangane connected the fact that the host village would give land to the resettled residents for their ancestors' tombs, with their joint participation in future ceremonies:

We don't want to govern them, we will work with them, we are in the same family as them... We will give them a place for their tombs—and if there is a death in Chinhangane they can help there too. They can't say there was a death there and they can't participation—we should all participate. It is their son too.

The host villages expected that the resettling villages would invite them to their ceremonies and that the resettling residents would participate in the host village ceremonies but the resettling villages clearly expected to be autonomous units, maintaining their own ceremonies. These contradictory expectations influenced the disposition that the host residents had towards providing access to resources, specifically dryland fields, for the resettling residents.

Accessing fields

The leader of Nanguene asked:

The sons of Nanguene, when they grow up and get married and want fields how will they have fields?

The leader of Chinhangane responded:

I come to say the following: let's go see the houses that were distributed to Nanguene—there are no houses for Chinhangane—if you want to divide or share those houses you can. I can't receive people when they are in Nchenya's aldeia [Marenguele]. The problem is where they are.... I can't take my ancestor's land and give it to Nanguene because of Nchenya [the leader of Marenguele]. Chinhangane's maize will be taken from Chinhangane to Nchenya to do ceremonies there...when the children grow up they will see what they will do. If you talk nicely they can anyhow find fields in Makokini, but if they are talking like they are now they won't have machambas.

Here the leader of Chinhangane made a clear statement: that Chinhangane would not give Nanguene more fields because the Nanguene residents would be living on Marenguele's land, because of jealousy that they had received new houses and that Chinhangane did not, and because they wanted to maintain their own autonomy.

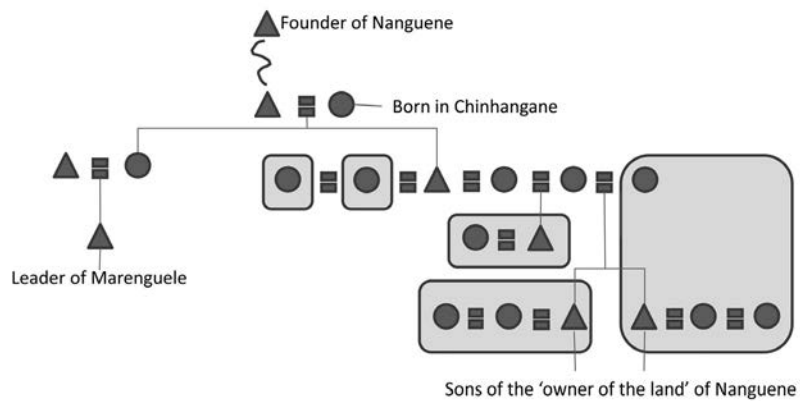
This meeting brought out into the open the fears and concerns surrounding the resettlement decisions and conditions. Many of the issues foreshadowed in this meeting were played out in practice after resettlement. I turn in the next section to the way the process of resettlement unfolded in the conflict-ridden context described above. Struggles over social integration, autonomy and access to and control over access to resources influenced households in different ways. Skirting the official position of the leader of Chinhangane, those resettled residents who belonged to a lineage in Chinhangane, or who had 'parents' to look after them, found themselves in a different position than those who did not.

Re-resettling: Founding 'Makhite Tchivirika' for those concerned with working

Nanguene was resettled before the compensation fields prepared by the park authority were ready for cultivation. With the onset of the rainy season, the residents of Nanguene attempted to gain access to other fields to plant on as quickly as possible. Frustrated by not being able to gain access to the fields that they needed, half of the newly resettled households went back into the park in search of a place to establish a new village. The leader of Nanguene and his family was one of these households. They called the new village 'Makhite Tchivirika'. Makhite is the name of the area and Tchivirika means 'those concerned with working'. This name was chosen by the leader

of Nanguene in response to what he felt was a lack of desire to work on the part of the households who had stayed behind in the resettlement location. The new village was established on the traditional land of Madingane (Figure 7.4), not coincidentally, because the grandfather of Maimele had been born in Madingane. Permission to establish a new village and to open up the land for their fields, was easy to secure. Each household paid 100 mozambican meticales (the equivalent of 4 USD) for a household plot, and the same amount for each field they wanted to open. An adjacent area was identified for the expansion of the fields to be used when needed. However, the source of water was far from their new village location and any purchased food also had to be carried long distances. A visit to the district capital of Massingir, located on the other side of the Olifantes River, required either payment for a boat crossing, if the water levels were not too high and if the boat was providing the service, or a long walk to the Massingir dam where crossing on foot was possible. Motorized transportation to the district capital was more infrequent than where they had been living in their original location inside the park, and also more expensive. Therefore moving to this new location implied a series of significant sacrifices in addition to a second translocation of household items and the construction of houses, kraals and granaries.

Households that stayed in Chinhangane



Households that moved to Madingane

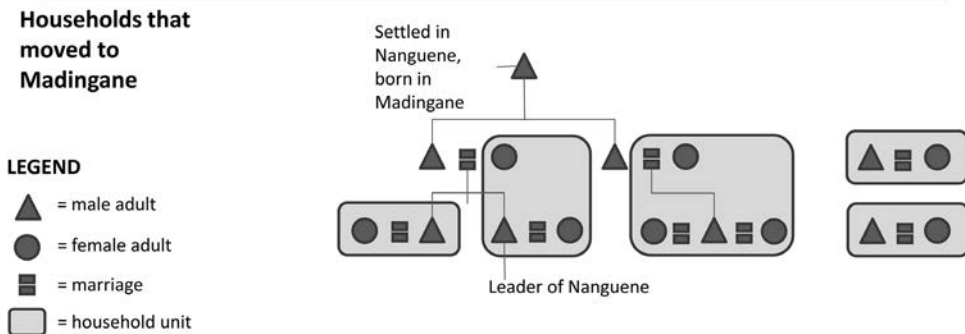


Figure 7.5. Kinship charts indicating the division within the village based on those who had one common ancestor.

Further analysis of who stayed and who left the official resettlement site and who had managed to access which resources in Chinhangane, however, revealed that there was much more to the decision to return to the park than just inability to access sufficient fields. The original village of Nanguene was made up of households with three last names, Mahlaole, Maimele and Zhita (Figure 7.5). Nanguene had been founded by ancestors of the last, Mahlaole, and therefore the Mahlaole lineage were considered the 'owners of the land' in the original location. However, the leader of Nanguene at the time of resettlement was not a member of the lineage that had traditional jurisdiction over the village. Maimele, however had been chosen as the leader of Nanguene because of his leadership qualities during a time in which the sons of Mahlaole, the natural successors of the previous leader, were not interested in taking on the responsibility. Despite this, they, especially the eldest, remained influential in making important decisions for the village, such as the choice to be resettled to Chinhangane. A grandmother of the Mahlaole family had been born in Chinhangane, and many members of her lineage who remained in Chinhagane had become important members of that village. Therefore the Mahlaoles from Nanguene knew that they were moving to a place where they had family members who would facilitate access to resources for them. Not surprisingly, the households that went searching again for a site to found a new village back inside the park were all those who did not pertain to the Mahlaole lineage. This included one household which did carry the Mahlaole name but who was not a member of the same group of Mahlaoles that lived in Chinhangane (Figure 7.5).

Table 7.1. Fields accessed by June 2010 by the residents of Nanguene organized by household and by field and indicating tenure arrangements. Fields borrowed and returned voluntarily are not indicated in this table.

Tenure	Number of households	Mahlaole	Other	Number of fields	Mahlaole	Other
Permanent	5	3	2	7	5	2
Borrowed	8	5	3	12	8	4
Borrowed, taken away	3	2	1	3	2	1
Unclear	2	1	1	2	1	1

However, a simple explanation of lineage as the main facilitator of access to fields, and lack of access to fields as the main reason for re-resettlement, is misleading. After two rainy seasons, 18 months after resettlement, only five out of 10 resettled households had managed to secure permanent fields. Of these five, three were Mahlaoles and two were of another lineage (Table 7.1). Some non-Mahlaole households managed to access fields and yet still decided to leave in search of a new village, while some Mahlaole households, who did not manage to access fields, none the less decided to

stay in Chinhangane. These findings indicate that something else besides access to resources and lineage per se is at play here. To understand the underlying reasons for the social disarticulation of Nanguene, we turn back to the metaphor of resettling residents as children in the host village.

ANALYSIS: AUTONOMY, AUTHORITY AND ACCESS TO RESOURCES

The metaphor of 'becoming children of another land' plays a dual role in this chapter. It has helped to understand what happened after the resettlement of Nanguene by facilitating the reconciliation between two theories that, together, provide an alternative explanation for post-resettlement social disarticulation. It also explores the way in which metaphors can help to signal important issues in the management of complex social dynamics. I analyse first what happened after resettlement and the theoretical contributions of the chapter before turning to the methodological insights generated from the analysis of metaphor.

Social cohesion and resource control

Newly resettled residents left the resettlement site in search of resources, but they were not searching for a place where they could simply access resources, as children, but for a place where they could control access to resources, as parents. In Chinhangane, the residents who had no direct claim to the dominant lineage may have been able to access the resources they needed for their livelihoods, but a breach of autonomy, authority, identity and dignity led them to search for a place where they did not have to request permission from others to open fields and carry out ceremonies.

The distinction between access to and control over access to resources made by Ribot and Peluso (2003) is one explanation of what happened after resettlement. In the resettlement site, resettled residents may have been able to access resources, but they could not control their own access to them; they had to gain and maintain access via other people. As Witter (2010) describes, the difference between gaining and maintaining access to resources and control over access to resources is fundamental for questions beyond livelihoods and resource use. Control of access to resources is determined by membership to a group defined by lineage; a male living in the territory belonging to his own lineage can control access to the resources in his territory and need not maintain access through others. Therefore, he who cannot control access to resources is perennially living in the land of others. However, this explanation leaves some questions unanswered. Why did half of the village move together? Why did individual households not go looking for land and resources in the locations of their own familial lineage? Why was it the old leader of Nanguene that instigated the move back into the park? These questions are insufficiently answered by the explanation of

control of other people's access to resources.

Ribot and Peluso's (2003) theory of access and Sikor and Lund's (2009) theory about the relationship between property rights and authority have been treated independently of one another. Ribot and Peluso deal specifically with mechanisms of access to resources, of which property is one. The metaphor about 'becoming children of another land' and the events that occurred after resettlement allows us to see that there is also a mutually reinforcing relationship between authority and access to and control over resources.

Parents have authority over their children only insofar as children recognize their parents as figures of authority. Sikor and Lund's (2009) description of a mutually reinforcing relationship between property and authority mirrors the patterns we saw between access to resources and authority in the case study presented here. This was observed on both the level of the village and the household. When the leader of Nanguene no longer had any resources to be able to allocate to the residents of Nanguene, they stopped recognizing his authority and instead began to look to their own 'parents' or members of their lineage for the resources that they needed. In fact, after the departure of the leader of Nanguene, the second eldest Mahlaole became the *de facto* leader in his place. The legitimacy of a leader, therefore, only exists if he/she has resources to which he/she can control access for the residents of his/her village, that in turn makes them recognize his/her authority. When the leader of Nanguene was stripped of control of access to resources, the results was social disarticulation.

On another level, resources within the family can be accessed through the a male descent of the 'owner of the land' without having to refer to the leader of the village (Witter 2010). Three of the five households that moved to Makhite Tchivirika were headed by male descendants of the 'owner of the land' in Marenguele. Regardless of being able to access resources or not in Chinhangane for immediate use, the inter-familial autonomy of being able to allocate resources to their own children and wives played a major role in the decision to move. Therefore, like the mutually reinforcing relationship between property and authority at the level of a village, control of access to resources also commands authority within the family. The residents of Nanguene who were not descendants of the 'owners of the land' in the host village moved in search of a place where they could re-establish control of access to resources within their household.

In the case of Nanguene, women and men were well aware, long before resettlement, of the issues of access to resources that they would face. However, because of the

direct lineage connections of some of the influential households in Nanguene with the dominant lineage in Chinhangane, the decision was made to request to be resettled, and the location of Chinhangane was chosen. Because of the unusual situation in Nanguene where the leader was not a member of the lineage of the 'owner of the land' in the territory of Nanguene, he could not sway the decision to be moved to a place where he had lineage connections, but was overridden by the ultimately more influential, but invisible voices of the descendants of the 'owner of the land' in Nanguene. The emergence of these concealed identities became another recurring theme, intertwined with notions of autonomy, elicited by the changes brought about by resettlement.

Invisible identities

Before discussions about resettlement began the residents of Nanguene lived together as a cohesive unit. It was only as the preparations for resettlement advanced that the differences within the village with respect to lineages began to emerge. These 'hidden' identities emerged as they became relevant in the new resettlement situation. These differences hadn't in fact been taken into consideration by the park staff when resettlement was being planned. They saw that in general Nanguene had kinship connections in Chinhangane, but they did not consider the fact that while connections were strong for some households, for half of the households there were no connections at all.

Other invisible identities surfaced as the resettlement pressed on. For example, the emergence of the two different jurisdictions, the traditional boundary between Marenguele and Chinhangane only became evident when the houses were already built. Previous to the actual building of the houses, not a word had been mentioned about these boundaries or the importance of resettling Nanguene and giving them fields within land with the same 'owner'. These identities emerged when, by making them explicit, they could exert control over access to resources. This is relevant for resettlement because of the major social changes that it bring about. It is likely that in any resettlement initiative previously concealed identities and differences within the population hitherto unimportant emerge during the process.

The metaphor as a signal

The way that the metaphor 'becoming children of another land' was used repeatedly by multiple people in the meeting described above indicated that before resettlement there was a collective understanding of the issues of social integration, autonomy and control over access to resources that resettlement would bring. Because of the nature of metaphors as implicit and deeply embedded in situated cultural, political and social

understanding of a lived experience, they can provide insight into social dynamics that are not expressed explicitly. Metaphors are effective when they express something that others can intrinsically understand – they provide new meaning and an organization of experiences that is not available through our conventional conceptual system (Lakoff and Johnson 1980).

A park staff member also participated in the meeting and used the metaphor himself. However, the park staff did not act to avoid or mitigate the events that ensued, as foreshadowed by the metaphor, after resettlement. This suggests two possible implications for resettlement practice. One is that, because of the complex social dynamics of resettlement, metaphors can be a useful tool for helping to make socially-sensitive decisions about resettlement. The other is that this case indicates that the resettling and host residents were much more aware of what resettlement was likely to mean for them than the park staff. This points to the debate about participation of resettling people in planning processes. Allowing resettling residents, not to participate in planning, but to design their own resettlement conditions may be the most efficient way to avoid negative consequences of resettlement such as social disarticulation.

Transition after resettlement takes at least a generation for most people to feel at home in their new location (Kinsey 2003; Scudder 2005). This study was carried out until 18 months after resettlement and therefore cannot conclude anything about long term processes of social adaptation. Regardless of the long term outcomes, however, this case provides valuable insight into the elusive processes underlying social disarticulation.

CONCLUSIONS

Social disarticulation occurred after the resettlement of Nanguene because the residents and the leader of Nanguene were expected to become children of Chinhangane. In a struggle for autonomy, authority and control over access to resources half of the newly resettled households abandoned the resettlement site in search of a place where they did not have to become children of another land. The leader of Nanguene lost his authority as a leader, or a 'parent' to the village, because he had no control over access to resources in the post-resettlement location. Not belonging to any lineage in the host village, he and other households who had no 'parents' in the host village left in search of a place where they could not only access the resources they needed, but control the access to those resources and have the kind of autonomy that would lend itself to a cohesive social unit. The old leader of Nanguene found a location where he was entitled to land through his own lineage and could therefore once again command the authority to allocate resources. The households who had 'parents' or

lineage in the host village stayed to refer to them for access. This parts from previous analysis of access, lineage and social disarticulation in that it considers the role of accessing and controlling access to resources in mutually reinforcing the cohesion of the social unit. Like the relationship between parents and children, villagers access resources through a leader, or the 'owner of the land', as children access resources through their parents. In doing so they legitimize the autonomy of the social unit as children legitimize the authority of their parents.

Artificial resettlement often results in social disarticulation because the social relationships that legitimize control over access to resources are disregarded. This important understanding of the relationship between people, the process of accessing resources and social cohesion has repeatedly been ignored in resettlement practice. Instead focus has been repeatedly placed on the resources themselves, the material compensation and economic well-being. Recognizing the role that accessing resources and control over access to resources plays in the cultural context where resettlement is to take place could potentially help to minimize the seemingly inevitable tearing of social fabric that resettlement so often brings.

Back inside the park in the newly established informal village of Makhite Tchivirika, Meselina silently circled the forest as she carefully chose the site for her new home. The key to her brick house in Chinhangane dangled from her neck as she bent over to swing her machete against the base of a sapling to make room for her new hut.



Figure 7.6. Meselina clearing a space in the forest for her new home. (Photo credit: J Milgroom, March 2010)



8

The role of research in conflict over natural
resources: Informing resettlement negotiations
in Limpopo National Park, Mozambique

ABSTRACT

Working in a tense political climate with a village to be resettled from a national park in Mozambique, this research searched for a way to be relevant to the complex situation at hand. The objective of the research at the outset was to improve post-resettlement food security. While intending to carry out a formal cycle of action research focused on agricultural practices, the research found its niche in contributing to negotiations of post-resettlement conditions between park staff and village residents. Working interactively with multiple actors, the researcher inquired about and presented information that could increase leverage in negotiations for the village residents while maintaining a balanced perspective about the challenges and limitations encountered by other actors in the process. Although the tangible influence of the research on the outcome of negotiations was subtle, we believe that untraceable consequences may have been more profound. Lessons learned include understanding that the process of the research can potentially contribute more to problem solving than polished research results. This potential contribution is dependent on investing in relationships with key actors and being present to witness, document, inquire and support the process as opportunities arise. The research is more likely to bring about change if it is explicitly socially-engaged, interdisciplinary, well-grounded with actors in multiple levels and coupled with information intermediation. In the type of conflictive context common in landscape development, we suggest that the role of the researcher differs from in a non-conflictive setting. In the context of conflict, the potential for the researcher to contribute to social change hinges on managing a balancing act between actors in conflict and the researcher, tailoring the research to the people, culture and specificities of each situation, and exploring creative modes of interaction.

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INTRODUCTION

This chapter reports on a research process that took place in and around the Limpopo National Park in Mozambique. The Limpopo National Park (LNP) was established as a stepping stone to the creation of the larger Great Limpopo Transfrontier Conservation Area (GLTFCA) that also includes Kruger National Park in South Africa and Gonarezhou National Park in Zimbabwe as well as two other national parks in Mozambique. The creation of this new park led to plans to resettle villages located along a river that runs through the center of the park to areas outside or in the buffer zone of the park (Figure 8.1). Although most residents slated for resettlement did not want to leave their homes, the villages have been faced with intensified exposure to wildlife resulting from the translocation of game and the removal of the fence that separated the area from Kruger National Park. Threatened mainly by the increasing number of elephants, some residents gradually became willing to negotiate 'voluntary' resettlement (see Milgroom and Spierenburg 2008). The resettlement initiative led to a lengthy negotiation process that first focused on land-use of the area inside the park while convincing residents to accept resettlement, and then on land-use and access to resources in the post-resettlement location while determining conditions for resettlement. These conditions included compensation provided to the resettled residents as well as the benefits provided to the host villages. The research reported on in this chapter documented the process from December 2006 to June 2010 and the short-term outcome of the resettlement of the first village, one of the two villages that formed part of the pilot project for resettlement in the LNP. The study was part of a larger interdisciplinary research programme 'Competing Claims on Natural Resources' of Wageningen University and Research Centre, that included twelve PhD projects in total. In line with the philosophy of this larger programme, the research had a natural and social science component and aimed to inform societal negotiation and contribute to problem solving in this conflictive setting. The researcher was actively involved in the process being studied. In this chapter, we first outline the ideas underlying the larger research programme (see also Giller et al. 2008) and provide some further context information. Then we describe some key episodes in the research process, with the view of clarifying the roles played by the researcher and assessing the potential influence of the research on the process and outcome of resettlement. In the discussion section, we reflect on how the roles played by the researcher and the impacts obtained were line up with the larger programme philosophy, and whether these contributed indeed to informing societal negotiation and strengthening the position of weaker parties therein.

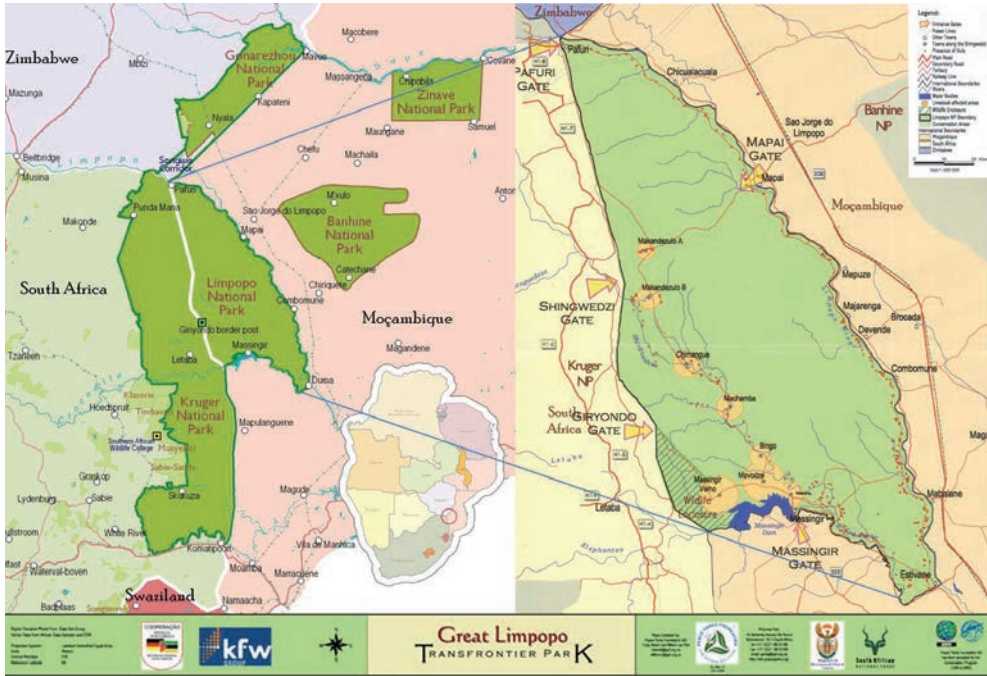


Figure 8.1. The Great Limpopo Transfrontier Conservation Area(GLTFCA) in the regional context (left) and the LNP (right) showing the villages to be resettled highlighted. Source of maps: Peace Parks Foundation (www.peaceparks.org)

The Competing Claims perspective on the role of science in societal negotiation

Conflicts and competition centering on the use of land and water can be regarded as a ‘complex’ problem setting (Hisschemöller and Hoppe 1996; Gunderson and Holling 2002). Many stakeholders try to exert influence and pursue different societal values and interests. At the same time, actors involved face considerable uncertainty regarding the likely constraints, opportunities, consequences and trade-offs associated with different modes of using land and water. In such complex settings, outcomes emerge eventually from multiple interactions across time and space. Such outcomes cannot be pre-planned, and can in many ways be seen as the unintended outcome of many intentional as well as unintentional (inter)actions and inter-dependent activities (Long 2001; Loorbach 2007). This series of interactions can be conceptualized as a process of societal negotiation that takes place in multiple networks and social settings, with different degrees of formality and intentionality (Giller et al. 2008). When we speak of ‘societal negotiation’ we do not imply that formal, organized or planned negotiations are of prime importance. We do suggest that ‘outcomes are negotiated’ under circumstances where different interests and power dynamics play a role. It is important to recognize that the quality of both formal and informal societal negotiations is often far

from optimal in terms of equity, bargaining power, procedural and legal transparency, representation of interests and negotiation skills. Moreover, the availability of and/or access to knowledge and validated information about bio-physical and socio-economic dynamics, options, opportunities and constraints often is lacking (Cash et al. 2006) or unequally distributed.

One strategy to improve the quality of societal negotiation is to collaboratively develop relevant insights, or collect, systematize and analyse knowledge and information. Although other forms of intervention could in theory and practice be more forceful in creating 'a level playing field', these are outside the direct mandate and sphere of influence of science as a system of inquiry. Science as an organised human activity can play useful roles in negotiations in complex problem settings, especially if scientists can adapt their conventional mode of operating to practical problem solving (Funtowicz and Ravetz 1993; Gibbons et al. 1994; Hisschemöller and Hoppe 1996; Hoppe 2005). In situations where both uncertainty and decision stakes are high, Funtowicz & Ravetz (1993) argue, scientists need to engage in *post-normal science*, that is, to become intensely involved in societal interactions and collaborative forms of research and learning in order to contribute to the development of shared views and value commitments, and thus become part of an 'extended peer community', reaching beyond the normal boundaries of professional relationships. The idea of post-normal science has close affinity to Mode 2 science (Gibbons et al. 1994) (see Table 8.1). An implicit assumption in 'post normal' and 'mode 2' science is that scientists have something unique to offer that may improve the quality of societal negotiations.

Table 8.1. Key differences between 'Mode 1' and 'Mode 2' science (Gibbons et al. 1994).

'MODE 1' Science	'MODE 2' Science
Academic context	
Disciplinary	
Homogeneous	Application-oriented
Hierarchic and stable	Trans-disciplinary
Academic quality control	Heterogeneous
Accountable to science	Heterarchic and variable
	Quality measured on a wider set of criteria
	Accountable to science <i>and</i> society

A sceptical view of the contribution of science

Scientists are faced with a series of challenges that they must overcome in order to play a positive role in societal negotiations. In conflict situations, knowledge and information are strategic resources. Stakeholders select and deploy the data and insights that help them to defend their own specific interests. They tend to ignore or actively seek to undermine the credibility of contrary evidence, or oppose researching certain issues if they feel that the outcomes may be threatening. They also might try to prevent the spread of knowledge and information that they expect to negatively affect their interests. A proposal to carry out research may be welcomed as a delaying tactic or diverted towards innocuous themes or topics that support the cause of the already powerful. Stakeholders also may engage in forming opposing 'knowledge coalitions' (Long and Long 1992; Van Buuren and Edelenbos 2004). Research-based solutions and options often are ignored as stakeholders use opportune policy windows (e.g. a time of crisis) in order to push solutions that were designed earlier but languished for lack of support (Warner 2008).

Moreover, the capacity of science to come up with results and options that are feasible in the context is easily overestimated. The chief reasons are that scientists often fail to take into account contextual conditions and locally specific knowledge when setting priorities, defining the nature of the problem, or designing solutions. Scientists' willingness and capacity to integrate insights from different disciplines and/or about different time and scale dimensions is organisationally constrained. The capacity of science to arrive at firm causal conclusions or predictions about the future that are sufficiently secure for decision-making in messy societal negotiations, also remains limited. Temporal mismatches also come into play—decision makers often want results quickly, while quality, in-depth research often takes more time. Associated with this mismatch is the potential for researchers, with the best intentions of contributing to negotiations, even in mode 2 science, to mis-represent important issues due to a lack of thorough understanding of the nuances of the situation. On the other hand, bringing out information that has never before been defined in black and white terms, like drawing physical boundaries on a map that has traditionally been interpreted loosely, can create more conflict and reduce the space for negotiated compromise. Furthermore, reward structures in science continue to discourage scientists from engaging with societal stakeholders in the first place (see Leeuwis 2004; McIntyre et al. 2009).

An optimistic view of the contribution of science

Despite the challenges described above, there are several reasons to be cautiously optimistic about the potential of scientists to make a difference to the outcomes of societal negotiations. The fact that knowledge and information can be used as a

strategic resource (i.e. as a 'weapon') in a situation of conflict does mean that stakeholders have the awareness of how to access and use that knowledge and information. In line with this, it has been shown that research activity may well serve to initiate the mobilisation of stakeholders in negotiation processes (see also Van Buuren and Edelenbos 2004; Blackmore et al. 2007). When research is carried out in close collaboration with stakeholders, it has the potential to contribute to the development of common understanding and identify starting points for action. It might also help to improve the quality of the relationship among stakeholders as they begin to engage in 'doing something together'. By exploring or by just documenting previously ignored or misunderstood phenomena, researchers can help to widen the space in which options for action are sought. By introducing different qualitative and quantitative techniques such as modelling (Van Ittersum et al. 1998) and scenario development (Weisbord and Janoff 1995) research can help stakeholders discover shared values and visions about the longer term. In addition, research can serve to ameliorate uncertainty with respect to some straightforward aspects of disputed issues, even if it is difficult to capture the full complexity of the context. Collecting, analysing, and organizing information tailored to contribute to the negotiation process, such as, for example, quantifying resources or things not normally expressed in that way can have non-trivial consequences for the way that stakeholders look at things and interact with each other (Collins et al. 2007; Steyaert et al. 2007). And finally, studies in conflict management too have suggested that forms of research and investigation have considerable potential improving the creativity and quality of negotiation trajectories (Pruitt and Carnevale 1993; Aarts 1998).

The methodological approach developed by the larger Competing Claims programme organises collaborative research in multiple cycles that 'start' with making descriptions of the situation from different disciplinary and stakeholder perspectives, and then proceeds to gain understanding of interrelations that have explanatory value. Subsequently, a critical activity is exploration in the widest possible sense, which supposedly leads to the discovery of new options for action that can be integrated in the design of social and technical solutions. Placed at the centre of the cycle is 'negotiation', recognizing on one hand the importance of the role of science as a vehicle for informing societal negotiation processes, and, on the other, that in order to generate knowledge that is legitimate and relevant to the societal problem at hand on-going negotiation with stakeholders about research activities is necessary. Figure 8.2 presents the methodological framework for the programme. How the processes of interaction sketched in the figure actually played out in the case considered here is further detailed in the following sections.

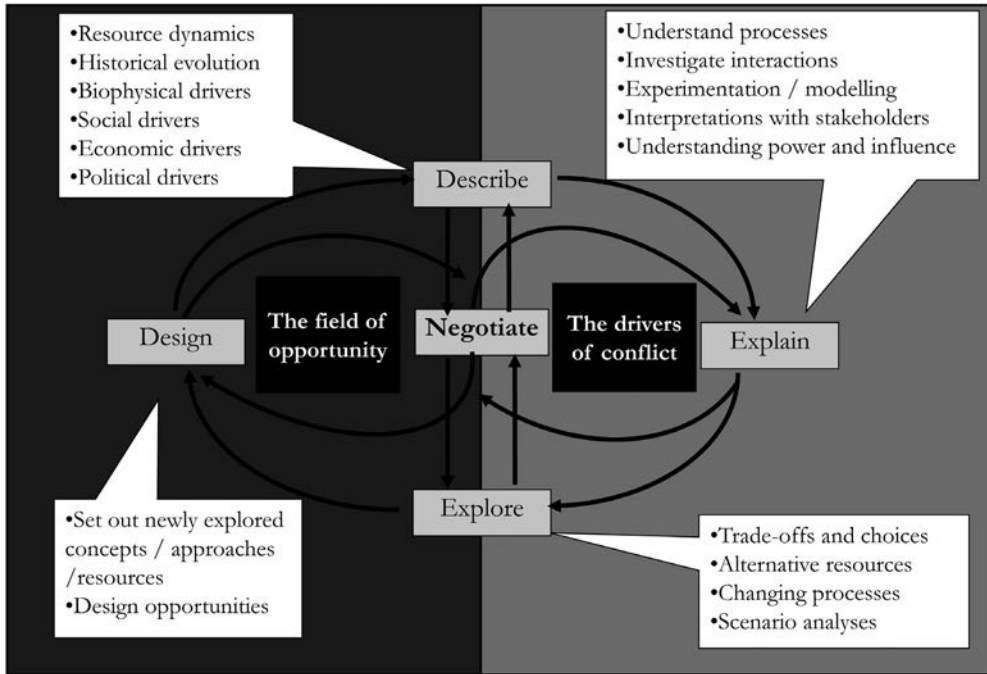


Figure 8.2. Overall methodological cycle developed for the Competing Claims programme, outlining the kinds of activities that guide the interaction between researchers and the stakeholders confronted with competing claims (source: Giller et al. 2008).

The Competing Claims methodological framework resembles the action research cycle of observe, reflect, plan and act. While there are many branches of action research, diverging both in theory and practice, all engage in this type of iterative research and action cycle. What we call the ‘design’ phase of the research can entail collaborative implementation of an action, but it recognizes that the role of the researcher can also be to inform and facilitate the planning of action through improved negotiations. One of the assumptions of the programme is that a positive contribution to societal negotiation may occur when scientists address questions and uncertainties experienced by weaker parties especially, with the intention of strengthening their position in negotiation processes. Drawing on the action research approach, the program proposes that research that makes the choice to be socially-engaged and explicitly political is more likely to contribute to social change (Brydon-Miller et al. 2003). While the programme finds it important to adhere to principles of scientific rigour, and strives to generate answers and conclusions that are as objective and balanced as possible, it thus recognizes that science—regardless of whether it is social or natural science—can never be politically neutral since the *research questions* that scientists address tend to be posed by certain parties rather than others, and

inherently build on specific societal problem definitions, values and aspirations (Alrøe and E.S. 2002; Leeuwis 2004). Differing from some approaches to action research, however, we believe that it is necessary to engage with actors from many different perspectives across levels and scales to gain an in-depth understanding of the conflict at hand. This orientation shapes the role of the researcher as someone who can situate the local context in the larger picture, providing information from different sources, as opposed to a participatory action research orientation that is geared more towards collaborative knowledge generation at the local level. Scientists cannot avoid taking value-laden decisions about which and whose questions should have priority, but we believe that they can assist in answering those questions while being explicit about their assumptions, using methodologies that are rigorous and acceptable to conventional science. We believe that data collection should be interdisciplinary, multi-scaled, and can be both qualitative and quantitative. Engaging with actors across levels allows us to understand the structural context of the situation as well as enhancing our potential to make an impact. Similarly, embracing the 'scientific' character of our work was also a strategy to remain a legitimate player in this volatile and conflictuous research context. The case study described below illustrates how this approach was applied in practice, the challenges faced and lessons learned about how to contribute to negotiations in a conflictive and tense setting.

The research context: competition for resources and resettlement in Limpopo National Park

The establishment of the Limpopo National Park (LNP) brought with it a series of challenges both for conservation and for development. The park is home to 27,000 people who depend primarily on natural resources for their livelihoods. Increased numbers of wild animals and efforts to develop tourism in the park has necessitated the resettlement of eight villages situated along the Shingwedzi River to outside of the park along the Elefantes river. Given traditional land tenure and the lack of land without an 'owner', resettled villages are slated to be situated with host villages that accept to share resources with them.

Resettlement commonly brings a set of risks for resettled residents, from impoverishment to social marginalization (Cernea 1997) and new social conflict for both resettled and host villages (Brockington 2002). In the case of conservation-induced resettlement where original lands are still intact, the risk of residents returning to inhabit original sites or file land claims is significant if livelihoods of resettled residents are not rehabilitated (de Wet 2006). The risk that economically and physically displaced residents utilize resources inside the conservation area, or sabotage conservation projects is also considerable if sustainable livelihood alternatives are not available (Chatty and

Colchester 2002). Conservation-induced displacement has also been shown to cause environmental degradation outside and around conservation areas due to an increase in population density and concentration of resource use along the borders (Rangarajan and Shahabuddin 2006). However, opportunity for viable and alternative livelihoods is likely to reduce unsustainable use of natural resources. In order for the GLTFCA to be a sustainable land use option in the long run, local livelihoods of residents directly impacted by the establishment of the conservation area must be secured as a first step towards the dual objective of bringing development and conservation through transfrontier conservation initiatives.

Given the difficult agro-ecological climate of the region characterized by low (less than 400 mm) and sporadic rainfall, an ability to cope with vulnerability and adaptation to adverse conditions, such as drought, is crucial for local livelihoods. Resettlement is likely to cause residents to alter their coping strategies. Livelihoods in villages both in and outside of the park are based primarily on agriculture, livestock and charcoal production (only outside of the park). While both inside and outside the park agriculture is mostly rainfed, outside the park there are agricultural associations and opportunities to access irrigation. Despite these opportunities and other opportunities for wage labour and market integration, access to natural resources is fundamental for adaptation and mitigation of risk in the natural environment. However, official state-driven modernisation discourse considers salary-based, money-based livelihoods to be better than having livestock and being dependent on agriculture. Government and agents of development consider the area to be too dry and rainfall patterns too erratic to be suitable for depending on agriculture and that small-scale agriculture or livestock rearing does not constitute a modern lifestyle (Milgroom and Spierenburg 2008). As we will see below, these views and conditions play a role in the negotiation process about resettlement.

THE RESEARCHING PROCESS AS IT UNFOLDED, FROM THE FIELD RESEARCHER'S PERSPECTIVE

In this section we will describe some key episodes in the research process. The experiences are written from the perspective of the first author (the PhD student actually doing the fieldwork).

Juggling university requirements and research ideals

I began my PhD with a fair dose of scepticism about the role of science and research in solving real problems. I had been involved in large and small research projects previous to my doctoral research that had left me feeling unsatisfied and uneasy with the balance of resources spent on science and its subsequent relative irrelevance to

society. I wanted to explore other ways to engage in research through my PhD. The questions I had in mind when I began were: how can science contribute to gaining space and leverage for small-scale farmers in negotiations over resources? How can science actively shed light on a local problem? I wanted to carry out interdisciplinary research and be part of a larger project within which other students were also working. I was introduced to the Competing Claims programme and began my research within that framework. As a PhD student I was required to produce a proposal for the Graduate School. My proposal was written after a brief trip to the country (for which I already had relevant language skills) and study site. Given my interests, background and the preliminary experience I had gained interviewing people and visiting the area on my scoping trip, I identified the general research focus as: how can my research contribute to improving post resettlement food security? I had seen that there was a planned resettlement initiative and that food security in the new location could potentially be a problem. Beyond that focus, however, I thought that the process of identifying a more specific research question from the ground was of utmost importance for carrying out research that is relevant to a local problem. I wanted to keep the research agenda open to be able to identify the specific questions after I had a better grounding in the local environment. However, when I returned from the initial exploratory trip and presented my proposal in the university, various comments were made to the effect that my proposal looked more like development work and not research. Many people asked, but what is the research question? Despite being supported by supervisors to tailor my research to a local problem to be defined along the way, eventually I had to specify research questions to meet the academic requirements. Nevertheless, I began fieldwork without any strong theoretical underpinning or specific research questions in mind, forgetting for the time being those I had defined for my proposal. I wanted to have a thorough understanding of the context in which I was working and the problem that I wanted to try to contribute to resolving before narrowing my focus. In order to do this I allowed myself the time to try out topics, bounce ideas off different people and probe the extent to which any results that I might find were likely to be applied or actually contribute to change. While my original intentions of experimenting with how research could be more relevant to society remained present, I did not want to do this from an abstract point of view, or turn it into a research question for my PhD but wanted to take a learning-by-doing approach.

Finding a niche for my research

Using anthropological methods, the first year of my research was based on participant observation, and unstructured and in-depth interviews about livelihoods with a focus on agriculture. I was aware that the context within which I was working, specifically the people involved and my relationships with them, would determine my how and whether

or not my research could evolve into an action research process. I was aware of the possibility that I may not feel legitimate to 'intervene', and that I could not force the situation or make any decisions under time pressure. I established myself in Nanguene, the first village to be resettled, and began to document the residents' lives and learn the local language. I simultaneously built relationships with the park employees, visiting them each time I came in and out of the park.

I was interested at the outset in contributing to food security and livelihood rehabilitation in post-resettlement. I witnessed the effort invested in agriculture under poor rainfall conditions during the first rainy season and I became focused on the working towards improving the agricultural system through trying out social or technical alternatives, as the 'design' phase of my research. I wanted to experiment with and implement alternative agricultural practices together with farmers, driven by their ideas, needs and desires. During this first year I looked for entry points, taking my time observing and asking questions before beginning anything. Several options were considered and discussed based on residents' expression of their major limitations to production. One idea was to study elephant damage to agricultural production and develop a monitoring system for this that could be used to quantify losses and claim compensation. This idea was abandoned later on since it was assumed that such a system would not be of much use after resettlement. Another entry point considered (and actually implemented much later) was to work on seed systems. In view of an observed low quality of maize seed (little distinction between grain and seed), high demand for new varieties, and market for locally-adapted seed for planting, we thought that improving the seed system could contribute to increased food security in the area by boosting production and also by providing a source of income for those farmers who could invest in seed production. This was not a participatory or collaborative decision, but one that I considered based on interviews and discussions and in light of my own interests and need to write a PhD.

Changing roles: becoming an information intermediary

The idea of finding entry points in agriculture was complicated considerably by the fact that there was no rain during the first two rainy seasons. In the meantime, however, opportunities emerged for following the process of resettlement issue more closely. When I arrived in December of 2006, the village was expected to be resettled by early 2007, but was not actually resettled until two years later, in November of 2008, due primarily to political complications. In mid-2007 I began to recognize an opportunity to become more actively involved in the negotiations.

The Mozambican government (Ministry of Tourism) wanted the resettlement process to

occur quickly to be able to focus on developing the national park as a tourist attraction. The donors, however, wanted the process to be participatory, fair and transparent. The first park director lost his job due to this conflict and a second was sent to resolve the resettlement problem. A survey had been carried out in early 2005 in Nanguene to determine who was entitled to what compensation, but the results were not shared with the residents. Models for the houses were built and in an attempt to create a space for participation, residents were invited to see and express their opinions about the houses. Village leaders then began to take a step back, refusing to accept resettlement if the houses were not larger. The park staff changed their strategy at this point and decided to work with the villages that had already agreed to be resettled and that formed part of the pilot project instead of working with all of the village leaders (Milgroom, forthcoming). Higher government officials and World Bank staff were present in meetings shortly after to 'convince' these two villages to sign documents that said they agreed with the model houses, including the size. At this point details about the compensation package had to be decided and a series of meetings ensued. These negotiations about compensation between the park authorities and residents of Nanguene provided the 'arena of conflict' that I followed closely, together with a research assistant from a nearby village. Since I was a resident in the village, or camped at the park headquarters during much of this time I was in a good position to follow the process. I was invited to meetings between the park and the village and soon became by default a means of communication between the two parties. Cell phone coverage was not reliable so I was asked, as someone with a vehicle, to inform the village leader about a meeting, and to bring him and other village residents with me to meetings. The village residents began to ask me about what was going on with the resettlement process, and the park staff began to ask about what was going on in the village. As the negotiation process for resettlement progressed, and concerns were expressed to me from both sides, I began to take a more active role in information exchange. This role for my research emerged organically, and in the beginning I was not thinking about it as a purposeful action, but more a side obligation as a researcher, and an opportunity to access different sources of information.

When I perceived the need for information for decision making about resettlement on multiple levels, and that I could play a role in facilitating that information, I began to realize that perhaps the utility of my research was more as a participant in the resettlement process and less as an action researcher of the agricultural system. Originally I had envisaged the collaborative research in which I was to engage as a semi-formal arrangement for the involvement of stakeholders working together in a concerted action research project on a technical issue, such as resolving a piece of the food security puzzle. I did not give up that idea, but in light of the role as an

information intermediary that I was beginning to play, I decided to be more structured and purposeful in the way I was collecting and sharing information.

I think that I was able to find a role as an information courier because both the park staff and the villagers recognized their disadvantages in accessing information that I could access from both sides. The park staff did not have access to local information because they did not want to or did not have the time nor the relationships to gather it. The village residents knew that information was being withheld from them by the park staff and feared that they would be or were being manipulated. Outside observers attempting to make sense of what was going on in the park, such as donors and consultants, were also in need of insight about the resettlement process. One donor representative regularly met with me to discuss what was going on in the field because he felt that his contacts (the park and higher-level government staff) were sharing information selectively. This was specifically the case with respect to conflicts and complications that were arising between village leaders and the park staff, misunderstandings within the village, and pressures exerted by the Mozambican government to override the donor's wishes, those the representative was there to protect. There were no other researchers carrying out fieldwork on the topic of resettlement at the time.

Walking the tight rope: maintaining trustworthiness and managing impressions

In a societal negotiation process information can be highly sensitive. When questions were directed at issues that I felt confident answering, I had to be careful about the provision of information so as not to threaten my relationships with either the park or the villagers, despite the lingering sensation that it was my chance to make a difference, to influence the course of events and gain some ground for the villagers who were to be resettled. Mostly I held my tongue, recognizing that what I thought was helpful might actually contribute to the villagers' losing ground. Thus, when either side would ask me clear questions about the other, I would tell them that I would ask and get back to them with the answer the next time. Moreover, I often had to be very clear about the limitations of what I knew. Authorities or interested bystanders would typically ask me to give voice to all villages destined for resettlement with questions such as, 'do people want to be resettled?' etc., and I had to be careful to say that I only felt legitimate talking about the small village in which I was working, and that there was no one single answer for the whole village. Other times they would ask for an opinion about issues at hand and how they should be handled—this was the most difficult for me because I feared influencing things in the 'wrong' way.

With both parties, I spent my time asking questions about perceptions, ideas,

preferences, problems and worries. I stated my opinions very rarely to villagers and only when expressly asked to do so. When the villagers expressed doubts about what the park was doing, I would tell them, 'I really don't know, but I had heard that...' and carefully state information about which I felt very confident of its validity. I wanted to provide clarification without risking misunderstandings because I was unsure of how what I said would be interpreted. I did not want to raise false expectations, or spread incorrect information because I could not be sure that the information that I was getting from the park was the whole story and because I knew that the story was constantly changing. Related to that, I was concerned with being used as a puppet in discussions between the park and the village—I did not want to risk the villagers saying, 'but Jessica said...'. I was worried about this for two reasons: 1) I thought it would change my relationship with the villagers if they thought they could 'use' me, and not just the information that I could provide and 2) I needed the park to support my research and I wanted to maintain integrity and transparency about my activities. This decision about how and how much information to share was one limitation inherent to the conflictive context. I was unwilling to risk losing access to the research site, or losing trust of the park staff by explicitly 'taking sides' or by providing information that may, or may not, have been empowering to the village residents. I felt that playing a role as an information intermediary had more potential for positive effects in the tense political environment than a more frontal approach.

However, when I had a chance to converse with park staff, I was more open about my opinions. I felt that there was less at stake, less risk of misunderstanding because I was not working through a translator and because I understood their culture better than that of the rural village. I began to note what types of approaches and timing were more effective, who was receptive to clear transmission of information, and who was receptive to indirect comments, etc. Although I found that staff was most receptive to questions, carefully respecting hierarchy as a foreign woman student (it was clear that they didn't want to feel that I was criticizing them or telling them what to do), I tried to suggest constructive ways to deal with conflicts such as calling attention to a need for clarification on specific issues and proposing small, inexpensive improvements for post-resettlement conditions. Some examples of these proposals (that came from conversations with residents) were to, provide seedlings of local tree species instead of just domesticated introduced fruit trees such as mangos and papayas, provide seed of new varieties instead of the most common introduced variety that is known to be adopted only partially, to erect a plaque in the original village location after resettlement to mark the social history of the park, and to carry out a history project to document the history of the village.

Over time I began to express my concerns about issues that I thought to be of utmost importance. For example, I made it clear to all parties that I thought it was necessary to invest first in securing land rights, then in building the houses and to secure enough land to facilitate the growth of the village over time, and to provide land based on family size, not just the same amount of land for each family unit. Park staff felt that the village residents could negotiate their own access to the land that they needed but I was observing growing apprehension on the part of the resettled village, resistance on the part of host village and blatant conflict between the leaders of the surrounding villages about who would cede more agricultural land to the resettled village. Much of the conflict that was arising was the result of actions taken or not taken by the park itself, such as promises made to the host village that were not fulfilled and that therefore led to a diminishing willingness to accommodate resettled residents and their need for access to resources.

With both of the main parties in the study context I had a lot of 'impression management' work to do. Even when I had been working in the village for 18 months, the villagers still asked me every so often what I was really doing and if I was working for the park. This is because villagers would see me at park headquarters and see me interacting with park staff. The concept of being a student for so long and carrying out research activities was also unfamiliar to them and therefore difficult to understand. Among the park staff it was my experience that social researchers were not appreciated in general because of what the staff call 'biased work'. They accused researchers of talking to residents and not to park staff, publishing their one-sided opinions, and of being used by residents to publish lies by writing about things that they do not understand. The LNP had had experiences with researchers criticizing their work and with journalists publishing negative statements about the park and its treatment of residents. This was considered especially harmful for a project of its size and fame, because the authorities depended on a positive press for the success of the greater conservation area (including in South Africa and Zimbabwe) in attracting funding and tourists, and in order to promote the development-via-conservation initiative elsewhere in the country. One park staff member said to me, 'There have been a few articles written criticizing the park and resettlement, but really there are two types of judgment: value judgment and fact judgment. Value judgment is difficult because it is based on opinion, personal values of better or worse, but you will be measuring FACT of what there is in one place and the other, what people do in one place and in the other.'⁷⁴ This comment was made because of the amount of time that I had spent observing the process, getting to know both sides of the conflicts, and my proposal

⁷⁴ Interview, LNP staff, Massingir, June, 2007

to quantify differences between pre and post resettlement locations with respect to resource endowment.

I was able to overcome distrust partially, especially with the community and only some of the park staff. The extended period of time during which I was conducting research in the area helped to build my credibility, reinforced by my attempt to construct positive alternatives instead of criticizing, and by my focus on agriculture (that although it became secondary was always present throughout the research process), were the three elements that I think helped to build rapport with park staff. However, as in the village, I experienced relapses at certain times, when the staff doubted my 'loyalty' to their 'side', especially when they saw me interacting in a friendly way with residents, and even more so during tense political times. For example, when donors or consultants came to visit the project to decide about whether to provide a 'no objection' or permission to go ahead with an important issue, sometimes park staff would facilitate my meeting with them and other times they would make it difficult for me to meet with them if things were not going well, out of fear of what I might say.

Some issues that were crucial to this 'walking the tightrope' were the timing of information sharing and maintaining a low profile. Sometimes I would wait months to share a certain piece of information or ask a certain question. For example, when I knew that park staff was busy with political visits or being pressured to perform, I chose to wait to ask about a technical issue until technical decisions were being made again. I felt that otherwise my input would be discarded as irrelevant at that moment. I found it useful to be always flexible and opportunistic about time and plans. Whenever possible I also waited until my information was solicited instead of trying to offer information.

Some examples of research(er) influence

It is impossible to know precisely how my presence, questions and suggestions influenced the events that took place. However, I documented all of the conversations that I had and noticed that sometimes issues that I had raised were taken up again in meetings, debates and informal discussions. Many times issues that I thought were important were not acted upon. A few examples are given below of when they were and were not attached to policy changes and actions.

Influencing resettlement policy

A consultant hired to draw up the resettlement action plans was keen to bounce his ideas off me—knowing that I was in close contact with the village whose future he was planning. As an independent consultant he was not under the pressures of the

government and he was interested in drafting a fair and equitable resettlement plan as close to the World Bank guidelines for resettlement as possible. He consulted me on issues concerning the local agriculture system, land tenure, and off-farm access to food and money. I would take his questions back into the field and discuss them with the villagers. One example of a topic that we debated and discussed was the access to agricultural land in post-resettlement. He made calculations based on the number of hectares per person a family would need to be able to produce enough food to sustain itself. This was to be the amount of land that each family would receive in post-resettlement. He was under the impression that labour was a limiting factor and that the tendency to have large amount of land per family was because of soil fertility management practices in shifting agriculture. My research had found that in fact labour was not as limiting as rainfall and that all the hectares available to a family would be used in the case of a good rainfall event. The harvest would then be kept to tide families over until the next harvest—which might not be for several years—and therefore having access to large amounts of land to ‘capture the rainfall’ when it came, was important for food security. He also was unaware of the opportunistic practices in agriculture that farmers use to respond to spatial variability in rainfall. Their fields within the park were spread across the landscape and farmers planted in one or another depending on the rainfall patterns of that particular year. Because of the ecological consequences of opening up large tracks of land and the economic cost of doing so, he changed the Resettlement Action Plan proposal to include access to more agricultural land that families could open as they needed to, in addition to the fields that would be opened for them in the resettlement location. I also brought up this issue with one of the donor representatives, and the park administrator at the time.

However, the Resettlement Action Plan was adhered to only partially. Instead of providing land on the basis of the size of the family, each family was given a fixed allocation of one hectare and no land was set aside for future agricultural expansion. Therefore the impact of my work on the temporal and spatial variability of semi-arid farming was eventually minimal for Nanguene. Two years after resettlement it is clear that access to land for cropping is a problem, especially for more marginalized residents who are not well connected into the social networks of the host village. It is not just a problem for the villagers, but one that the park is still dealing with, and based on this it has been planned that the next village to be resettled will receive more land.

Correcting the number of houses

The original survey of the families in Nanguene concluded that there were 16 nuclear families. My work in the village concluded that there were 19, according to the definition of family developed and used by the park. I discovered that this discrepancy came

about because some people had moved back to the village since the survey that the park was using had been done, and some had moved away. The survey had been originally carried out in early 2005 with the intention of moving people that year; however, I began my research in late 2006 and the figures I generated were already different because of these movements. Meanwhile the plans for resettlement were still being made. The leader of the village reported these changes in the composition of the village to the park, but regardless, they were not recorded officially in the plans for resettlement. Apparently only 16 families were to be resettled, leaving four families without resettlement opportunity; further, the plans made provision for one family that no longer lived in the original village. I brought up the issue with park staff, consultants, and donors. Eventually someone was sent to the village in 2008 to confirm the survey data discrepancies. It was decided finally that 18 houses would be built in the resettlement area, leaving one woman with four children without a house, as decided by the village itself because she had left her husband's household. Park staff argued that they could not provide her with a house against the wishes of the village (the decision did not reflect the villagers' wishes, but the opinion of one important elder) and never mentioned the case to the donors.

Marking local history

In my discussions with village residents, the issue of the importance of their ancestral land came up. An anthropologist working in the park in 2006- 2007, Rebecca Witter, had suggested the idea of a marker, a plaque to document the cultural history of the area. When discussing this idea with the residents I found that they heartily agreed. I brought up the idea with park staff, consultants and donors. In order to decide what to write on the plaque, it was agreed that I would bring two historians to the villages that were included in the pilot phase of resettlement, to record the villagers' oral histories. These histories were to be documented for future generations in the case that resettlement disrupted the history of the village. The recorded histories were meant to be kept with the park in a place accessible to interested researchers or tourists. However, the park did not follow through on this, nor have histories been shared with the villagers. Without any further consultation with me about it the plaque was built and put in place the week after resettlement, so the resettled residents never saw it finished. The plaque erected where Nanguene used to be simply said that 'a village used to exist in this location', but a year after being erected it is broken and no longer legible (Figure 8.3). Residents were pleased that the plaque was to be erected, but were upset that they were never consulted about what would be finally written on the stone, or the design of the plaque. They never knew that I had suggested it to the park staff, but may have guessed it. I did nothing to follow up on the issue because at that time I did not have an open channel of communication with the park staff at that point.



Figure 8.3. A picture of the broken plaque, 16 months after resettlement. (Photo credit: J Milgroom, March 2010)

Setting agendas for further action

Through my research, another issue emerged that was worrying the residents to be resettled—especially the women—about how they would be received in the post-resettlement host village. I showed resettlement staff a figure that depicted the results from the exercise, that ordered separately the men’s and women’s priorities in post-resettlement where it was clear that above and beyond anything else was their concern that they wouldn’t be treated well by the host village. How they would be received would determine their eventual access to resources, but also their experience in public places such as getting water and their children’s experience in school. I discussed these findings with park staff and the following week a meeting was called with the leaders of the host villages and the leaders of the villages to be resettled to specifically discuss ‘how the host village will receive the resettled village’.

The meeting that ensued was long and complicated, and the conclusions not hopeful for Nanguene. There was a conflict about the agricultural land and access to fields. Neither the host village nor the neighbour village would agree to budge on allowing Nanguene residents’ access their resources. It was agreed that there would be a party to welcome the village, but neither side wanted to contribute to it. At that point residents were in no position to protest because they already had agreed to be resettled, already had received their compensation money and had no leverage to

change the situation. I also was in no position to do anything but observe because of tensions that were mounting as described below.

Compensation for fields

The first step in the actual physical resettlement was the transportation of posts for building their kraals (livestock pens). There had been discussion between park staff and the village leader about when this was to happen, but no concrete day was set. Suddenly the leader was informed that the truck would come the next day, but they had still not received the compensation money for their fields and houses. The leader called the park and said that they would not allow the posts to be transported until they had the money in their hands. Payment was arranged and the transportation was scheduled for another day. As described above, the survey of families to be compensated in resettlement was carried out in 2005. At that time their fields were also measured, but three years later their fields had expanded, other fields had been opened and those families who were not surveyed in 2005 never had their fields measured. The compensation process for cultivated land was not transparent and it was not clear until the very last moment who was going to be compensated for what and how much, especially for those families who were not surveyed in 2005. After the compensation had been paid in cash, it was clear that some families had not been fully compensated. While the people concerned knew that they were not fully compensated, they did not know how much they were still owed. I measured fields in 2008 as part of my research and I happened to be present on the day this discussion was taking place in the leader's house. I offered to compare the number of hectares compensated with the number measured for the families that had doubts.

The leader of the village at that point did something that he had never done before. He used my presence directly to leverage his interests. He said on the telephone to park staff: 'We still have problems here that need to be resolved. I have told Jessica that there are things that need to be cleared up.' He said again that he would not allow the posts to be transported until all of the compensation was fully paid. The park staff member replied that there is nothing missing from the compensation and that the posts would be transported the next day. At this point the leader again (without me knowing it until later) utilized very subtly my presence to make his message heard. He asked my assistant to write a message (SMS) from his phone to the park staff in Portuguese. The content of the message is not as significant as the fact that he is very capable of writing his own messages in the local language, but chose to ask my assistant to write it for him in Portuguese, as if to insinuate that I was supporting him, or telling him what to write, or even perhaps writing it myself. At the moment itself I did not realize that she was writing it in Portuguese and assumed that it was in the local language.

Soon after the message was sent, a representative from the resettlement team appeared in the village to smooth over the problem. They promised that all compensation would be paid, that the fields would be measured, but that they had to allow the posts to be transported the next day. The leader gave in to this pressure but unfortunately the fields were never measured and the full compensation was never paid (although a symbolic amount was paid to a few people).

Untraceable consequences?

These small debatably traceable events are minimal potential effects of my presence. I think that the untraceable changes may have been more profound. Some of these have to do with identity and status. Some villagers had the impression that by my presence in the village, and by my studying the resettlement process, they gained leverage with the park.

In May 2007, I was discussing with the leader of the village about the purpose of my research and why I attend the park meetings with them. He said:

No, the park does not want you to be there. They tell us things that we write down but then we show them later what we wrote and they say, no, we didn't say that. But if you write it down they can't say that they didn't say it. [...] They don't like you because you are white and they are black and we are black. They don't want you at the meetings, but you should go to them.⁷⁵

At this point he was more aware than I was about the park staffs' feelings about my presence in the meetings, that were to surface later.

A year and 4 months later, after an interview in one of the households in September 2008, right before resettlement, I asked the head of the household (whom I was interviewing) if he had any questions for me, as I always do before finishing any interview. He responded: 'No, I would if it was the first time I am seeing you, but I know now what you are doing so I don't have any questions. Those guys at the park are afraid of you. They respect you. Because you are here they know that if they don't do what they should, they will go to jail.'⁷⁶

Despite having never said anything before about me, my role with the park, or my research over the two previous years, he suddenly made this comment out of the blue. While it is unlikely anyone would go to jail, his perception of the influence of my presence in the village was surprising, even for me.

⁷⁵ Informal conversation, Nanguene, May, 2007

⁷⁶ Interview Nanguene, Sept, 2008

Another less traceable influence of my research was that it may have raised the level of preparedness of community members when interacting with others. When I was finishing my fieldwork, various local residents made comments about the questions that I had asked them over the years. One said clearly, 'All the questions you have asked us prepared us for when other people come to ask us things. We wouldn't have known what to say.'⁷⁷ As the first village to be resettled, Nanguene received many visits from donors, WB, NGOs, government officials and interested parties, all asking the same questions: are you happy here? Are you satisfied with resettlement? The work that I had done with them of asking these questions since 2006 about their expectations, and their priorities in resettlement, about the process and the negotiations, and then about the results and their level of satisfaction, requesting them to be specific about justifying their answers apparently helped them to know what to say to others who were intimidating, less specific, etc. The disposable cameras that I had provided them with to document their lives pre and post resettlement also apparently were very helpful for them. One resident said, 'Those pictures have really done their job. Every time someone asks me about what my life was like before resettlement, I show them the album. They see the trees that used to feed us, the grass that our animals used to eat, our fields, our river...'⁷⁸

Becoming controversial: losing access to the park

In the third year of research, the park director was replaced yet again. This changed the dynamics of my researching process and the role I could have for the park in the resettlement process. The new park director was a forceful presence sent there to make changes to the process of 'getting the park up and running'. Many people became scared of losing their jobs, leading to back-stabbing and political manipulation to gain favour with the new director. Resettlement was the hot political issue of the day and it was well known that it had been the motive for removing the previous two park directors. Development of the park as a game reserve was dependent, in the eyes of the park administration, on removing people from the inside of the park area as quickly as possible. Any real or perceived obstacles to quick and efficient resettlement were problematic from the new director's perspective.

In October 2008 I was told that I was a persona non-grata in the park (by one of the park's staff with whom I had most closely worked). He told me that he had been told by various sources that I was organizing meetings in both the resettling and host village and convincing people not to be resettled or to accept the resettled village. I had been working with him since the very beginning of my research and was very surprised

⁷⁷ Interview new Nanguene, June, 2010

⁷⁸ Informal conversation, new Nanguene, April, 2010

by his change in attitude, since he had always been supportive and facilitative of my research. He knew better than anyone else about my position: my philosophical outlook on the research, my desire for a positive outcome from the resettlement process and my goal to contribute to that positive outcome through my research. Although he never told me so directly, I interpreted his warning as a sign that my relationship with him suddenly had become a threat to his own interests, and his job security. I had become identified by the political authorities as a threat to the success of a quick resettlement process because I was perceived as representing the rights of the first village to be re-settled, and the assertion of these rights was seen to delay the process of resettling other, and larger villages. However, the official reason given for not wanting me to continue research in the park was that my permit was no longer valid, and that I was doing things that were not included in my written permit.

The fact that the park felt threatened by my research reinforced the villagers' impression that my presence was beneficial for them. It also showed the tenuousness of the delicate role that I was playing, and how the potential for acting as an information courier in a process of negotiation and mutual learning depends on a series of conditions that need to be in place to favour that work.

Despite the fact that I was not welcome inside the park, I continued my research in the resettled area. I felt that without access to the opinions and perspective of the park staff, my story suddenly became somewhat one-sided. I did what I could to talk to the people I still had contact with from the park, but had no choice but to focus my work more on the perspective of the residents.

One evening, sitting with the resettled village leader he asked my assistant if she could help him write a letter to the district administrator about some issues important to their situation in the new village. Nervous about creating misunderstandings with the district government, I asked him not to mention that she had helped him write the letter because of her relationship with me. Neither the residents of Nanguene nor I ever talked explicitly about the conflicts that had arisen between myself and the park administration, so I explained. He responded as follows:

That sounds like the park. It is the same with ORAM.⁷⁹ In meetings they say they have an NGO to help communities, but out of the meetings they tell ORAM they don't need anyone to get involved with the communities' issues. They tell them they can't even go into the park and have meetings. The problem is that Mozambique is still in colonialism. Even

79 An NGO that works with raising awareness about communities' rights (Rural Organization for Mutual Support)

in the bible there is only a small section written for Negros because they don't want us to know more, they want to keep us in the dark. It is like the Mozambican state, they don't want us to know anything. The park too wants to keep information from us. [...] But don't worry, even in meetings we say what we want and they understand us. They shouldn't think you are causing any problems because the ideas come from us.⁸⁰

While not surprised about the parks' reaction to my work, he was also assuring me that the ideas, demands and actions that have proven to be problematic for quick resettlement in fact come from them and not from me. Again this reinforces the idea that any influence that I might have had in the process was not manifest necessarily in tangible terms; the consequences of my work were much more subtle. None the less, it was enough to find myself outside the park gates looking in.

Soon after being barred from the park, one member of the resettlement staff was fired and four more resigned from the park because of the same political changes that excluded me, mainly in response to the leadership style of the new park director. This left only one person in the resettlement team, that person being someone relatively new to the park staff, and wiped out most of the institutional memory of the resettlement process.

Beyond information intermediation: supporting integration in post-resettlement

In pursuing my ideas about improving agricultural production in post-resettlement, I secured funds for a small project to test new varieties and work on maintaining quality seed through multiplication and conservation. This project was carried out with the host village on the lands of the agricultural associations that have access to irrigation. The intention of the project was to work primarily with Nanguene, but with the lack of irrigation resources where the new fields had been opened, and no rainfall, it proved very difficult to work with them on this project. We therefore carried out the variety trials on the associations' fields, and attempted to include the resettled villagers in the activities. Before the project was implemented I had asked many people in the host area if they thought Nanguene would be welcomed into the associations. Everyone replied 'yes, of course', but when it came to actual implementation, no-one from the resettled Nanguene responded to invitations from the traditional leadership structure of the host village and participated very minimally in the experience of the field trials. However when I personally invited them to participate in meetings or trainings each and every resettled family sent someone to participate in the activity.

Leaving aside any potential contributions to food security, this project served as a

80 Informal conversation, January, 2009

vehicle to explore the dynamics of integration between the two villages. In this case I was more boldly vocal in pointing out that the very fact that the project existed, and was needed, was as a consequence of the resettlement and used this as an argument to bring the two communities together in a project. I chose not to request anything from the host village for Nanguene, or speak for Nanguene's needs, but continued to invite them to participate as if they had always belonged there. I also asked key hypothetical questions informally about access to resources (mainly rainfed fields) for the newly resettled village, about for example, what might happen in the future when there is more need for land for Nanguene residents' children, and possibilities for entrance into the agricultural association. By doing so, my role changed from being merely an information intermediary to a more activist role where I used technical research activities not only to help solve technical problems but also as a strategy to enhance relationships between the host village and the former Nanguene villagers.

Re-gaining access to the park

When the project activities had finished and I was wrapping my fieldwork, I requested time from the park to present the results from my research and from the project activities. Around the same time I was contacted by someone involved in monitoring a World Bank project that funds transfrontier conservation areas and also tends to visit the Limpopo National Park. That person asked me to prepare a presentation to send to the coordinator of the mission to request a slot for me to present to the group involved in the mission. My request to make a presentation at the park was not addressed or responded to until the presentation that I prepared for the WB mission was circulated to Ministry of Tourism, at which point I received a personal phone call from the same park director who denied the continuation of my permit to work in the park, inviting me to make a presentation to the park staff. He did not attend the presentation, but it was openly received by the other staff members present. Many of the issues were debated and few points of disagreement were raised about my findings, opening the doors again, at least officially, to work in the park and to provide feedback on the resettlement process. Given that I observed and documented closely a process that the team currently working on resettlement had not been witness to (since the park staff present at that time had left) I presented some issues that were unfamiliar to those attending the meeting. I expect that any lingering negative feelings towards my work were simply not expressed and that some park staff members are glad that I have finished my fieldwork for the time being. However, the official 'green light' and access to the park provided me with the opportunity to ask questions and document the perspective of the park staff once again, even if my feedback was not well received. I knew that my research was unable to capture nuances of particular issues and events by speaking only to the village residents and onlookers, and in the

last months of my research I was able to fill in important gaps in my data and discuss my findings with some park staff.

I contacted the district government to request time to make a presentation for them and they invited me to their governmental session, but when, supported by park staff, I requested that the presentation be attended by community members, NGOs and other stakeholders, they refused saying that it would be too conflictive and that they were not interested in that sort of meeting.

DISCUSSION AND REFLECTIONS

In this section we—the PhD student and two members of her supervisory team—reflect on these research experiences against the background of our conceptual assumptions and ideas about the role of science in societal negotiation. Several issues come to mind.

It is not eventual research outcomes that mattered

Our involvement in the resettlement process in Limpopo National Park taught us that it is not the research results that influenced the societal negotiations. Only part of the data on resources in and outside the park have been analysed, and very few of the findings have been written down in a formal report or scientific article in the period described in this chapter. Nevertheless, we can point to clear moments in the process where it is likely that the research as a directed and purposeful activity had an influence on ongoing societal negotiations. The initial ‘simple’ inventory of people and their resources, for example, did change the views of park authorities on the importance and intensity of agricultural activity in the area, and led them to think more seriously about post-resettlement scenarios. It is also clear that the community used relevant information from the research in their negotiations with authorities. Moreover, there are indications that they felt empowered, or at least supported by the presence of an outsider who recorded their resources and monitored the process.

We suggest it was the process and activity of doing research, especially in terms of three parameters—presence, information and dialogue—that may have contributed to any improvement in the quality of societal negotiation. Our examples indicate that ‘presence’ is multi-faceted, involving (at a minimum) role, identity, and status; and that it is always in flux in a dynamic of power and an unfolding story that is to a varying degree outside the researcher’s control. Research-derived information, provided as basic, descriptive, and aggregated data, clearly played a role in some instances in improving the quality of the information available to the negotiating parties. The dialogue at times was enriched by the simple figures, tables or maps and other graphical representations provided, as in the results of the pairwise ranking exercise about

priorities for post-resettlement. In terms of the overall Competing Claims research cycle (see figure 8.1) this implies that, in order to have influence in societal negotiations, it is not always necessary for the researcher to 'go full circle' – the 'describe' activity alone can already have impact if communicated to the right actors at a time and in a format that they are receptive to. Inquiry and preliminary results from the process of describing and explaining can spark exploration and design by stakeholders in practice. Systematised, polished, thoroughly analysed and conceptualised research results played no part in the case presented in this chapter. Despite this fact, the researcher was engaged in a constant process of data analysis, and of checking assumptions in a cycle of reflection and action, vigilant about the integrity, ethics and rigour of her research and aware of potential unintended impacts resulting from the research activities. The idea of what kinds of 'scientific work' is expected to influence societal negotiation clearly needs reconceptualising.

Combining research with information intermediation

Our experience indicates that performing research activities and producing scientifically credible outcomes may need to be combined with playing the role of an information intermediary. Phrased differently – a researcher can play a useful role in communicating insights and concerns from one stakeholder to another, thus enhancing the transparency in the negotiation process. Without such exchange activities the influence on the societal negotiation process would probably have been less. The intermediary activity involves not simply providing and diffusing information, but rather engages the researcher in a delicate process of 'walking the tightrope' (see above) in which active maintenance of trust and relationships is of critical importance. Combining these roles proved challenging and required considerable investment of time and energy. On the other hand, the effort proved informative, contributed greatly to the richness of the research and was key to informing negotiations.

It is relevant to note that information intermediation is clearly not the only role a researcher may usefully play. The fact that this role became so prominent seems clearly related to the specific context in which the research took place – a still ongoing negotiation process in which compensation about existing resources played an important role, where many basic data were lacking and where communication between stakeholders was complicated by a range of practical conditions. Later on, when resettlement had actually happened, the context of the research changed markedly, and so did the role of the action researcher. In terms of the overall Competing Claims research cycle the later roles played by the researcher seem to be more associated with the 'explore' and 'design' activity. An interactive action research cycle of observe, reflect, plan and act was engaged in at earlier stages, informing the researcher's actions

about how best to communicate with different actors. Thus, our experience seems to suggest that the role a researcher plays (or can legitimately play) may be contingent on the specific time and space context of societal negotiation. This implies that figure 8.1 may too simplistically suggest that one can become embedded in a context and go through the full proposed methodological framework.

The importance of independence and informality

It is relevant to signal that the intermediary role played by the researcher was informal. There was no previous agreement between the various parties that such a role would be played. Although the research activity itself had a greater degree of formality in the sense that it was based on a peer-reviewed proposal, and all the required permits were obtained before starting the work in the study area, it remained a relatively independent and low profile PhD project, with no formal connections to the resettlement process. These conditions were probably conducive to making a constructive contribution to the societal negotiations. On the other hand, these conditions do raise questions about sustainability and ethics. The informal arrangements that were forged in the interactions among the various interests depended entirely on the researcher's physical presence in the area. The direct effects of the research did not go beyond the impacts of changes made during the time of fieldwork. Perhaps some indirect effects will prove more lasting such as facilitated learning and awareness about political processes, but the majority are unknowable, embedded in the lived and felt experience of others in their interaction with the researcher.

One could question the ethics of intervening as an intermediary without explicit agreement on the 'rules of engagement'. Although in this case the researcher acted according to her personal ethics (asking permission to share information, etc), there was a sense of betrayal among the park staff when they saw her written work for the first time. When asked for feedback on the first article to be published from the research, one of the park staff (electronically in writing) made a few edits and comments about the assumptions made in the paper. Later in person he said 'I was surprised and disappointed that you wrote that paper. I thought you were only interested in agriculture.' Then in reflection said, 'It is necessary that someone document this process and I am glad that it is someone who knows us and understands the issues we deal with.'⁸¹ Although it had been explained that the research was exploring the process of resettlement, the response from the park staff can be explained by various motives: it is very different to see your actions and words written down than to live them or say them, and interdisciplinary research is not common. Since he also saw the researcher

81 Informal discussion, Maputo, June 2008

carrying out more technical research, it is possible that he did not fully understand that the social aspects would also be considered results of the research. He may also have expected the paper to favour the park more than it did because of our friendly relationship that gave way to many hours of discussion and understanding of the problems that they were facing. His response sparked a reflection on whether or not the researcher was explaining clearly enough her research to all parties involved. As mentioned above, we believe that it was precisely the informality of the arrangement that contributed to the workability of the role of the researcher as an information courier. If the arrangement had been formalized, we believe that it would not have been as effective as it was.

Overall it remains a question of how researchers can manoeuvre themselves into a position to legitimately conduct research and perform intermediary roles in a conflictive setting. No clear institutional arrangements, mandates and finances are available for this in most contexts, and even in many university settings it is not very common to do this kind of work.

The feasibility of doing collaborative research in conflict situations

In our initial ideas about the research in a competing-claims setting, particular reference was made to the idea that the research needed to be 'collaborative'. Commonly this notion suggests that the research is deliberately designed and implemented in close collaboration with stakeholders. When looking back at our research, we must conclude that the research was more 'interactive' than 'collaborative'. The interaction between researcher and researched has enormously influenced the direction of the research – the topics deemed relevant shifted all the time based on the input from stakeholders. The stakeholders interacted with the research in different forms, as respondents, key informants and as actors that actively questioned the researcher in an information brokerage role. However, it remains the case that it was the researcher who eventually decided lines of inquiry and the methods to be employed. In hindsight, this way of operating resulted from two circumstances. First of all, the fact that the research was part of a PhD experience, operating on a limited budget, meant that academically-determined factors (such as academic requirements, supervisor preferences and timelines) originating from interests external to the context, had to be taken into account. Major obstacles to a more collaborative research process included the tense political atmosphere, unequal playing table, researcher's fear of being used, blamed, etc., of losing access to the research site, or worsening the conflict. In hindsight, other forms of interaction may have been more powerful, impactful or effective, but in the specific context and timeframe encountered, the researcher consciously and purposefully chose interactive research as the best possible strategy.

In other respects, the conflictive setting—created by a rather disruptive pressure originating from higher and more powerful levels to establish a transboundary park—proved a conducive context to do research (as was anticipated in the wider Competing Claims programme). The park staff, the village leaders, government and donors were all on a steep learning curve because this was the first resettlement project to be carried out from a national park with the intention of fair compensation (i.e. by using the World Bank resettlement framework). When the researcher arrived, it was a somewhat vulnerable time for all stakeholders. The process and contours of resettlement had not yet crystallized fully, and the park staff felt caught between the demands from government and donors, and the village residents. It was also an uncertain situation for the villagers because they were negotiating their future in an as yet unknown context, were unused to negotiating with ‘superiors’, and they knew that they lacked information. This mutual vulnerability might be considered a pre-condition for their interest in information-seeking behaviour and their willingness to invest in learning processes (see Leeuwis 2000, 2004). In this sense the timing of the research happened to be right. As shown by Schut et al (2010), policy processes tend to also have phases where new information and insights are no longer welcome; such a moment arose when the new park director arrived with a mandate to speed up the process.

Scientific criteria and political engagement

As explained in section 2, an important assumption in the Competing Claims programme philosophy is that science can be combined with engagement with the weaker parties in a negotiation process – in this case, the communities that were to be resettled. Our experiences in this research indicate that this is indeed possible but that it requires considerable investment in relationships, and simultaneous effort to ensure that also the stronger parties benefit.

An important implication is that ‘engagement’ is always and necessarily ‘situated’ and not necessarily-repeatable. The forging of relationships was important to accessing the information in the first place, to controlling its quality, and for how its role in dialogue was shaped. By embedding information in relationships and context, one tends to gain accuracy and precision and lose generalisation and replicability. However, this does not take away from the scientific rigour of the research.

Further, the information provided by the researcher in her intermediary role proved to be relevant not only to the weaker parties. In fact, one could argue that when weaker parties had access to certain information (e.g. the amount of resources they were using) this information became simultaneously relevant to the stronger parties as well, if only because it created the need to be able to respond to the claims made by the

former. Hence, authorities too valued the information provided through the research. However, when key relationships in the park were replaced, this virtuous dynamic collapsed and the presence of the researcher immediately resulted in conflict that could only be resolved partially (and after considerable time) by renewed effort and investment in building relationships of trust and mutual benefit.

CONCLUSIONS

We have seen in this chapter that enhancing the quality of societal negotiations through scientific research is not a matter of identifying the most pressing questions and uncertainties, then returning to scientific 'business as usual', and reporting the findings when all the material has been analysed. It is crucial to be involved in the on-going negotiation process, and serve to enhance transparency on emerging issues on the basis of still rather crude and preliminary data and findings. In essence this means that scientists must adapt both their view about what constitutes 'a useful result' and about when such a result should be delivered. In an on-going process of societal negotiation, one cannot predict in great detail when what kind of information will be relevant and make a difference. This means that 'being around' and being willing and prepared to give and input when an opportunity arises, are important requirements for scientists who wish to contribute to dealing with complex problem settings. Scientists must not only do research, but can also become information brokers, a difficult but important role to play, especially in a conflictive situation. Regarding the 'politics' of science, engagement with weaker parties through posing non-neutral research questions, and then otherwise refraining from explicit and open political support to specific parties in the conflict, proved workable and meaningful. As anticipated, it led to the generation and exchange of information that could be used strategically by weaker parties, and hence became relevant to others as well. The choice to leave the real politics, advocacy and strategic information use to the stakeholders, made it possible for the researcher to remain credible and relevant in the long run, albeit with the necessary hick-ups. Working in this manner required a lot of investment in, and maintenance of social relationships with different stakeholders. In the current academic climate, it is not self-evident that researchers have the time, space and competencies to engage with conflict situations in this manner.



9

Living the unfolding process of resettlement

INTRODUCTION

Many studies of resettlement adopt a quasi-experimental, before-and-after research design that focuses on a comparison of the livelihood changes that resettlement brought about (Scudder 2005), or seek to understand impoverishment outcomes of resettlement. The latter is largely due to the focus on impoverishment risks and income restoration that Cernea's IRR model brought to the study of resettlement (de Wet 2006: 210). The aim of this thesis was to understand resettlement as an unfolding process in order to generate insights not readily available through a comparison of livelihoods and well-being before and after resettlement.

Previous chapters in this thesis have presented the resettlement of the village of Nanguene in terms of specific empirical and/or theoretical concerns. This chapter offers an account of the unfolding process of the resettlement of the village of Nanguene as we, the residents of Nanguene and I, lived it. Various highlights of the story have been presented and analysed in the empirical chapters, at the cost of insight into the narrative that can be provided only by scrolling through the residents' experience of resettlement. In this chapter I describe resettlement as it unfolded, woven together with pictures taken by the resettled residents of Nanguene to document their experiences. I have chosen to use residents' original first names to preserve the uniqueness of their experience. I first describe in detail the method of photo-documentation, called photovoice, used to collect and analyse the data presented here.

Photovoice

Photovoice is a research method that allows people to record and reflect on critical issues in their own lives (Wang and Burris 1997). Stemming from theoretical literature on education for critical consciousness, feminist theory and documentary photography, photovoice is a powerful tool for promoting dialogue and revealing the experience of social change (ibid). I employed photovoice on three occasions during the process of resettlement (before, during and after the physical move). The objective of this exercise was to understand the experiences, concerns and desires of the resettling people from their own perspectives. The photographs offered a window into the meaning of people's day to day activities, framed in ways that made sense to them.

In the first round, carried out in March 2008, the photos were used in two ways: as a visual prompt for discussion about a range of topics concerning resource use in their livelihoods; and as the basis for dialogue about and collective design of a set of criteria for evaluating the resettlement experience and its immediate outcomes.



Figure 9.1. Members from each of the households in the village took photographs with disposable cameras. These women are sorting the pictures into piles to discuss the resources that were important for them after being resettled. (Photo credit: J Milgroom May 2008)



Figure 9.2. Looking at the scale of five faces that ranged from happy to sad, 18 months after resettlement Nanguene residents evaluated their satisfaction with the resources that they had identified as being important to them (Photo credit: J Milgroom June 2010)

I distributed six disposable cameras in Nanguene and invited individuals from different households, men and women alike, to take pictures of the important resources in their lives.⁸² I collected the cameras, developed the pictures, and interviewed each person who took pictures about the meaning of each picture. After the individual interviews, I organized group discussions with men and women separately in which I gave them all of the photos (Figure 9.1). I asked the group members to organize the pictures that represented the same resource into piles, and then to add to the piles a hand-drawn picture of any resources that they wanted to have after resettlement but that were not represented by the photos. The concept of 'resource' was interpreted widely to mean anything that they thought important to their livelihoods. After lengthy discussions about what they wanted after resettlement, the groups defined criteria for evaluating each resource (for example, for agricultural fields, the participants defined good quality soils as the most important criterion). Finally, we carried out a pair-wise ranking exercise to distinguish the relative importance of each resource and generate a ranked list.

I distributed another round of seven cameras in November 2008, the month that the physical resettlement of the residents, their animals, and their belongings, from Nanguene to Chinhangane, took place. For this round I asked them to record whatever



Figure 9.3. A Nanguene resident with his camera in hand. (Photo credit: Faileta March 2010)

⁸² More precisely I asked them to take pictures of anything that contributed to their good life in Nanguene. The phrasing of this sentence reflected a common comment used by the residents in interviews about living well in Nanguene.

they wanted to remember and to tell me and other people, including their grandchildren, about their experience of being resettled. Again I interviewed each person about the meaning of each photograph and why they took it, and left them with copies to keep. I distributed a third and final round of ten cameras in March of 2010, two years after the first round, and this time I again asked people to take pictures of the important resources in their lives, in the same manner that I had used in the first round. I also distributed the same number of cameras to residents of the host village to be able to compare the pictures taken. By this time the residents of Nanguene were well-versed in the method and used the cameras to take pictures to document events, challenges that they faced post-resettlement, and positive changes. The liberty they took in the use of the cameras prevented direct comparison of the first and the third round of photos, and between the photos taken by the host village and those taken by the resettled village, but the resulting photos proved to be highly revealing, as I will soon discuss, after a brief reflection on the method.

Finally, in June 2010, I used the ranked list of criteria that we developed in May 2008 to evaluate how the residents felt 18 months after resettlement. I used a scale of five faces drawn on paper, representing very unhappy, unhappy, neutral, happy and very happy, to indicate degrees of satisfaction (Figure 9.2).

The photovoice method took a life of its own that I welcomed as a sign of ownership over their participation in the research process, as well as comprehension and respect for the underlying goals of my research: to understand their experiences from their point of view (Figure 9.3). The interviews relating to the second and to an even greater degree the third round of photos reflected this relationship. The photos became a vehicle for Nanguene residents to tell their story in the way that they wanted me to write it down. Most of the explanations of the photos began with phrases such as: 'I took this picture because I wanted to show you...' Although I can display only a few photos here (of my choice, not theirs) out of the hundreds that the method generated, I hope to give voice to the lived experience of resettlement through them. Some important events or periods of time in the resettlement process are not captured in photographs, therefore I describe these based on interview data and observations. The resettlement process is presented in three phases associated with the three rounds of photovoice: (i) unsettling: the period of uncertainty and negotiation about resettlement from the time that the idea was introduced to the actual physical resettlement; (ii) resettling: the physical resettlement and the transition to the new location; and (iii), re-resettling: the period that encompasses the return of some families back into the park.

UNSETTLING, RESETTLING AND RE-RESETTLING:

Unsettling

Waiting in limbo, dreaming about the future

During the pre-resettlement phase the residents of Nanguene suffered a long waiting period of uncertainty as their futures were decided: where they would move to, when they would move, under what conditions, and what it would be like (Chapters 3 and 4). At first, residents eagerly anticipated news from the park staff then, with growing frustration and distrust began to resent the extended silent spells, unfulfilled promises and repetitive meetings at which no concrete decisions were made. Many questions lingered for the residents, such as whether or not to fix up a dilapidated roof, or plant a tree, while their lives were held in limbo, for fear of investing time and work in vain (Figure 9.4). Their fear of wild animals intensified as wildlife densities slowly increased over the years and tales of attacks and deaths spread through the park. Their already irregular food production was threatened because of elephants raiding the maize in their fields when the rains finally came (Figure 9.5). Dreams of jobs, infrastructure and services lured some people to desire resettlement, while others were filled with anticipated nostalgia for their land, trees, river, and medicinal plants (Chapter 3).

The discussion about ‘what development actually is’ came up repeatedly during this period. The park staff had been telling the residents of Nanguene that resettlement was going to bring development for them and that the establishment of the park would bring development for Mozambique. There was a general perception that ‘development’ would be for others to enjoy. For example, for Domingos, who took the pictures, a store in South Africa (Figure 9.6) represented ‘development’, a symbol of how Mozambique would look after the park was finished. However, in discussing what that kind of development would mean for him personally, he eventually responded: ‘If we give up our land for the tourists and then don’t have anything, it wouldn’t be development.’ Women mostly dreamt of development as having income from a job, and a mechanical mill for the maize so that they did not have to spend so much energy and time on food preparation.

Esperança: We want to not have to do so much hard work just to eat. We work hard in the fields. And then to eat there is such a long process from the ear to the xima (maize porridge). We want more than anything a mill where we can grind our corn so we don’t have to do it. We want our skin to be soft and smooth—not like it is now, tough and rough. We want to eat foods that make our skin nice—like in Joni (South Africa) we just worked on other people’s farms and when we returned from work we didn’t have to pound corn. We could just rest. The bags of food in Joni all had extra vitamins and everything—they had



Figure 9.4. Arleta's house in need of repair. 'Since the park was made we were supposed to leave. Since they said that, people don't construct houses, we don't plant trees. This house was built in 2000 but it was never really finished because the park came. There were papaya trees but we stopped planting and the old ones died. No one is investing, so as not to do things for nothing. Even now that we have accepted to leave, the park does nothing.'⁸³ (Photo credit: Arleta, March 2008)



Figure 9.5. Elephant footprints in the riverbed near Nanguene. 'Since the park came we are selling cows because the elephants eat our maize'⁸⁴ (Photo credit: Erik, May 2008)

⁸³ Ernesto Fabio Mongue, May 16, 2007

⁸⁴ Erik's father, Armando Sept 25, 2008



Figure 9.6. ‘I took this picture to show my children that we buy things in that shop. [...] They have plans to make things even prettier here than those places in Kruger park. It would show the development of Mozambique if we had things nicer than in South Africa.’ (Photo credit and quote: Domingos, April 19, 2008).



Figure 9.7. *Strychnos madagascariensis* (makwakwa) and *Ficus sycomorus* (nkuwa). A selection of the many pictures taken of the wild fruits and plants the residents identified as important for them. (Photo credit: Nanguene residents, March-May 2008)

the nutrients we need—not like here where we only eat maize. It is so much easier to just open a bag of flour and cook and eat. That is development.

Jessica: Did you live better in Joni?

Esperança: No, we just want our country to provide the same conditions so we can live better here.

Transportation that would take them to the hospital if necessary, a secondary school for their older children, a brick house and a church were among things that Nanguene residents aspired to have post-resettlement (Table 9.1). However, according to their ranked list of priorities for post-resettlement, the top priorities were mostly natural resources (Table 9.1). Although wild fruits were at the bottom of the list, trees made

Table 9.1. Resources desired by resettling residents in order to live well after resettlement, ranked in descending order of importance. Results from two focus group activities, one with men and one with women after a photo-visioning exercise in which residents were asked to take pictures of the most important resources for their livelihoods, and based on the pictures discuss the important resources for post-resettlement in Nanguene 2008. Those marked with an asterisk (*) are those based on natural resources.

Resource	Men	Women	Explanation of resource	Criteria for assessing post-resettlement experience
Water*	2	1	Water for drinking, cooking and washing	Close to home, sweet
Maize*	1	3	All food that comes from our fields	Good land, water close by, early plowing
To be treated well	-	2	Well received by host village	Access to resources
Livestock*	3	4	They do work for us and can sell to buy food	Water close by and good pasture grass
School	5	5	Primary and secondary school	Close by
Brick house	4	-	Improved houses (compensation for resettlement)	To have one
Irrigation*	-	8	To be able to produce without rain	Infrastructure and a land near river
Church	7	6	A place to pray	Place and materials to construct it
Traditional House*	6	9	Secondary houses for children, ancestors	Materials to build and maintain them
Granary*	5	-	To store food, and to cook under	Place and materials to build and maintain
Wage labour	-	10	Opportunity to get jobs	Existence of and access to them
Corral*	6	-	To keep the livestock in at night	Materials to build and maintain them
Hospital	6	-	To have a place to go when you get sick	Close by
Transportation	8	7	Possibility to get to town by vehicle, not only on foot	Regular vehicle service to town
Chickens*	-	11	Something to sell when in need of cash	Food and a place for them to sleep
South Africa	8	11	Remittances, to see family	To be able to go there
Papaya and Mango trees*	-	12	Can sell in the market	That they can grow
Fish*	9	12	Sauce to accompany the maize meal	Existence of fish in river and be able to get them out
Shade*	11	13	To sit in	In the homestead
Wild Fruits*	10	14	Fruits to eat when hungry	Enough of them not too far away
Marula trees*	-	14	Fruit for the drink and the nut for sauces	Access to the trees not too far away
Honey*	12	-	Wild honey in the forest	Existence of bees

up an important part of the photos of each household (Figure 9.7). The importance of having a school was fifth on the list for both men and women. While non-tangible resources are not listed, such as social networks and relationships with the ancestors, these were identified in the interviews as of considerable importance, as became evident as conflicts emerged (Chapter 6 and 7).

Participation, negotiation and conflicts

The process of negotiating and decision-making about compensation during the first phase was complex; few concrete decisions were taken, many suggestions were made, only to be withdrawn. Typical problems, common to many resettlement schemes were experienced, including political pushes and pulls, stops and starts, corruption, conflict, planned co-option of resources for other purposes. People's moods over this period reflected the ups and downs of the negotiation process. Lack of information, misinformation and poor diffusion of available information, combined with the park staff's habit of communicating important information through the village leader, Simone, rather than in meetings with all of the residents, led to conflicts within the village. Two brothers, who were descendants of the 'owner of the land', of the lineage of Nanguene, came to distrust this communication process. One of these brothers should have been the leader of the village but had preferred not to take that role (see Chapters 4 and 7). He still had an important influence in the affairs in the village. The conflicts that arose over the flow of information formed the beginning of a division within the village that would emerge later as a major split.

Other conflicts erupted between the park staff and the leader of the host village, between the host village and the resettling village, and between the host village and a neighbouring village (Chapters 6 and 7). The land allocated for building Nanguene's new houses in the resettlement area, lay outside the traditional boundaries of the host village, Chihangane, and in fact formed part of the neighbouring village's land, that of Marenguele. This led to a situation in which the leaders of both villages were unwilling to see more of their land allocated to Nanguene for fields. Both wanted the other to do so, as they played out a long-standing inter-village conflict (Chapter 7). This conflict was in part fuelled by the differing expectations of the park staff and residents of Chihangane about how they were to benefit from accepting to host Nanguene. As the feeling grew among some Chihangane residents that they were not going to benefit as much as they had thought from the project, their initial generosity towards the residents of Nanguene also diminished (Chapter 6 and 7). In turn these conflicts soured the host village's attitude towards welcoming and extending access to resources to the resettling village.



Figure 9.8. The residents of the village of Nanguene went to see the model houses in preparation for the negotiations about the conditions for resettlement (Chapter 4) (photo credit: J Milgroom Feb 2007)



Figure 9.9. Maize drying up in a mid-season drought. 'I took this picture to show the maize suffering from the heat.' (Photo credit and quote: Arleta, March 2008)



Figure 9.10. The party to celebrate the resettlement. 'That is the table where we had to sign. [...] In the end we didn't use the table. [...] I refused to sign. I couldn't sign when there were still so many things not done'. (Photo credit and quote: Simone Nov 6, 2009).



Figure 9.11. 'When all the people left Nanguene, only Esperança and Silvia had been left behind. After this trip Nanguene was left empty'. (Photo credit: Silvia, Nov 6, 2009)



Figure 9.12. 'My daughter was crying saying, papa! Papa! Where are we going to sleep? Why are you taking our house down? I told her not to worry because she would eat meat soon at the party' (Photo credit: Alisao, Nov 6, 2009)

Urgency... Nothing to eat...

The period of uncertainty coincided with general food scarcity. There had been a good harvest in 2006 but by 2008 the granaries of most households had run out of maize (Chapter 5). The 2007-2008 cropping season yielded very little maize (Figure 9.9). Food shortages heightened resettling residents' sense of urgency about the need to be resettled quickly. During 2008, as food supplies began to dwindle and the time for the next rainy season grew near, the residents of Nanguene became more and more nervous about finding and preparing fields in their new home area. Despite their continuing uncertainty about what they would find at the post-resettlement site, they requested assistance at this point to be moved as quickly as possible, at all costs, in anticipation of the rains. Because of their plea to be resettled urgently, they relinquished their opportunity to negotiate better compensation conditions, and despite the conflicts

described above (Chapter 7). However, they had learned during the negotiations over the compensation package that they were by no means powerless (Figure 9.10).

Resettling

Differences among households' experiences emerge

Differences among household experiences of resettlement within the village of Nanguene became more pronounced during this phase of resettlement. The WB OP 4.12 makes specific mention of the need to take special care of more 'vulnerable' groups such as widows and elderly people. The compensation package included provision of a house and a field to every nuclear family, regardless of their assets pre-resettlement, but no further effort was made to consider the needs of disadvantaged or vulnerable households. This heightened the existing differences among the households. For example, because of a foreseen shortage of forest resources in the post-resettlement location, the park staff had requested that the resettling residents cut from the forests surrounding Nanguene as many posts as they would need to rebuild their houses, stores and cattle corrals in the post-resettlement location. The park authorities arranged the transportation of these posts but did not provide assistance in the labour of cutting them down (Chapter 6). This meant that the households that had fewer members of working age capable of cutting the posts could cut fewer posts than other households; this affected especially those households consisting of elderly or disabled people. Meselina, the elderly woman mentioned in Chapter 7, and her blind husband struggled to cut down enough posts to be able to rebuild their granary.

The calculation of compensation was based on the assets held before resettlement, namely, hectares of land and built infrastructure (houses, corrals and granaries). A household's main house was replaced by a brick house in the new location; the additional structures standing in the pre-resettlement location were compensated in cash. Similarly, each hectare of cropping land was replaced by an equal amount of land in the post-resettlement location and the remaining area of land held in pre-resettlement was compensated in cash. Therefore, households with only one house and only one hectare of crop land were not provided with any cash at all in their compensation package, while other households received as much as 54, 000 Mozambican meticaïs, around 2000 USD. Not surprisingly, some households did not feel that they had been fairly compensated, especially those that had not been present when the surveys were carried out in 2005 (see Chapter 8). Further dissatisfaction about the compensation package arose because the results of the surveys, and the actual compensation to be provided to each household, were not revealed until the day of the cash disbursement. The contract that the residents were asked to sign at the moment of receiving the cash was not itemized in detail, merely giving one value for infrastructure and one for land.

It was unclear what had been accounted for and what had not. Residents who felt under-compensated were angry; those that were compensated fairly but received small amounts of cash felt somewhat ambivalent; only those that received large amounts of cash were satisfied.



Figure 9.13. Armando was very happy with his new motorcycle that he bought with his compensation money. (Photo credit: J Milgroom, October 2, 2008)



Figure 9.14. Beatrice. 'I asked Silvia to take this picture of me in my maize field.' (Photo Credit: Silvia April 4, 2008)

Notwithstanding these differences, the Nanguene residents knew that the compensation package was insufficient to replace or substitute for the resources that they used and needed in their daily livelihoods (Chapters 5 and 6). Households were expected to arrange their own access, individually, to any additional of resources that they might need, that had not been included in the package.

Beatrice

A woman called Beatrice had come to live in Nanguene in 2006. She was the cousin of the leader of Nanguene, her mother and brother lived in Nanguene, but they were not members of the Nanguene lineage. She had been married into the village of Mavodze but conflicts with the second wife led her to agree amicably with her husband to return to her family's village and live near her mother and brother. She actively carved out her livelihood activities in Nanguene and in only two years had opened four fields. She worked together with her mother, but lived and cooked independently with her four children. When the original baseline survey for resettlement was carried out by the LNP in Nanguene, neither Beatrice, her mother or brother were living there. They had all lived there in the past but had moved to Mavodze after villagisation, together with the rest of the inhabitants of Nanguene, after the war. They moved back to Nanguene shortly after the survey was made. Because they did not figure in the original survey, when it came time to make the plans to build the new houses, the survey had to be updated. It was decided that Beatrice's mother and brother would be given a resettlement house but the residents of Nanguene from the Mahlaole lineage protested that Beatrice should not be given a house because she should return to her husband's house. The eldest of the Mahlaole brothers, declared her ineligible to receive a new house because she was separated, not widowed like the other female-headed households. The LNP staff accepted this decision and Beatrice was left by herself in Nanguene. Because she could not live alone in the forest and she could also not return to her husband's household, she moved to the village of Macavene with her children.

Two other events help to explain this decision. The youngest Mahlaole brother had married a third wife who was present at the time of the first survey. She left his household later that year. There was also a woman left a widow by a late Mahlaole brother, who had been in Nanguene at the time of the survey but who went to South Africa shortly thereafter. The leader of Nanguene informed the LNP about the changes that had taken place since the time of the survey. He told them that these two Mahlaole women were no longer in the village and, therefore, they were not eligible for compensation. The Mahlaole brothers were upset at the lost opportunity of keeping the compensation owed to the absent women, including an extra house, for themselves. This erupted into a large conflict that greatly disturbed the small village and caused the leader to attempt to step down from his post as leader. Since there was nothing the Mahlaole brothers could do, their retaliation against the leader's Maimele family was to deny Beatrice a house, over-riding the leader's pleas with the LNP staff to grant her just compensation. KfW was not aware of the existence or background to this case.

Unexpected social changes

A



B



Figure 9.15. A) Aerial views of Nanguene before resettlement, with the houses spread out along the road (Photo credit: J Milgroom March 2008) and of the resettlement site as it was planned in Chinhangane with square plots B). (Photo credit: Greg Simpson, July 2007)

Many unexpected social changes occurred rapidly after resettlement. The village grew—soon after resettlement four new families joined Nanguene in their new location. They were not provided with houses but they requested to stay there and were accepted by the members and leader of the village. The spatial and social organization of the village changed because the resettlement project provided one house, laid out on a grid design, to each nuclear family, defined as parents with children, unmarried young adults over 18 years, or widowed elderly people. Instead of extended families living together in one household compound, each nuclear family was allocated space for its own compound. Although members of the same extended family (that before resettlement was one household) were able to choose adjacent plots; initially granaries and cooking pots were still shared but the spatial discontinuity changed the intra-household social dynamics, especially for the next generations. As the children grow up and need to establish their own plots, it will no longer be possible for them to live next to their parents as they would have done before resettlement, because adjacent plots are already occupied (Figure 9.15b). In Nanguene, the village was organized spatially in a linear fashion, where there was always space on either side of the path that ran down the middle to expand the household (Figure 9.15a).



Figure 9.16. 'I took this picture to show that we bought this kiosk just after we were moved and now even my children know how to sell things.' (Photo credit: Amelia, Nov 8, 2009)



Figure 9.17. 'These are some things we were selling. We wanted a picture of the whole family in front of the house. (Photo credit: Simone Nov 6 2009)



Figure 9.18. 'This is how we work in the charcoal area. I took this picture because it is what is worked in this land. I am working for someone else here. When I finish he gives me some small money that helps me for a short time.' (Photo credit: Daniel, May 18, 2010)



Figure 9.19. 'This is the fence we are building for the park to protect our fields from the elephants.' Photo credit: Alisao, May 2010)

Livelihoods also changed for many households. Some opened kiosks to sell goods (Figure 9.16 and Figure 9.17), some began to work for charcoal production teams (Figure 9.18), some got temporary jobs working for the park (mostly men) (Figure 9.19), or earned day wages working on someone else's field. Development projects and literacy campaigns began to form a more routine part of people's daily lives than previously. Opportunities increased for socializing with a larger circle of people. Nanguene has a large number of widowed women and some expressed their enthusiasm at the greater prospects of socialising with men. The post-resettlement location also offered many more opportunities for drinking alcohol for men and young adults. Cultural differences emerged, to which Nanguene residents had to adjust, especially with respect to children. For instance, because of the relative safety of the Chinhangane field areas, children were allowed to go alone to the fields, whereas in Nanguene the presence of wild animals had meant that parents prevented their children from going alone to the fields. Children also learned to handle money and small transactions earlier than in Nanguene. For many residents, both young and old, access to a latrine was a major advantage of resettling.

Another major change was the school. In Nanguene the children were studying in a building that was increasingly in a precarious condition. The roof was in need of repairs (Figure 9.21) and the benches were just narrow elevated logs. All the children studied in the same classroom, and the only teacher had to deal simultaneously with the needs of different ages and abilities. The teacher remained dependent on the residents to help him to transport his food supplies to the village because there was no public transportation into Nanguene and he didn't have a bicycle; he did not have time to grow his own food because of his teaching responsibilities. The living conditions were too poor for his family to join him to live in Nanguene and he suffered from the isolation. In Chinhangane, the teachers had been provided with cement houses, in which most of them lived with their families. There were a total of eight teachers, each responsible for one class at a time. The school was also made out of cement and had benches and desks (Figure 9.21). The residents of Nanguene had expressed major concerns before resettlement about the possible treatment of the Nanguene children in Chinhangane. They wanted to have their own school in their own neighbourhood in Chinhangane, as they did in Nanguene. This, however, was not an option the Ministry of Education was prepared to entertain. They only had a school in Nanguene because they had offered to build it themselves. After resettlement many residents were still not happy with the school and some of the children complained of fights and discrimination aimed at them.



Figure 9.20. The school in Nanguene. (Photo credit: Simone, May 2008)



Figure 9.21. 'This is the school in Chinhangane. The school is good. The children study there fine. It is built out of cement blocks and that is better than our school in Nanguene... but our children suffer there. They get beaten up and receive little food. If they had built a school here in Nanguene, it would have been a source of pride for all of us.' (Photo credit: Amelia, Jan 2009)



Figure 9.22. 'I took this picture to show our church. The park promised to construct a church for us where we could pray... The church is in the open air because we don't have posts to fence it in. Here the posts are small and to get good posts you have to go very far to get them and you would need carts to bring them back. We suffer when the wind blows. Many people from Nanguene now go to church in Chinhangane. But we don't want to go to church with someone else's pastor, we want our own church.' (Photo credit: Simone, May 2010)



Figure 9.23. 'This is the church in Chinhangane. I took this picture to show that we were happy giving thanks to God.' Photo credit: Ronaldo May 2010



Figure 9.24. 'We are afraid to sleep in our houses when there is wind because it could crumble on us inside.' (Photo credit: Domingos, May 2010)



Figure 9.25. 'The houses are nice, but we can't eat them. We will starve here.' (Photo credit Emelina, May 2010)



Figure 9.26. 'I found my livestock eating these spiny flowers because there is no grass for them here to eat.' Photo credit: (Faileta May 2010)



Figure 9.27. 'We didn't find these kanyu fruits in Chinhangane. We found them in Massingir. In this picture we were eating the fruits just to be able to sleep at night. In Nanguene we knew where we could get fruits to eat in the forest. Kanyu doesn't give you strength to go to sleep but there we could have found fruits to fill our bellies. (Photo credit: Simone May 2010)

Another major disappointment for the newly resettled residents was the quality of the houses. Most people agreed that they were happy to have them and that they were ‘pretty’, but many were afraid to sleep in them because they thought that they would fall down on them, especially in storms (Chilungo 2010). The houses started to show cracks soon after they were built (Figure 9.24), and many of them were built in such a way that when it rained the water flowed in one door and out the other, creating a river through the middle of the house. There had been major problems during the construction of the houses—some had had to be torn down and built again because of sub-standard quality. On top of this, 18 months after resettlement most of the residents still were in a precarious situation with respect to accessing the natural resources necessary for their livelihoods, and for food production specifically (Figure 9.25).

Evaluating resettlement

Assessments made by the Nanguene residents of their own degree of satisfaction with the resettlement 18 months after the physical move, against the list of criteria that they had developed two years previously, indicated that there was significant variation within the village. Some were satisfied with resettlement in general, and others were not at all satisfied.

Major gender-based differences surfaced in the assessment. Women were overall much less satisfied than the men in relation to many aspects of their new lives (Figure 9.29). However, the women were most unsatisfied in terms of those resources that they had indicated as less important to them during the ranking exercise: mango and papaya trees, fishing, the collection of wild fruits, and trees for shade (Figure 9.29). They expressed more discontent than the men about resources that are not traditionally in their domain: construction materials for building the traditional houses, corral and granary, as well as the availability of honey. Men, however, were more discontent about the change in the water situation than the women. Women were happy to have a tap close to their houses (Figure 9.28), however, as described in Chapter 6, the water from this tap proved to be salty and not suitable for cooking or drinking. This meant they had to fetch water from a well in Chinhangane, where they had to wait in line to get fresh water (Figure 9.28). Many women complained about this, saying that in combination with the extra time needed in Chinhangane for collecting firewood their daily work load had increased considerably. Firewood had not even been mentioned as an important resource for the residents of Nanguene before resettling, perhaps because of the fact that the resource was abundant, readily available to them, and located close to their houses.



Figure 9.28. Left photo: 'In Nanguene there is no lack of water. You don't have to wait to get water, you just get it and you go home. In Nanguene the pump never breaks.' Photo credit: Zaida, April 3, 2008 Right photo: 'This is our well here in Nanguene.' (Photo credit: Faileta May 2010)

Another major distinction could be traced between the households from the Mahlaole lineage, who felt well-received and well-treated in the new locaiton (0% very unhappy, 0% unhappy) and those from other lineages who did not at all feel well-treated (44% very unhappy, 11% unhappy). This split was mirrored in the degree of satisfaction with the dryland fields and grazing resources. Individuals from Mahlaole households were more satisfied with their dryland fields (0% very unhappy, 30% unhappy) and grazing resources (11% very unhappy, 22% unhappy) than individuals from households of other lineages (dryland fields: 55% very unhappy, 22% unhappy; grazing resources: 42% very unhappy, 14% unhappy).

Access to resources and control of resources was the biggest challenge for all the resettled residents (Chapter 6 and 7). There was no compensation for or consideration of loss of access to common property resources in resettlement and it was expected that residents would secure the access to these resources through personal arrangements with the residents of the host village. However, accessing resources that were not common property, such as land, proved to be problematic for those households that did not have adequate social and especially lineage relationships in the host village (Chapter 6 and 7).

The rainy season after resettlement was a relatively good one; many households in the host village with established fields produced enough to sustain their households for at least 12 months (Chapter 5). The newly resettled residents of Nanguene who did manage to secure some fields, however, were able to produce only enough, in the best

case, to feed their household for 4 months. Some households did not access any fields at all (Chapter 7). Households that had kinship connections with the residents of the host village were, in general, able to access more fields. This division, along lineage lines, split the old village of Nanguene in half.

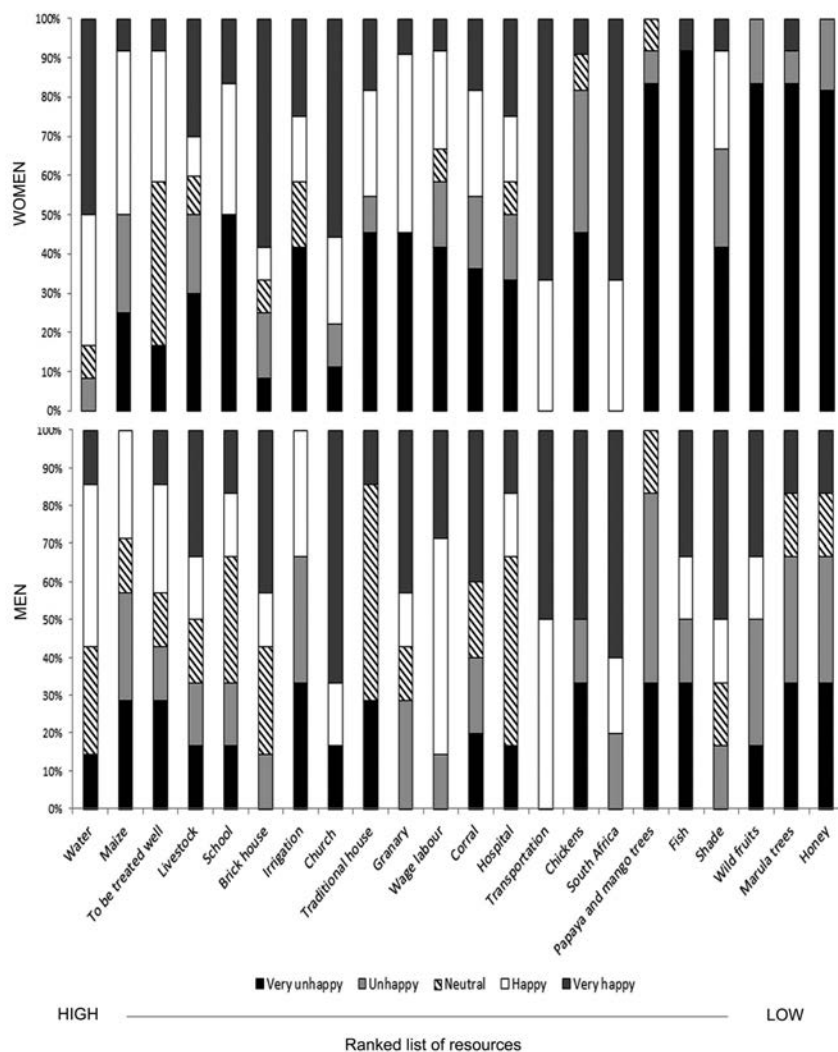


Figure 9.29. Residents' satisfaction with resettlement 18 months after the move based on the list of criteria developed by the Nanguene village residents (Table 9.1), in order of importance, separated by gender. Women $n = 12$; Men, $n = 7$.



Figure 9.30. The corrals in the forest before they were rebuilt inside the village. (Photo credit: Salia May 2010)



Figure 9.31. 'This is our corral at home. It was new because we had just destroyed the old one outside the village and built it inside our residential plot because of cattle theft.' (Photo credit: Amelia May 2010)



Figure 9.32. 'I took these pictures in Madingane to show that because of a lack of grazing and fields in Chinhangane, I decided to go live in another village where I could get a good field. These trees, Sasani and Kalenga are signs of good soil. There is grass for the livestock and if you plant here all the crops will grow well.' (Photo credit: Simone, May 2010)

Re-resettling

About 14 months after resettlement someone entered into the new neighbourhood of Nanguene and stole three cows, one of which was pregnant, from Simone's corral. The loss of three cows is significant. Most of Simone's cattle were not in fact his—he was taking care of them for a relative. The design of the resettlement neighbourhood located the corrals outside of the residential area in anticipation of growth of the village and to minimize problems with flies and dung near the houses. This left the corrals vulnerable to theft. After this event all of the resettled households engaged in the laborious task of rebuilding their corrals next to their houses. Simone felt that the theft had been directed at him personally; it made him feel even more unwelcome in Chinhangane and drove him to leave in search of a new home.

Four months after resettlement half of the resettled households, including the village leader, went back into the park to look for a new place to establish their village, claiming that the immediate reason was that they were frustrated with not finding fields and because of the inadequate grazing resources for cattle. They found a new location across the river from Chinhangane, and began to settle there during the first rainy

season after being resettled. In the dry season, however, they returned to Chinhangane because of the difficulty of accessing food and water in their new location. The following rainy season, many of them returned again to their new home in the park and began to clear the land for planting. They decided that their new village would be called 'Makhite Tchirivika' translated as 'the place for those who are concerned with working'. As the leader explained to me, the village was for those who did not want to be the 'employees' of others but be their own bosses (Chapter 7). Household plots were marked out, the limits of new fields were drawn and at the time I ended my fieldwork most households active in the new location had divided their families, leaving some members back in Chinhangane to attend to young childrens' schooling, the elderly who could not yet be moved to the new village, and some livestock, keeping one foot in each place.

The similarities in the spatial organization of the new village to that of the original village of Nanguene are remarkable. Both the original Nanguene and the new village were located along the Shingwedzi River. The fields were distributed in such a way that as many people as possible had access to the river, and the village was slightly removed from both the river and the fields (Figure 9.33). Colson (1971) describes how after the resettlement forced by the construction of the Kariba dam the resettled residents spent time during the transition period searching for modes and forms of living that resembled those that they had been accustomed to before resettlement. She also describes how the transition period is a time during which kinship relationships became extremely important and energy was invested in building and maintaining them. Both the search for familiar modes and forms of living as well as the proximity to kin over time eased as people got used to their new surroundings.

Although I cannot confirm this through interviews or observation, I have been informed that a year after I finished fieldwork the new village was also abandoned. Most of the residents had returned to their resettlement house in Chinhangane. However, the former leader of Nanguene, Simone, sold his house in Chinhangane and went with his family to South Africa. It is possible that the households from Nanguene that left in search of a new village were living out the pattern that Colson documented and that their search for a new village was just part of the post-resettlement process of transition. However, I note that Simone and his family had lived in South Africa during the war and had fought hard to return to Mozambique. He did not like living or working in South Africa and often talked about how he never felt at home there. His return to South Africa indicates the severity of his disillusionment with his new life and the future that awaited him and his family in Chinhangane.

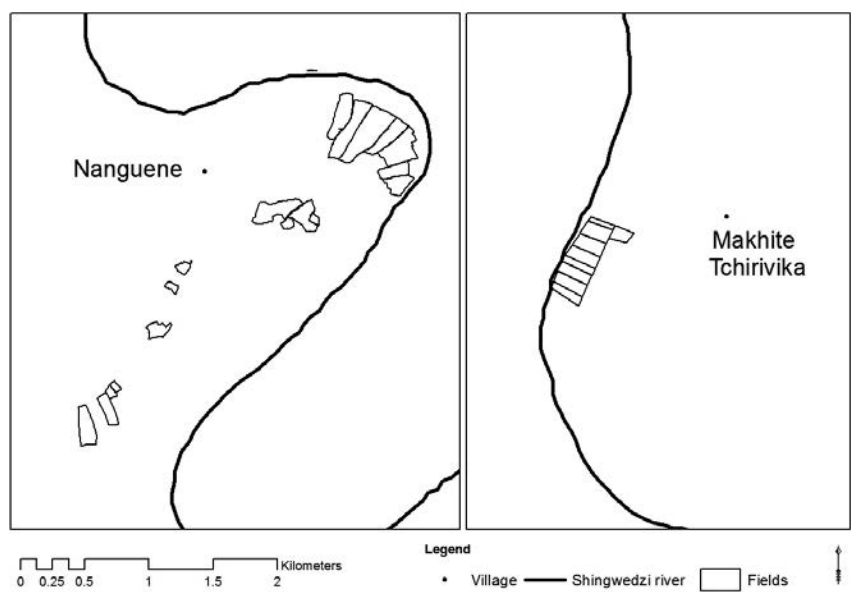


Figure 9.33. When newly resettled residents of Nanguene moved back into the park to establish a new village they adopted the same spatial organization of their fields and their village with respect to the Shingwedzi River. (Map credit: J Milgroom)



10

Discussion and conclusions:
Transforming rationality into democracy

INTRODUCTION

This study contributes to various topical scientific debates. Tension about control over land and natural resources underlie many challenges facing the world today, including food production, how to deal with climate change and conservation of natural resources (De Schutter 2011; Rosset 2011). More than a decade of efforts directed towards sustainable development and community-based natural-resource management have attempted to reconcile global interests with local needs of resource use (Hulme and Murphree 2001; Nelson 2010). These efforts, however, have not always been successful. The case presented in this thesis is a prime example of a situation where regional and global interests culminated in the establishment of a national park on lands already occupied by people. Despite being told that the park would bring ‘development’, residents of the area have been forced to bear the brunt of the burden of this initiative. Many studies have shown that conservation initiatives rarely bring development (Neumann 1997; Wolmer 2003; Benjaminsen and Svarstad 2010), yet conservation and development are still widely promoted by NGOs and development organizations as a dual objective. How to generate environmentally sustainable and socially equitable options for dealing with competing claims on natural resources continues to be a vital question.

The empirical chapters of this thesis have contributed to understanding the challenges and opportunities for this question in practice. Specifically, the chapters contribute to the debates about the potential for participation of residents in planning processes to lead to more socially just outcomes (Chapter 4), adaptation to climate variability and the importance of food self-sufficiency in marginal areas (Chapter 5), how social and political systems are linked with natural systems via an exploration of the relationships among access, quantity and quality of resources (Chapter 6) and among access and control over access to natural resources with social cohesion (Chapter 7). Interrogating how research can contribute to generating alternative ways of dealing with complex problems that involve human-environment relationships is another debate to which this thesis contributes (McCusker and Weiner 2003; Benjaminsen et al. 2006; Cousins and Scoones 2010; Rufino et al. 2011). In two chapters I contrast results based on generalized assumptions about maize production (Chapter 5) and natural resources use (Chapter 6) that formed the basis for land use planning, with ethnographic data of daily practices. I also reflect on the potential for integrated, action-oriented research to contribute to more socially just negotiations (Chapter 8).

In this final chapter, however, I bring together insights derived in individual chapters to focus on the debate about resettlement. I first present cross-cutting conclusions from my research that address the overarching questions posed in Chapter 1. I then

present two more conclusions that were derived from the understanding developed through this study of resettlement as an unfolding process. Secondly, I take a step back from the research questions to interrogate the assumptions upon which the resettlement policy is designed. I then propose an alternative way forward for future resettlement initiatives, reflecting more widely on processes of development. Lastly, I explore implications of my findings for competing claims on natural resources.

EXAMINING THE QUESTIONS OF POLICY ENACTMENT AND LIVELIHOODS THROUGH THE CASE OF NANGUENE

The questions identified in the first chapter concerned the enactment of resettlement policy, and integrated understanding of lives, livelihoods and natural resource use. I first present the findings from my study as cross-cutting issues in relation to each of these in turn. Although they are echoed in other studies, as discussed below, they question assumptions upon which resettlement practice continues to be based, and therefore merit further discussion.

Policy enactment

According to Cernea (1993), when the WB instituted their first resettlement policy in 1980, most of the borrowing countries still implemented resettlement in a policy vacuum. Force, often violent, was regularly used to remove people (Muggah 2003). The new WB policy led to significant improvements in resettlement project planning and design, but implementation of the plans remained problematic (Cernea 1993). Conceptualization of the policy process as enactment, rather than as a linear process of implementation, contributes to a clearer understanding of the problematic nature of transforming a policy artefact into action.

This research aimed to understand how participatory resettlement policy was enacted in the LNP through a struggle of opposing and shifting meanings in daily interactions. The analysis led to three insights that may help to explain why resettlement went wrong: 1) the WB policy was employed as a technical response to a political problem, 2) participation was evoked as a democratic tool in a nondemocratic political culture, and 3) enforcement was ineffective for mitigating the negative consequences of resettlement.

1. The WB policy was employed as a technical response to a political problem

Resettlement is a highly political process evoking fundamental issues of rights, equality and power (Oliver-Smith 1991; Koenig 2006), yet the WB policy response to this problem is geared towards designing proper compensation. This mismatch created complications for policy enactment in the LNP. Resettling residents were facing major

permanent losses as a result of resettlement. After having been forced to move various times because of villagisation and war, they knew that living ‘in the land of others’ was not easy (Chapter 3). They knew that they would always feel like outsiders, and they feared being treated as such. They were being asked to give up not only their land, but their autonomy and control over access to resources (Chapter 7). They feared that they would not be able to access the resources they needed to carry out their livelihood activities, and many of them wondered how their children would manage to get enough land in the future (Chapters 7 and 9). However, when the park was established people were used to a heavy-handed governmental influence on their personal lives (Chapter 4). People were not allowed to choose where to live, forced labour was a recent memory and allegiance to the single party FRELIMO was practically obligatory. They thought, therefore, that they had no choice but to obey the demands of the government and be resettled (Chapter 3).

The establishment of the park became possible with Mozambique’s official transition to democracy. Both the German development bank that funded the resettlement initiative (Kreditanstalt für Wiederaufbau, now called the KfW Bankengruppe) and the Ministry of Tourism (MiTur) in Mozambique presented the resettlement as voluntary to avoid public protest against forced resettlement among the citizens of their respective countries, and internationally. Despite the fact that the resettlement was not voluntary (Chapter 3), residents of the park had been reassured by representatives from KfW and by the park staff that they would not be resettled unless they agreed to the conditions of resettlement (Chapter 4). The major losses that resettlement was likely to bring for the residents of the park, the changing state-citizen relationship, and the insistence of the donors in making sure that the residents agreed to the conditions created a political tug of war. At its core was a conflict about power over who would determine what the futures of the resettled residents would look like. The Mozambican government was used to obedience from its citizens and resented any resistance to their commands. The residents felt that they should not be forced to give over their homes, heritage and land to the elephants and tourists for the economic benefit of the state without being compensated in the way that they demanded (Chapter 4).

In the negotiations about the size of the houses, described in Chapter 4, it became clear that the residents of Nanguene were not, in fact, concerned about the size of the houses as much as maintaining the leverage that they had gained through the negotiations to be able to influence their futures. The resistance of the Mozambican government to providing the compensation requested by the residents was rooted not so much in budgetary limitations, as they claimed, but in a deep-seated value about spending resources on ‘poor’, rural dwellers that lack political clout (Chapter 4).

Many researchers have called attention to the lack of consideration of political dimensions of resettlement in the WB resettlement policy (WCD 2000; Dwivedi 2002; Koenig 2006; Agrawal and Redford 2009; de Wet 2009). Major resistance movements have been organized against large dams as an expression of this political struggle (Hall 1994; Scudder 2005; Fisher 2009). In the context of development studies it has been recognized that interventions that are political in nature are 'depoliticised' (Ferguson 1994; Mosse 2005a; Li 2007). The adoption of a policy into a project context imposes a set of normative values on how decisions should be made and actions carried out. These values are then 'rendered technical', meaning, among other things, that they are rendered non-political (Li 2007: 7). Development institutions do not have the mandate to intervene in politics and therefore must diagnose problems whose solutions fall within the realm of solutions available to them (Li 2007: 246), seeking political legitimacy by portraying themselves as being outside of politics (Ferguson 1994; Mosse 2004; Bebbington et al. 2007). This has contributed to the failure of development projects to meet their own stated objectives (Escobar 1995; Mosse 2005a).

The World Bank historically has had a strict mandate not to intervene in the political affairs of the borrowing countries. However, over time the frontiers of the WB's political stance have shifted. Recognizing the failure of aid and economic reform in decreasing poverty, WB policy began to reflect the need to promote 'good governance', which is inherently a politically sensitive endeavour (Santiso 2001). By interpreting the concept restrictively, the WB's good governance efforts focus on the efficiency of the state, rather than confront issues of equity, or the question of whether or not a government is democratic (Santiso 2001). The growing recognition of the ways in which WB-funded activities have undermined human rights similarly has forced the WB to begin to address the issue (Clark 2002). Yet, the Bank policies still differentiate between civil and political issues of human rights and those that are considered economic, social and cultural, and the WB refuses to take into account the political dimensions of human rights (World Bank 1994a). The WB nonetheless, by endorsing the right to development and to participation, implicitly acknowledges these fundamentally 'political' rights (Clark 2002). By addressing the technicalities of compensation without addressing the fundamental, deeper issues that emerge in the enactment of the policy, resettlement is likely to remain a problematic process.

2. Participation was evoked as a democratic tool in a nondemocratic political culture

The participatory nature of negotiations created an unforeseen opportunity to address unresolved power struggles: the opportunity to participate in negotiations became an opportunity to resist it. The second principle of the WB resettlement was translated into the Resettlement Action Plan (RAP) for the LNP as 'consultation and

genuine participation of affected people should take place' (MiTur 2005). Participation, as expressed in the policy document, is intended, however, as a technique to ease resistance and facilitate planning, not as a tool for empowerment (Chapter 4). In assuming an apolitical stance towards resettlement, WB OP 4.12 fails to recognize the political nature of participation. The promotion of participation in resettlement planning in WB OP 4.12 is seen as unproblematic, and is based on implicit assumptions about linear policy implementation. Participation of citizens in the matters that affect their lives is a core value of democracy (Chapter 4). While Mozambique is formally a democratic country, in practice the state-citizen relationship is changing, but it still more closely resembles an autocracy (Chapter 4). Donors, however, seemed to expect the Mozambican government to act like a democracy with a certain degree of accountability to its citizens.

Participation, albeit circumscribed, nonetheless did give rise to a certain level of empowerment of the village leaders involved in the negotiations. WB OP 4.12 prescribed a new way of interacting between the government and the residents and opened the door to a wider range of actors to more actively shape policy in and through practice. The resettlement policy became a resource in the power struggle about who was going to determine conditions in post-resettlement and how they were going to be shaped (Chapter 4). The fact that the LNP park staff and the officials from the ministry of tourism had not had any previous experience with participatory procedures led them at first to experiment in an open way in response to donor demands to do so. Varied interpretation of the terms 'voluntary' resettlement and 'participation' effectively became tools used by government officials, park staff, donor representatives and the residents of the park to influence policy enactment (Chapters 3 and 4). However, behaviour that questioned obedient subservience to the government's orders was perceived as highly threatening by Mozambican government officials and they closed down the space for participation by using coercion (Chapter 4). Ultimately, participation in resettlement planning in this case brought about little more than short-lived empowerment followed by governmental domination. Participation occasioned such inconvenient resistance from residents in this first resettlement effort that government officials decided to carry out the next resettlement initiatives without engaging the participation of resettling and host populations (Chapter 4). The values underlying participation, notwithstanding the instrumental way in which the procedures were intended to be used, are inherently democratic, and the evidence suggests that the ministry officials were not prepared to accept this shift in political culture.

There is an inherent contradiction between the notion that residents are forced to resettle and that activities can be carried out in a 'participatory' way, without conflict

(Koenig 2007). The WB requirements related to participation are actively challenged by government officials who see the language and procedures of participation as merely a condition for their access to funds. Imposed opportunities to participate can open debates that otherwise might not be possible (Singh 2009). Likewise, awareness of rights allows residents to gain leverage and resist governmental domination (Poteete and Ribot 2011). However, people who then occupy the political spaces that open up can suffer human rights abuses for doing so (Bradlow 1996; Clark 2002). A policy emphasis on participation without support for the unintended changes that participation can bring about may simply further complicate the already complex enactment of resettlement policy.

3. Enforcement of the policy principles was ineffective

KfW and WB representatives had the task of enforcing resettlement policy in the LNP. While the project back-stopper, the technical advisor and members of the monitoring missions were important for setting the boundaries and steering the process, policy was ultimately enacted by the LNP park staff who had to respond to their superiors in the ministry and not directly to any of the above-mentioned people. Close monitoring of the park staff's activities and interactions with the resettling and host populations was not feasible and much of their day-to-day work rested on their own initiatives and decisions. Despite conditional funding based on compliance with the donor's principles, KfW was not able to prevent the coercion of the residents into signing the 'agreement to be resettled', that the LNP staff then used to prove that the residents had 'participated' in negotiations. Even a WB representative was complicit in the threats and fear tactics used to get the residents of Nanguene to sign the agreement (Chapter 4). These events point to the difficulty of ascertaining the voluntary nature of voluntary resettlement (Chapter 3).

Another indicator that the enforcement process was ineffective was that the final compensation package for Nanguene was insufficient to enable people to rebuild their livelihoods. They were left worse off than they were before resettlement in terms of having access to the resources they needed (Chapter 6). Negotiations about compensation became dominated by discussions about the houses - which became seen as a political symbol of progress and prestige and a material symbol of 'development'—rather than focusing on resources essential to the livelihoods of the resettling people. If the efforts invested in the design of the compensation package had been aimed at livelihood rehabilitation, as the policy guidelines indicated, the houses themselves would have been among the least matters of concern. Securing land for cropping and grazing for the resettled residents would have been the first concern. Neither KfW nor WB in practice could secure the first and most important principle of WB 4.12, which was to

leave people in conditions equal to pre-resettlement, or better off after resettlement (Chapter 5 and 6).

In an attempt to improve resettlement outcomes researchers call for improved enforcement of resettlement policies (Cernea and Schmidt-Soltau 2006; Schmidt-Soltau and Brockington 2007). Logistical complications, fear of treading on national sovereignty, misaligned political will and a host of other motives have been cited for the poor implementation and enforcement of WB policies (Cernea 1993; de Wet 2006; Oliver-Smith 2009b). Lack of accountability is also a common reason cited (Fox and Brown 2000; Clark 2002) but emphasis on improving accountability has promoted an even more prominent tick-the-box approach to international standards (Clark 2002). This leads to an improved demonstration of accountability on paper but this is not very relevant to local realities (Swainson and McGregor 2008). If the policy enactment process is the unpredictable result of interactions among multiple actors, rather than the certain outcome of a planned, linear process, then the notion of policy-led rule enforcement is inappropriate.

Research on policy enactment indeed points to the question of whether in fact the problem is not lack of political will, lack of skills, or opportunistic interpretation of policy for personal interest, so much as misconceived expectations of how the policy process works (Coburn 2005). Actors come to understand policy messages based on their pre-existing knowledge, practices and understanding of the world, their social context and the nature of their connections to the policy (Coburn 2001; Spillane et al. 2002; Yanow and Schwartz-Shea 2006). If policy interpretation and adaptation is considered a normal part of the policy process, then it is evident why periodic donor missions do little to shape the policy process. Based on a rational notion of what the policy says, donor representatives or WB project-evaluation staff compare what they expect to see with the reality they are presented with on the ground and call for adjustments in reality so that practices and behaviours fall in line with the policy, instead of the other way around.

An integrated understanding of lives, livelihoods and natural resource use

There has long been a call for resettlement planning to be based on a deeper understanding of existing social processes (Colson, 1971:7). Colson (2007) calls for interdisciplinary studies in order to better grasp the socio-ecological complexity of resettlement. Compensation is the major focus of WB 4.12 and the accompanying exhaustive sourcebook provides ample suggestions for and examples of compensation arrangements (World Bank 2004). However, inadequate or inappropriate compensation continues to be one of the reasons that resettlement fails to rehabilitate livelihoods (Penz

et al. 2011). This study aimed to gain an integrated understanding of lives, livelihoods and natural resource use through a cropping systems analysis and a quantitative analysis of natural resources. The results allowed us to assess the compensation package provided to Nanguene residents by the LNP and derive insights about why the compensation was inadequate. The study demonstrated that the compensation was insufficient because its design was based on assumptions rather than understanding or consideration of actual practices. The assumptions were shown to be based either on benevolent but incorrect guesses or on a political rationale.

4. Compensation based on strengthening adaptive capacity has the potential to reduce vulnerability to the negative impacts of resettlement.

Massingir is located in a region with marginal agro-ecological conditions. Erratic and low rainfall makes agricultural production unpredictable yet people in the area manage to depend on agriculture as a major part of their livelihoods. Results from our cropping system analysis indicate that dependence on agriculture is possible because of the combination of practices that people use to produce as much as possible when it does rain (Chapter 5). They plant multiple times each rainy season on as large an area as possible even though only 35% of planting events lead to some harvest (Chapter 5). However, when it does rain and the distribution of rainfall is favourable, households produce enough through this strategy to feed themselves for two and up to three years. Storing grain over multiple years buffers households from food insecurity over subsequent years of crop failure. Being able to plant on as large an area as possible to attain this buffer has been an essential part of people's adaptation to the marginal conditions in which they live.

In contrast, the amount of cropping land to be provided as compensation was calculated based on the assumption of annual harvests. The conclusion of the calculations made by the technical assistant to resettlement was that each household needed 0.4 ha per adult to produce enough food. External consultancies made similar calculations (Rural Consult 2008; van den Dries 2009). Results from our analysis, that took into consideration actual cropping patterns, rainfall variability and variable household assets, concluded that each person - including children - needed 1.37 ha to be food secure. The planned compensation for land was 3.4 times less land than needed per adult and did not take children into consideration. In fact it was finally decided that each nuclear family would get 1 ha, regardless of family size (Chapter 6).

Residents were resettled in the beginning of the cropping season, but the park-allocated fields were not yet ready. The rainy season of 2008-2009 was a decent year for production that the resettled residents mostly missed. This actually set them back

much more than could be expected in a cropping system based on dependable annual rainfall and annual production. The resettling residents had to hold out without food, not until the next rainy season, but until the next good rains, which might come only in 3 or 4 years.

Park staff assumed that resettled residents would be able to secure any extra cropping land they needed through private arrangements. The decision not to secure more land for the resettled residents was partly due to the difficulty of doing so (Chapter 7). The post-resettlement location was more densely populated than the pre-resettlement location, the area of cropping land and forest available per person, and area of grazing land per animal unit, was significantly less post-resettlement, but there were apparently still sufficient resources available to accommodate the needs of the residents of Nanguene and Chinhangane and their livestock (Chapter 6). The RAP made no arrangements to secure their access to commonly used resources such as forest and grazing resources, assuming that they would be able to gain access on their own initiative (Chapter 6). This proved to be another incorrect assumption.

Despite the fact that customary rules and norms of access are traditionally inclusive, resettling and host residents already knew before resettlement that there were going to be problems for the resettled residents to access the resources that they needed (Chapter 7). Resource access is determined largely by group membership in a lineage (Witter 2010) and is a key mechanism in social cohesion, identity and autonomy (Chapter 7). Maintaining the autonomy of Nanguene when they resettled was of utmost importance to some of the residents. They made this clear through a metaphor that was used repeatedly in a meeting held just before resettlement: they, especially those residents who were not members of the dominant lineage in the host village, Chinhangane, did not want to become 'children of another land'. Insufficient awareness on the part of the park staff about the importance of resource access and control of access, and their inaction after the meeting where these concerns were expressed, led indirectly to a situation where half of the resettled households left in search of a place to establish a new village (Chapter 7 and 9).

Acquiring an integrated understanding of people's livelihoods, and analysing how the compensation package helped and hindered the initial post-resettlement phase has led me to suggest that compensation might be more effective if it were based on existing practices that people have adopted in response to environmental and social changes. Borrowing from climate change studies, the concept of adaptive capacity becomes useful. Adaptive capacity is the ability of a system to adapt to stresses or changes in advance or adjust and respond to the changes caused by the stress (Engle 2011).

Expanding adaptive capacity is key to reducing vulnerability to the negative effects of climate variability (Smit and Wandel 2006; Engle 2011). Therefore, strengthening people's existing adaptive capacity may also be key to reducing vulnerability to resettlement. From the insights generated from this research presented above, we can see how practices that enabled people to grow enough food to be food self-sufficient in the marginal agroecosystem in which they live, and practices that regulated access and use of resources crucial to livelihood activities were disregarded. If the compensation had been built around these practices, instead of disregarding them, it may have reduced people's vulnerability to the environmental and social changes that resettlement entailed.

The same concept could be extended to the idea of 'resettlement with development'. Research on the cropping system revealed a new and serious threat to the food security of the entire region: the larger grain borer (LGB) (*Prostephanus truncatus*). The LGB is one of the most devastating post-harvest pests (Boxall 2002), and was only recently detected in the area (Chapter 5). This finding represents a major problem for Massingir where people depend on stored grain to get through years of low and erratic rainfall that only bring crop failure. We observed that well-constructed and maintained traditional granaries with grass-thatch roofs had less post-harvest pest infestation. Improving post-harvest storage practices has important potential as a development project for increasing food security of the newly resettled as well as the host residents. Instead of promoting short-term income generating activities, strengthening the existing practices that people have developed in response to the local conditions has a potential for generating long-lasting results.

Further Observations

Researching resettlement as a process has allowed me to analyse the linkages and inter-actions among policy enactment and compensation. This positioning also allowed for the identification of other overarching issues. In particular, two were identified that appear to have affected the process considerably: 1) the resettled and host populations' perceptions of the justice of the process, and 2) the framing and definition of the boundaries of the project.

5. The perceived injustice of the resettlement process

Perceptions of the justice of resettlement changed over the course of the resettlement process. From the resettled population's point of view, the justice of resettlement influenced their willingness to be resettled (Chapter 3), their willingness to cooperate with the park staff in resettlement planning (Chapter 4), and their degree of satisfaction with resettlement (Chapters 7 and 9). Their perceptions were determined to a large

degree by their social relationships with the park staff and the ways they were treated personally by individual members of the staff, as well as by the way that conflicts were resolved. Both the resettling and host populations wanted to be treated with respect and dignity by the park staff, especially because of the emphasis placed on the fact that resettlement was voluntary and participatory (Chapters 3 and 4). The effects were subtle but important. For example, when the leader of Nanguene refused to allow the transportation of posts to the new location without the villagers first receiving the promised cash compensation, the park staff agreed to their requests. This made the Nanguene residents feel that they were obliged to allow the transportation of the posts a few days later despite the fact that they were not satisfied with actual cash disbursed. The host village's perceptions of the justice of the interaction, in turn, affected the way that the host village responded to the resettled village. When they felt that they were not being well-treated by the park staff, especially when they felt that promises were made that were not fulfilled, they took this frustration out on the resettled residents by not providing them with the access they needed to resources (Chapters 6 and 7).

This analysis is strengthened when cast in the theoretical framework developed by Wayessa (2010) to analyse the attitudes of resettled and host populations towards resettlement, based on social psychology and development studies. Wayessa hypothesizes that attitudes towards resettlement are a function of perceived procedural justice, perceived livelihood-outcome justice, and the interaction between the two. Procedural justice refers to the perceived fairness of the decision-making and implementation processes (Wayessa 2010: 479). Wayessa (2010) claims that assessing attitudes is important because it relates to social representations, that is, what I refer to in this study as the meaning actors give to the policy process.

6. Framing and definition of project boundaries

The donors, consultants and park staff found it necessary to draw figurative boundaries to demarcate what was and what was not a concern of the resettlement project. The evidence presented in this thesis suggests that one of the reasons that resettlement leads to impoverishment is that crucial, contextual issues are not considered when project boundaries are (re-) framed and (re-) defined. In this case, for instance, some important factors that influenced the resettling residents' capacity to access resources were omitted. Access to resources was influenced by: 1) the conflicts that emerged during the process of negotiating the conditions for resettlement with the host village that influenced the host population's reluctance to share their resources, 2) the material compensation package itself, and what it did (enviable brick houses) and did not (sufficient cropping land) offer, 3) a sense among the host village residents of needing

to reserve their resources for their own use because of fear of losing access to the resources they might need in the future, 4) kinship connections between resettling and host residents, and 5) latent, history-bound and highly contextual conflicts about land, power and leadership that emerged during the process but were not directly related to Nanguene. The first two factors on this list were more or less directly related to the policy enactment and compensation process whereas the last three could be considered to be contextual and thus to lie outside the realm of the project. However, all five influenced access to resources and as such might have been placed more appropriately within the project's conceptual and operational boundaries. Some (numbers 2, 3 and 4) might be said to be foreseeable and thus concerns that could be addressed by smarter project design and through greater awareness of the importance of informal rules of access to resources and of kinship-based mechanisms for accessing land. Others (numbers 1 and 5), however, were less predictable and thus more challenging to the framing and definition of project boundaries. Resolution of this challenge depends in large part on the flexibility of the key actors to re-frame and define what the project is about as it unfolds.

This thesis does not try to judge whether or not the resettlement of the village of Nanguene from the LNP was a success or a failure. However, half of the newly resettled residents of the village of Nanguene aspired to found their own new village back inside the park only four months after being resettled. Other villages along the Shingwedzi River that were destined for resettlement were still unwilling to move in June 2010, 18 months after the resettlement of Nanguene. If, after watching the first village resettle, the post-resettlement situation had clearly offered a respite to the increasingly complex challenges of living inside a national park, others would have rapidly requested resettlement. The indications are that according to the criteria of the residents of the LNP, the process of resettlement left a lot to be desired. In trying to understand why resettlement of Nanguene unfolded as it did, each component of this thesis provides some answers, but other aspects remain unexplained. I propose that a deeper explanation might be found by questioning my initial framing of the research problem. In the following section I discuss the findings from my research in relation to existing literature, through an exploration of the assumptions underlying my research and the WB policy framework on resettlement.

QUESTIONING ASSUMPTIONS

WB OP 4.12 mainly focuses on minimizing the negative consequences of resettlement, believed to be an inevitable consequence of development. According to Dwivedi's (2002) distinction between reformist-managerial and radical-movementist approaches to resettlement, WB OP 4.12 fits squarely into the reformist-managerial approach.

Resettlement was inevitably going to occur in the LNP with or without this study; I wanted simply to understand how it happened. By situating my research within the limits of the resettlement process as it unfolded, I initially took for granted the underlying assumptions, embedded within the reformist-managerial approach, upon which the process was built. In a closer examination of these assumptions, I identified three that I now wish to question: 1) that a policy can prevent and mitigate undue harm, 2) that compensation can bring development, and 3) that people can 'be resettled'. By questioning these assumptions I contribute to the radical-movementist approach to resettlement, one that sees displacement as the manifestation of a developmental crisis, and focuses on the inequity that development seems to fuel (Dwivedi 2002).

Can policy safeguard against undue harm?

The safeguard policies of the WB, of which the WB OP 4.12 is one, are designed 'to prevent and mitigate undue harm to people in the development process' (World Bank 2011). The idea that resettlement policy can safeguard people from harm and be a 'guardian' of people's well-being,⁸⁸ intrinsically implies that the organization interested in promoting the development project can and is willing to 'protect' the people it uproots (Chakrabarti and Dhar 2009). The evidence presented in this thesis suggests that the assumption that the adoption and enforcement of a policy can prevent or mitigate harm is naïve if the complex and unique process through which policy is translated into action in context is not sufficiently understood and addressed.

The WB Involuntary Resettlement Sourcebook (2004: 257) recognizes the importance of policy implementation:

Resettlement outcomes depend on the quality of implementation. Even the best plans, prepared with tremendous attention to detail, do not by themselves improve the lives of resettlers—unless resettlement programs are also diligently implemented.

The sourcebook emphasizes the need for flexibility, the capacity to manage dynamic situations, and sensitivity to unexpected issues. However, the section on implementation, after beginning with the sentence quoted above runs counter to this understanding by providing an ordered list of things to do. The practical tips provided are insightful and important but the process of implementation is positioned as something that happens once the resettlement plans are made, and is framed as a linear process of carrying out *that which is written in the operational policy document*. What is lacking in this formulation is the awareness that policy is being shaped from the moment a policy

⁸⁸ Implying a paternalistic relationship between people and the WB, discussed in detail in (Chakrabarti and Dhar 2009)

framework is adopted into a project context by the meanings that the actors attribute to it (Chapter 3), that a policy as an abstract document over time is replaced by locally-relevant interpretations (Chapter 4), and finally, what policy-makers regularly consider to be 'context' actually shapes the policy in practice (Chapters 3, 4, 6, 7, and 8) (Honadle 1999; Braun et al. 2011).

This thesis presents research on policy enactment from the perspective of the resettling residents and the park staff responsible for carrying out resettlement. Mehta and Napier-Moore (2010) point out that few studies consider how displaced people view their own struggles. Whether the policy is viewed from the position of an outside observer or from the perspective of someone whose life is being affected by the policy makes a significant difference in the weight given to the various factors that influence policy enactment processes and their outcomes. The conclusions from this research point to the fact that the policy became a feature of the experiential landscape of both the resettling population and the people responsible for carrying it out. The policy process was embedded in and over time constituted by the context in which they live out their lives.

When policy is held to be the primary factor in shaping events and outcomes, if it fails to produce the expected results, the temptation is to explain failure as the result of poor implementation or factors that were beyond the scope of the project intervention. However, if policy is conceptualised as one more feature of the landscape, the analytic and operational focus is shifted from policy as an artefact to policy as a process. This shift gives primacy of local actors, power relationships and context in shaping outcomes.

Can compensation bring development?

The concept that resettlement can leave resettled residents equally or better off than before resettlement is based on 'compensation' as the primary mechanism. To compensate is to replace something that was taken away, therefore by definition it cannot provide more than what people had before (Cernea 2003). Cernea (2003: 11) makes the bold statement that the policy objective of leaving people better-off after resettlement is practically born dead. However, he then goes on to make suggestions such as generalized safety nets in addition to compensation, investment financing and a new economics of resettlement. However, as Chakrabarti & Dhar (2009) point out, development in the context of resettlement has become a short-hand term that homogenizes a complex process. Bringing rural people 'into civilization' through resettlement may not be what is seen as desirable by resettling residents; it is often more accurately interpreted as the desirable option from the point of view of the

implementers and the donors (Escobar 2003; Swainson and McGregor 2008). Reliance on experts to design a compensation package is based on the idea that the experts can find out in a rapid, cost-effective manner what (the diversity of) resettling residents need and want. To the contrary, 'development' must be situation-specific, and defined by the residents themselves (Koenig 2006; de Wet and Mgujulwa 2010).



Figure 10.1. The resettlement team at the LNP made and distributed t-shirts for all of the resettling residents that said in Portuguese, 'Turn resettlement into an opportunity for development.' (Photo credit: J Milgroom, April 2010)

The results of the photovoice exercise (Chapter 9) indicate that resettling residents knew clearly what they wanted from post-resettlement. Their concern about being well-received (having access to resources), and the high importance they gave to agriculture and grazing land, differs markedly from the LNP staff's focus on housing and monetary compensation. The WB OP 4.12 itself is concerned mainly with people's economic well-being and thus monetary compensation is assumed to be a viable option. However, the assumption that one-time, material or monetary compensation can serve to re-establish and improve livelihoods is overly optimistic. Many losses cannot be calculated. Spiritual, cultural and historic losses have no quantifiable value and cash compensation for these losses are meaningless as one-off events (see also Witter 2010). The technocratic and managerial bias reliant on 'counting' resources as the basis for valuation and compensation does not guarantee people will have access to the resources they need in their new location (Chapter 6). It might be further noted that it is not possible for short-term experts to calculate exactly 'what people have' in their original location because of the temporal and spatial irregularities in the bio-physical environment and the sporadic nature of harvesting resources from the forest. Moreover,

because the post-resettlement context is different, people's needs and wants will not be directly equivalent and it is impossible to know what will be necessary or desirable until people are physically living in the new context (Chakrabarti and Dhar 2009). I therefore suggest that for compensation to lead to development compensation must be designed by the resettling residents themselves.

Can people be resettled?

Those involved in carrying out or monitoring resettlement in the Nanguene case repeatedly accused the resettling residents of being opportunistic and of wrongly taking advantage of the situation (Chapter 4). They often disregarded the suggestions and preferences expressed by the residents (Chapters 4 and 7). These instances are a reflection of the assumption that people can be resettled, like pawns. The results from my research question this assumption. The resettling residents' perceptions of procedural justice (conclusion 6 above) and the difficulty of enforcing resettlement policy point to the central role of people's agency in the enactment of resettling (Long and van der Ploeg 1989).

People can be displaced and they can be assisted in being resettled, but they resettle themselves (Chapter 6 and 7). Numerous studies show that residents actively do many things to resettle themselves (Colson 1971; Maruyama 2003). When they do not agree with the design of the planned resettlement, they tend to re-resettle, as we saw in the case of Nanguene, by returning to their original location or resettling themselves in unexpected ways. For example, it has been documented in this study that some take advantage of the infrastructure provided by the compensation package and simultaneously continue to use the resources in the area from which they were removed (see also Maruyama 2003). These responses may be seen as adaptation, resistance or merely the result of a need to survive in an adverse situation. Regardless of the form they take and the interpretation made, it is ultimately the agency of the resettling resident him/herself that determines whether or not to resettle and how.

ALTERNATIVE ROUTES TO DEVELOPMENT

In 2000, the World Commission on Dams (WCD), heeding the criticisms of the risk-based model to resettlement proposed an approach based on the recognition of rights and an assessment of risks (WCD 2000: 206). The Rights- and Risk-based Approach (RRA) asserts that for resettlement to lead to more positive outcomes, it is imperative that resettlement planners engage with political and institutional factors, including consideration of power dynamics (WCD 2000: 19). The WCD argues that it is necessary to explicitly consider the rights, address risks and safeguard the entitlements of all parties involved. The approach is operationalised through processes of decision-

making based on negotiated agreements. The focus on process and attention to power dynamics appear to be major improvements with respect to the criticisms made in this thesis. The WCD approach has never been officially accepted by the WB (McDonald-Wilmsen and Webber 2010). However, for some critics of resettlement the approach does not go far enough to overturn the dominant model.

Chakrabarti and Dhar (2009: 214) propose the idea of a Resettlement Right. A Resettlement Right, as they describe it, 'empowers the subjects to question the development logic'. It is a conceptualisation that would allow people to reject resettlement. In the case that residents agree to be resettled, they call for a people centric policy whereby resettling groups themselves exercise self-governance and self determination in deciding about the design of their own rehabilitation. They propose a procedure by which power over decision-making is handed over to committees made up of and chosen by the resettling people. The committees would have the responsibility to monitor the process and effects of rehabilitation. To separate development from displacement should be a long-term policy objective (Dwivedi 2002), but in practice it is unlikely to be realized soon. Chakrabarti and Dhar recognize this but claim that there is no middle road that is valid.

Not risks, nor rights, but transforming rationality into democracy

This chapter has questioned the efficacy of policy to improve resettlement practice and outcomes and has concluded that we need to change deep-rooted ways of thinking about development and displacement. But how? Risk-based approaches, as outlined above, are the epitome of the reformist-managerial approach to resettlement focused on minimizing the negative effects of resettlement. They pay little or no attention to underlying political and power struggles. Rights-based approaches do better justice to human dignity and are better at capturing intangible damage caused by resettlement (Lustig and Kingsbury 2006; Grabska and Mehta 2008) but, as this thesis highlights, both approaches would inevitably be as transformed in the process of enactment (Rew et al. 2006) as the WB's OP 4.12. The analysis presented in this thesis lends itself to the call for a people-centred democracy that engenders a '...setting where the *process of translation* [of policy] is bound to democratic constraints of accountability, transparency, and participation...' (Lustig and Kingsbury 2006: 416 italics in original). I recognise that these are normative and culturally-embedded values, and therefore should be questioned in turn for their relevance in different contexts.

In many cases of resettlement, including the one presented in this thesis, the political context in which the resettlement takes place is far from conducive to a people-centred way of thinking. While one of the conclusions of this thesis is that participation

is a democratic tool employed in a non-democratic setting, how can it be expected that an even more radically democratic approach would give better results? This thesis has shown that by introducing ‘elephants of democracy’, or democratic elements into political contexts unprepared for democracy, it is difficult to guarantee democratic outcomes. Therefore there is no reason to believe that a more radically democratic approach would give better results except for the fact that the underlying values that come with imposed policies ultimately do influence the policy process. In this sense the findings of this thesis question the distinction between reformist-managerial and radical-movementist approaches to resettlement. Although WB OP 4.12 can be considered a reformist-managerial approach, the participatory aspect of the policy became, in practice, a space in which residents could question the underlying issues of equality and rights. Therefore, perhaps radical-movementist movements and reformist-managerial approaches to resettlement actually play off each other; the radical-movementist approach existing in response to the reformist-managerial approach. Through changes in the reformist-managerial approach, more changes become possible in the perspective of the radical-movementist approach. To get beyond this distinction, I pose a different question: why should people be excluded from the policy making bodies that design the policies that are implemented in their name?

The central concepts here are the need to abolish the division between resettlement policy-makers and the subjects of dislocation, and to change how we think about policy (Chakrabarti and Dhar 2009: 208; Wagenaar 2011). Policy-makers tend not to have lived the experiences for which they are designing the policy, leading to major disconnects between the expected policy process and the one that inevitable ensues (McGee 2004). Giving resettling residents the power to design their own resettlement does not mean that they merely should be consulted, or that they should participate in pre-ordained procedural designs but that they should be responsible for the planning and implementation of their own resettlement as suggested by Chakrabarti and Dhar (2009), and be able to manage and develop their own resources (Dwivedi 2002). The proposal embraces the importance of context in the policy enactment process and the notion that the criteria of success would be developed by the people themselves. This would require a major overhaul of the dominant development paradigm that does not see those who are resettling as capable of making responsible decisions.

The WCD's (2000) Risk- and Rights-based approach to resettlement does not go so far as to give the responsibility for the design of resettlement to the resettling people, despite their focus on negotiated agreements and attention to power relationships. My views differ from the Resettlement Right proposed by Chakrabarti and Dhar (2009) in that I assume that resettlement will continue to occur as a result of development

projects, and that it is unlikely that affected people will have the chance to veto development projects that cause resettlement. I am not proposing democracy as a system of governance, but that development project logic abandon rationality for a democratic, people-centred way of thinking that assumes that the people whose lives are being altered by a development project know best about how to rebuild their own futures.

The logical next question would then be how to deal with potential elite capture in this process? As we saw in the case of Beatrice (Chapter 9), and as has been reported in numerous intervention studies (Holland and Blackburn 1997; Draper et al. 2004), elite members of villages tend to benefit more from development projects, sometimes at the expense of the more vulnerable members of the village. How would a resettlement process like the case analysed in this thesis actually avoid making vulnerable people more vulnerable? I suggest that the first step towards answering this question would be to inquire about the varying ways that members of the village themselves think and feel about such a question. In Nanguene there were many voices that spoke out against inherent inequalities of the compensation package (Chapter 9). Patron-client relationships are the basis of the social fabric of many societies (Chabal and Daloz 1999). Perhaps there is a certain level of social inequity that is seen to be permissible, or even beneficial?

On the other hand, given the fact that such projects often are funded by international donors, companies or national development banks, how might minimisation of harm be attained? Here I propose to embrace and accept the phenomenon of simultaneous and often contradictory translation of policy by multiple actors. I think that it is valid for donors, back-stoppers or researchers to chime in as valued but not privileged members in the policy enactment process. This might allow more careful attention to be paid to the processes of the negotiations as they unfold, to the meanings that people give to the policy process, and for accountability of the indirect consequences of interventions. If this is not taken to heart, as Medha Patkar writes at the end of the WCD report (2000: 321), 'Even with rights recognised, risks assessed and stakeholders identified, existing iniquitous power relations would too easily allow developers to dominate and distort such processes.'

Cernea's IRR model revolutionized the way that resettlement policy was designed. He reflected that social policy set above the existing standard will always face resistance but in time the gap gets narrower (Cernea 1993). Higher standards, he argues, set in motion political and economic resources in support and provide affected people with something to lean on. The new WB resettlement policy became possible because of a

combination of factors: mounting protests ‘from the field’ and an enabling environment for change within the World Bank and donor community (Cernea 1993). Here I attempt to outline a way of thinking about resettlement policy, focused on the power of decision-making, that might allow people to be owners of their own futures in ways that may come to be compatible with existing resettlement practice.

In sum, I propose to ‘transform rationality into democracy’ echoing Wagenaar (2011). Instead of trying to make generalized principle-based policies that are supposed to be fit for all situations, the focus would be on process-based democratic self-organization. In this vision, resettlement would become a people-centred process in which citizens are enabled to design their own compensation and define their own development.

Although this suggestion might seem unrealistic, protest is mounting from many quiet corners against the dominant paradigm of development that drives processes such as resettlement. It is necessary to set the standards, not higher, but in a different place altogether. As Gans (1963: xii) writes, while ‘policy ideas and proposals may appear to be impractical and naïve... this is intentional...we have an obligation to look away from the mainstream and towards the future.’

A REFLECTION ON COMPETING CLAIMS ON NATURAL RESOURCES

When different groups lay claim to the same resources the most marginalized voices tend to be the least heard (Giller et al. 2008). Environmentally sustainable and socially equitable ways to deal with competing claims on natural resources are complex, but the effort seems increasingly necessary as the tensions around the use of natural resources become more acute, not least because of current trends of land grabbing (Borras Jr et al. 2010; Land Research Action Network 2011). This thesis has focused in-depth on a case of resettlement, an extreme case of competing claims on natural resources where people were forced to give up their lands and their livelihoods to make room for the development of a national park. The extreme nature of this case reveals dynamics that in less extreme cases may have remained concealed, and provides an opportunity for increasing our understanding of competing claims on natural resources. On the other hand, some of the findings generated in this thesis may not be relevant for cases for which the stakes are not as high for the actors involved, but this can only be determined on a case-by-case basis.

I reflect briefly here, in light of the study presented in this thesis, on the four hypotheses of the Competing Claims research programme before exploring the challenges and opportunities of interdisciplinary and action-oriented research for competing claims situations. The hypotheses are; 1) the occurrence and intensity of competing claims

on natural resources increases with human pressures irrespective of natural resource endowment; 2) competing claims can be resolved through either new technical options, new institutional arrangements, or combinations of these; 3) resolving or coping with competing claims will be achieved through 'win-win' solutions for a subset of stakeholders, which may at the same time be 'win-lose' solutions for other sets of stakeholders; 4) better informed negotiations, using results from scientific analyses, will assist in resolving competing claims (Giller et al. 2008: 34).

This research suggests that issues of power and rights are at the core of competing claims on natural resources. However, the hypotheses outlined above seem somewhat apolitical. Placing the struggle to control resources at the centre of the analysis seems to offer an explanation for the first and the fourth hypotheses. With respect to the first hypothesis, regardless of resource endowment, increased human pressure drives individuals and collective groups to engage in practices that re-establish their control over and access to resources (Chapters 6 and 7). With respect to the fourth hypothesis, people in positions of power may not want to see 'win-win' solutions for certain subsets of stakeholders, and what is 'win-win' at one point in time may not be so advantageous as events unfold (Chapters 3 and 4). Challenges posed by underlying struggles of power and rights, inherent in struggles over resources, are unlikely to be overcome through technical options and institutional arrangements (hypothesis 2) or through better informed negotiations (hypothesis 3), but over a long process of societal change that will inevitably lag behind the instance of competition over resources at hand. This process of societal change, however, may be able to be facilitated by a combination of technical options and new institutional arrangements, but more importantly, by better informed negotiations, but this is a topic that is out of the scope of this thesis. The Competing Claims hypotheses may prove to be accurate for certain contexts, but I would add two caveats: issues of power and politics must be dealt with in the analysis or the design of alternative scenarios for competing claims, and context should no longer be seen only as context, but as central to the enactment of competing claims.

The need for people-centred development processes that build on people's existing adaptive capacity becomes particularly pertinent in the case of competition over resources because of unbalanced power relationships and the exclusion of marginalized groups in decision-making processes (Maconachie 2010). The research presented in this thesis has provided further evidence that supports this point. Location-specific practices that depend on natural resources may make the difference between food self-sufficiency and hunger, especially in remote places where alternative sources of income and food are scarce, as in Massingir (Chapter 5). However, when people-centred development processes are not enabled locally, what role can international

policy or codes of conduct play in protecting the rights and livelihoods of local people? This thesis has illustrated how the enactment process itself is as important, or more important than the content of the policy in shaping the decisions made. In wider debates concerning international policy, national regulations, agreements, or codes of conduct as a way to deal with competing claims on natural resources, there is very little discussion on policy implementation, much less on policy enactment.

Challenges and opportunities in researching competing claims

Competing claims cannot be ‘resolved’, as the above hypotheses suggest, but perhaps research activities can contribute to the facilitation of more just ways to manage the immediate problem at hand. This raises the question of what kind of research is best suited for this. Findings from this thesis suggests that carrying out studies at a regional or national scale, or based only on quantification or survey data is likely to contribute to the same kind of misleading conclusions that form the basis of top-down management plans (Chapters 5 and 6). However, research based only on ethnographic methods fails to capture larger temporal and spatial scale dimensions of resources and resources use (Chapter 6). The competing claims project in which this study is embedded suggested that interdisciplinary, action-oriented research is necessary for the evolution of environmentally sustainable and socially equitable solutions to competing claims on natural resources (Giller et al. 2008). The research presented in this thesis was both interdisciplinary, or what I have preferred to call ‘integrated’ and action-oriented (Chapter 2). I therefore reflect on the challenges and opportunities that this kind of research presents in situations of competing claims on natural resources.

Challenges

The power dynamics, political sensitivity and heightened uncertainty characteristic of competing claims situations, and resettlement in particular, position the researcher in a delicate role and in an arena in which the researcher’s presence, actions or findings may bring about additional instabilities and unintended harm (Schmidt 2007). Any kind of research about conflicts, albeit latent conflicts, over the resources on which people’s lives depend is not a light matter. Even before engaging in any kind of action-oriented research, what I called the exploratory phase of my work, I faced the challenge of ‘walking the tightrope’, the need to engage in a constant balancing act to remain a legitimate figure in the eyes of the important actors with whom I interacted in my research and daily life (Chapter 8). This sensitivity was intensified once I began to engage in action-oriented research. Remaining legitimate was of utmost importance if I were to be able to observe and collect data from a range of sources and not just from one interest group, and to be able to carry out any kind of action. Although there proved to be many ways to proactively remain legitimate, sometimes external

factors out of my control caused relationships to change (Chapter 8). Action-oriented research clearly requires commitment to a particular set of extended values if it is to support change through activities that are not well-rewarded in academic circles.

In choosing methods and theories suited to the research questions, I engaged in a series of interdisciplinary studies (what I call integrated research—see Chapter 2). Although I had expected the research to entail more agronomic methods, the most salient, urgent questions turned out to be primarily social ones. By selecting and applying methods along the way as the questions and need arose, I experienced both the power of expanding my range of competence and creativity but also the hazards of learning from mistakes. As is common in interdisciplinary research endeavours, I found it challenging to reach sufficient depth in the different fields of research that I used. On various occasions the quality of my research was questioned from both the social sciences and the natural sciences. In academic circles I found myself constantly defending the relevance, necessity and importance of interdisciplinary research to discipline-based colleagues. Whether or not interdisciplinary research is the key to understanding the human-environment relationship so important for environmental and social sustainability, interdisciplinarity seems unlikely to flourish unless academic institutions make space for its contribution.

Opportunities

Reflection on how and when my research influenced the unfolding process of resettlement generates one further conclusion: it was not the eventual research results that made a difference. What did seem to make a difference was my presence and willingness to engage in the on-going discussions as an information courier (Chapter 8). Although I link some tangible changes to my presence, especially around the design of compensation, the biggest influence that I may have had on the resettlement process is likely to have been intangible (Chapter 8). The most effective tools that I offered as an action-researcher were to be present and pose questions.

Cernea (1996: 80) concludes that action-oriented research is one of the best ways to inform and understand policy processes in practice. Action-oriented research puts the researcher in a position where she/he must think with the people asking the questions and about feasible, workable, concrete actions. This requires a solid, and in part quasi tacit, understanding of the meanings, values and lifeworld perspectives of the people with whom he/she is researching as well as the multi-faceted historical, political, social, cultural and bio-physical limitations of the context. Fundamentally democratic methodologies, those that give primacy to people, their knowledge and their perspectives, are more likely to give rise to people-centred insights that can

contribute to the collective generation of socially just alternatives for dealing with competing claims.

I cannot conclude from one research experience that interdisciplinary, or what I call integrated research, has led to more insightful results than disciplinary research, but it did allow me to prioritize what I saw as 'relevant' research questions. By not being confined to a discipline, pre-set hypotheses or approaches, I was able to respond to the most pressing questions relevant to the people in the research setting. I was also able to contribute more generally to discussions about resettlement because of the varied types of information that I was generating. Knowledge about a wide range of topics concerning the resettlement initiative also helped me to gain legitimacy with the different actors, as discussed above.

I believe that interdisciplinary or integrated, action-oriented research is the future of science in situations of competing claims. While it will always be necessary to have disciplinary depth and develop basic scientific understanding, the kinds of complex societal problems that we face today will require creative responses that are more likely to be found at the margins and interfaces of disciplines. I also believe that the researcher involved in researching complex problems such as competing claims on natural resources has an important perspective to offer and has the potential, if not the obligation, to contribute to positive societal change.

CONCLUSIONS

Through studying resettlement as an unfolding process, I reach six conclusions about why the resettlement of Nanguene unfolded as it did: 1) the WB resettlement policy was used as a technical solution to a problem of politics and power, 2) participation is a democratic tool that was evoked in a non-democratic political culture, 3) enforcement of the WB resettlement policy was ineffective because donor and WB representatives expected policy to be implemented, not enacted, 4) compensation based on strengthening adaptive capacity has the potential to reduce vulnerability to the negative impacts of resettlement, 5) the perceived injustice of the resettlement process led to conflicts and resistance, and 6) the framing and definition of project boundaries left out important contextual issues.

These conclusions point to the need to question the assumptions upon which resettlement policy is based. I further conclude that policy cannot safeguard anyone from harm if policy implementation is not conceptualized as policy enactment, that compensation is not likely to bring development unless resettling residents themselves define the kind of development they want and design their own compensation, and

that people cannot be resettled - they resettle themselves. I tentatively propose an alternative way forward, with the men and women of Nanguene in mind. I am confident that had they been allowed to organize their own resettlement, it would have been cheaper, faster, more sustainable, and more equitable. Unlike the simulation game SimSafai, people cannot be clicked in and out of a national park with a computer mouse.

EPILOGUE

Overgrown grass reaching as high as the car windows almost completely hid any signs of the existence of the old road to Nanguene. 'This is the home of the tindlopfu (elephants) now', a young woman born in Nanguene said from the back seat as we drove into a field to pass a tree blocking the road, the wood still fresh from only recently having been pushed over by an elephant. Somehow I felt like I had never been there before, even though I still knew by heart the holes, the stumps and the mini topography of each stream bed that I had to cross to get to the location of the old village of Nanguene. One year and four months of no human maintenance of the landscape gave the place a very different feel. Before being resettled, a resident of Nanguene mused out loud as we were driving out of the village for one of the last times, 'They will turn our road that we maintain by hand into a shiny paved road for white tourists as soon as we are gone'. So far, that image had not materialized.



Figure E.1. Having recently woken up under this tree, these women were preparing to go fishing back in Nanguene for the first time since being resettled. The fires they lit around them to keep the animals away at night were still smouldering.

We parked in front of the old school and found the group of women who had travelled the day before by foot to visit their old home huddled under a xikutstu tree in a homestead that was once one of their common gathering places. Wrapped in colourful capulanas to guard against the early morning chill, still adjusting their head scarfs

after waking up, chattering away and munching on handfuls of dry maize porridge that they had carried with them on their heads in blackened metal pots covered with lacy cloths, their spirits were high. The women had built a ring of five fires, still smouldering, around the tree under which they had slept to scare away animals at night (Figure E.1). Around them half-torn down structures of their old houses stood in all states of disarray, like an abandoned village from another era. It was the first time since being resettled that the residents of Nanguene had returned for a visit to their old territory. They had come on a fishing expedition to the pools of the Shingwedzi; in Chinhangane they could not fish in the deep, swift current of the Olifants River. Small children and babies had been left behind with other relatives; men were nowhere to be seen. They hadn't come to bring fish home but to feast amongst themselves. 'Who has the matches?' someone called out as we were descending into the wide, sandy river bed. The rest of us waited in the shade of a fever tree while a young girl went running to fetch them, a necessary element for cooking their fresh catch. We crossed the river and took a path that cut through the forest to the other side of the bend in the river. Suddenly, one girl screamed something out, and in a chorus of excitement everyone took off running. Before I knew what was going on, some of the women were half-way up trees, clinging to slim, bending branches, shouting and singing. It was matoma season, mopane worms. We filled our buckets with fat, bright orange, yellow and white-spotted caterpillars the length and thickness of my finger, oozing with green juices as they were squished by the frenzy (Figure E.2). This delicacy was also scarce in their new home.

The first small depression in a bend in the river that we came to, where the women used to fish when they lived there, was dry, nothing more than a mud pit. As we walked on, back in the direction of Nanguene along the river bed, we came to a more promising spot. Women and girls quickly stripped off their shirts and shoes, dug the new mosquito nets that they had been given just after resettlement, probably still heavily impregnated with insecticide, out of their basins and marched into the small pool of brown, stagnant water. With two women on each net they worked in teams of two nets, and by slowly walking towards each other, keeping the nets as low as possible in the water tried to trap fish between them. Sun glistening on their wet skin, concentration was broken with fits of laughter as teams bumped into each other, got stuck in the mud and as mothers taught their daughters to fish. Their new life--although only 26 kilometers away by the road--is a different one.



Figure E.2 The women collected handfuls of caterpillars from the branches of mopane trees



Figure E.3. Women fishing with mosquito nets in the pools of the Shingwedzi River bed. (Photo credit: J Milgroom, March 2008)

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APPENDIX 1 Number of consecutive planting days, total rain (mm), total crop water requirement, crop satisfaction index, and harvest success or failure for each planting event from 2005-2009, as well as rainfall (mm) and maximum number of consecutive dry days for each growing period. INIT is 0 to 20 days after seeding, DEV is 21-45 days after seeding, MID is 46 to 75 days after seeding and LATE is 76 to 100 days after seeding corresponding to critical growth phases (Allen et al 1998).

Year	Start date a	Planting days b	Rain per planting event (mm)	Crop water requirement	Crop satisfaction index	Harvest success/ Failure (1/0)c	RAIN FALL (mm)				MAX DRY DAYS			
							INIT*	DEV*	MID	LATE	INIT	DEV	MID*	LATE
2005-2006	Nov 15	10	372	423	70	1	45.7	28.9	168.4	12.9	4	15	11	13
	Dec 28	5	473	389	100	1	177.9	123.9	131.7	39.5	5	13	12	13
	Jan 7	14	456.9	409	84	1	166.5	129	125.7	35.7	9	13	13	17
	Feb 9	8	297.8	317	64	1	123.8	128.3	33.1	12.6	11	13	24	25
2006-2007	Mar 1	8	180.2	273	59	1	121.9	39.5	12.6	6.2	13	16	25	36
	Mar 29	6	56.5	n/a	-	0	33.1	12.6	9.6	1.2	18	25	36	16
	Dec 5	5	176.4	412	-	0	51	45.4	71.2	8.8	13	16	17	17
	Dec 20	5	166.2	399	-	0	76	4.9	75.1	10.2	10	17	17	19
2007-2008	Jan 1	6	165	383	-	0	45.4	71.2	8.8	39.6	17	17	17	19
	Feb 7	5	122.6	321	-	0	75.1	10.2	30.6	6.7	17	19	12	23
	Mar 18	5	49.6	342	-	0	36.4	11.1	0	2.1	11	13	38	41
	Mar 30	5	39.4	n/a	-	0	30.6	6.7	2.1	0	9	20	41	26
2008-2009	Nov 11	8	183.1	425	43	1	37.8	100.5	44.8	0	8	8	7	30
	Dec 7	10	168.4	410	-	0	88.7	44.8	0	34.9	6	7	30	42
	Dec 17	5	131.6	401	-	0	59.1	35.6	31.3	5.6	7	10	40	42
	Jan 8	5	78.4	374	-	0	34.4	0	36.9	7.1	10	35	42	17
2008-2009	Feb 29	5	44	275	-	0	36.9	7.1	0	0	12	17	33	58
	Nov 12	8	250.5	425	59	1	104.7	29.4	81.7	34.7	9	32	13	7

Dec 25	11	167	393	43	1	87	54	13	13	12	13	10	18
Jan 24	10	73.2	348	-	0	50.7	8.6	13.9	0	6	10	18	24
May 7	5	169	n/a	-	0	16.1	0.8	0	0	19	44	53	53
2009-2010	Nov 21	5	166.8	-	0	32.5	55.1	39.8	39.4	9	12	21	11
	Dec 14	5	137.7	-	0	18.7	66.6	47.8	4.6	12	21	11	28
	Jan 3	7	132.4	-	0	47.8	41.1	25.5	18	17	21	25	28
	Jan 27	10	97.6	-	0	41.1	25.5	18	13	9	19	28	13
	Feb 18	5	58.4	-	0	25.5	4.6	26.4	1.9	16	28	13	24
	April 5	3	22.6	-	0	22.6	0	0	0	13	23	*	*

a As defined by > 20 mm rain over 5 days for first rain of the season and >10 mm rain over 5 days for the rest of the season.

b Number of consecutive days in which there was > 10 mm rain over 5 days.

c Observed

* Most important factors in determining the probability that the planting event would be result in harvest. A model containing these variables predicted correctly 100% of the observed responses and was used to predict harvest success/failure for all planting events in seasons from 1995-1996 to 2004-2005.

SUMMARY

Studies have shown that development projects such as dams and the establishment of conservation areas displace approximately 15 million people per year, leaving them worse off than they were before. In an attempt to remedy this undesirable consequence of their projects, the World Bank formulated the Operational Policy on Involuntary Resettlement, the most recent version of which is WB OP 4.12. The policy has become a globally-accepted standard. This policy stipulates that project-affected people should benefit from the development project displacing them, and be left better off or equal to their pre-resettlement conditions. The policy also encourages the participation of residents in the planning process. However, the extent to which international standards such as this one can safeguard people forced to resettle from undue harm caused by the development project is unclear.

This thesis is an account of an unfolding process of resettlement in the Limpopo National Park (LNP) in southern Mozambique. Based on fieldwork from 2006-2010, I combine an analysis of the enactment of resettlement policy with an integrated understanding of the lives and livelihoods of the residents of the area. This thesis documents and analyses the resettlement from multiple perspectives, while giving primacy to the lived experience, with the aim of contributing to our understanding of why resettlement is so often detrimental to people affected by the process.

The research was carried out with the primary objective of being relevant to the people with whom I was researching. This led me to engage in an interpretive methodology, a research design where the research questions emerged from the field, and to choose methods based on the research questions. This is described in more depth in **Chapter 2**.

The Limpopo National Park in Mozambique forms part of the Great Limpopo Transfrontier Park. About 27,000 people are currently living in the park; 7000 of whom are meant to be resettled to areas along the margins of the park. The Mozambican government and donors funding the creation of the park have maintained that no forced relocation will take place. However, the pressure created by restrictions on livelihood strategies resulting from park regulations, and the increased presence of wildlife has forced some communities to 'accept' the resettlement option. Nevertheless, donors and park authorities present the resettlement exercise as a development project. **Chapter 3** describes how the dynamics of the regional political economy of conservation led to the adoption of a park model and instigated a resettlement process that obtained the label 'voluntary'. I analyse the nuances of volition and the emergent contradictions in the resettlement policy process.

Based on an analysis of seven years of negotiations about resettlement of villages from the Limpopo National Park in Mozambique, **Chapter 4** explores how resettlement policy (WB OP 4.12) was enacted in practice. By combining insights from policy implementation and participation literature, we analyse how participatory spaces for influencing policy outcomes were opened and closed over time through reinterpretation of meanings attributed to policy concepts, and through changing power relationships. I assess how the resettling residents were able to influence decisions about post-resettlement conditions, and conclude that better implementation and enforcement of policy is not likely to mitigate the impoverishment risks of resettlement. This chapter questions whether what has been explained until now as problematic implementation of the resettlement policy due to lack of political will is not actually a misconceived notion of how the policy process works.

The design of the compensation package that resettled residents would receive was a major part of the resettlement process. The climate in the region of the LNP is such that people carried out diverse livelihood activities to deal with recurrent drought. Understanding the practices that people engage in to carve out their livelihoods is important for the design of compensation. Increasingly erratic rainfall and unreliable cropping seasons in southern Africa, combined with high food prices, heighten vulnerability of rural people to food insecurity. To determine how residents attain food self-sufficiency based on rain-fed maize farming in a semi-arid region that receives an average annual precipitation of 400 mm, we carried out a detailed, interdisciplinary study of the agricultural system in Massingir, Mozambique from 2006 to 2010. **Chapter 5** describes how people produced enough maize, when rainfall conditions were favourable, to sustain the food needs of a household for two to three years, buffering the negative effects of subsequent poor cropping seasons and avoiding seasonal hunger periods. To maximize production people employed a variety of practices including: planting after every rainfall event throughout the rainy season, up to six times in one season, on as large an area as possible, as much as 18 ha per household, and employing labour/oxen exchange arrangements. I explored the role of these practices as key factors that determined total food production and variability among households. Although 35% of planting events were successful, total seed sown represented only 8.5% of harvest over 15 years. Labour/oxen exchange arrangements allowed disadvantaged households to produce twice as much as without collaboration. Recent invasion of the larger grain borer (*Prostephanus truncatus*), a devastating post-harvest storage insect pest, represents a major new threat to the sustainability of the agricultural system and to food security that could worsen with climate change.

Chapter 5 concludes that each person needs 1.37 ha of land, including children to be able

to be food self-sufficient based on people's current practices. Compensation, however, provided only 1 ha per nuclear household. The land compensation provided was 3.4 times less land than needed per adult and did not take children into consideration. Residents were resettled in November 2008 before their park-allocated fields were ready, and too close to the cropping season to be able to arrange other fields. The rainy season of 2008-2009 was a decent year for production that the resettled residents mostly missed. This actually set them back much more than could be expected in another kind of cropping system i.e. one based on dependable annual rainfall and annual production. The resettling residents had to hold out without food, not until the next rainy season, but until the next good rains, which might come only in 3 or 4 years.

To understand the implication of natural resource use for resettlement, **Chapter 6** estimates the quality and quantity of four resources available in the pre and post-resettlement location (water, grazing resources, agricultural fields and forest), the entitlements to resources provided as compensation for resettlement, and the customary rules of access existing in the village before resettlement. We then provide an account of the resettled residents' process of accessing these resources in practice, the mechanisms they used to gain access and the limitations and challenges they faced. Overall the resources were comparable in quality between the pre- and post-resettlement locations and although there was less grazing area per animal unit (-29.53 ha), and cleared cropping land and forested area per person (-2.52 and -64.63 ha, respectively), there was sufficient grazing resources and cropping land to accommodate the resettled population. Compensation did not make special arrangements for access to grazing and forest resources, but customary rules of access were inclusive and park staff did not expect problems of access to arise. Despite this, resettled residents encountered major challenges to access resources. Our analysis suggests that resource use is ultimately shaped by the relationships between quantity, quality and access to resources. Understanding these relationships is important for the design of compensation.

Chapter 7 goes deeper into understanding the importance of access and control over access to natural resources in resettlement. A metaphor emerged in a meeting organized by the LNP staff to discuss the integration of the resettling village with the host village before resettlement in which the resettling residents claimed that they did not want to 'become children of another land'. This metaphor revealed the importance of autonomy and authority of the resettling residents. When members of the resettling village that did not belong to the ancestral lineage of the host village could not attain the kind of autonomy and authority that they had before resettlement, they returned to the park in search of a place to establish a new village. These events have three implications,

1) the relevance of metaphors for revealing underlying mental schemas that can lead to action, 2) the mutually reinforcing relationship between control over access to resources and authority, and 3) the importance of autonomy, identity and authority in explaining the social disarticulation that resettlement often leads to.

Chapter 8 explores my role in the unfolding process of resettlement in the LNP and the role of interdisciplinary, action-oriented research for contributing to alternative ways of dealing with competing claims on natural resources. Working in a tense political climate this research searched for a way to be relevant to the complex situation at hand. The objective of the research at the outset was to improve post-resettlement food security. While intending to carry out a formal cycle of action research focused on agricultural practices, the research found its niche in contributing to negotiations of post-resettlement conditions between park staff and village residents. Working interactively with multiple actors, I inquired about and presented information that could increase leverage in negotiations for the village residents while maintaining a balanced perspective about the challenges and limitations encountered by other actors in the process. Although the tangible influence of the research on the outcome of negotiations was subtle, I believe that untraceable consequences may have been more profound. Lessons learned include understanding that the process of the research can potentially contribute more to problem solving than polished research results. This potential contribution is dependent on investing in relationships with key actors and being present to witness, document, inquire and support the process as opportunities arise. The research is more likely to bring about change if it is explicitly socially-engaged, interdisciplinary, well-grounded with actors in multiple levels and coupled with information intermediation. In the type of conflictive context common in landscape development, we suggest that the role of the researcher differs from in a non-conflictive setting. In the context of conflict, the potential for the researcher to contribute to social change hinges on managing a balancing act between actors in conflict and the researcher, tailoring the research to the people, culture and specificities of each situation, and exploring creative modes of interaction.

Previous chapters in this thesis have presented the resettlement of the village of Nanguene in terms of specific empirical and/or theoretical concerns. **Chapter 9** offers an account of the unfolding process of the resettlement of the village of Nanguene as we, the residents of Nanguene and I, lived it. Various highlights of the story have been presented and analysed in the empirical chapters, at the cost of insight into the narrative experience that can be provided only by scrolling through the residents' experience of resettlement. In this chapter I describe resettlement as it unfolded, woven together with pictures taken by the resettled residents of Nanguene to document their experiences.

The empirical chapters of this thesis have contributed to topical scientific debates about participation, adaptation to climate variability and the importance of food self-sufficiency in marginal areas, how social and political systems are linked with natural systems via an exploration of the relationships among access, quantity and quality of resources and among access and control over access to natural resources with social cohesion. In **Chapter 10** I bring together insights derived in individual chapters to focus on the debate about resettlement. Through studying resettlement as an unfolding process, I reach six conclusions about why the resettlement of Nanguene unfolded as it did: 1) the WB resettlement policy was used as a technical solution to a problem of politics and power, 2) participation is a democratic tool that was evoked in a non- democratic political culture, 3) enforcement of the WB resettlement policy was ineffective because donor and WB representatives expected policy to be implemented, not enacted, 4) compensation based on strengthening adaptive capacity has the potential to reduce vulnerability to the negative impacts of resettlement, 5) the perceived injustice of the resettlement process led to conflicts and resistance, and 6) the framing and definition of project boundaries left out important contextual issues. These conclusions point to the need to question the assumptions upon which resettlement policy is based. I suggest that policy cannot safeguard people from undue harm unless the process of enactment becomes a central focus of attention; compensation cannot bring development unless the resettling residents can define development themselves; and people cannot be resettled—they resettle themselves.

RESUMO

Projectos de desenvolvimento, tais como barragens ou áreas de conservação da natureza implicam a deslocação de cerca de 15 milhões de pessoas por ano, deixando-as em pior situação do que a que inicialmente se encontravam. Numa tentativa de remediar esta indesejável consequência dos seus próprios projectos, o Banco Mundial (BM) estabeleceu a Política Operacional sobre Reassentamento Involuntário, sendo a WB OP 4.12 a sua versão mais recente. Esta política tornou-se um padrão globalmente aceite. Estipula que as pessoas afectadas devem beneficiar do projecto de desenvolvimento que as obriga a deslocarem-se, devendo ser deixadas em melhor ou igual situação à que se encontravam antes do reassentamento. Esta política encoraja igualmente a participação dos residentes durante o processo de planificação. No entanto, ainda não é inteiramente claro até que ponto estes padrões estabelecidos internacionalmente podem proteger as pessoas obrigadas a deslocarem-se devido aos danos causados por projectos de desenvolvimento.

Esta tese é um relato de um processo de reassentamento no Parque Nacional do Limpopo (PNL), no sul de Moçambique. Baseado no trabalho de campo efectuado entre 2006 e 2010, eu combino a análise da forma como a política de reassentamento se realiza na prática com uma compreensão integrada sobre a vida e os meios de subsistência dos residentes na área. Esta tese documenta e analisa o reassentamento sob múltiplas perspectivas, dando primazia à experiência vivida, com o objectivo de contribuir para o nosso entendimento sobre as razões que fazem com que o reassentamento seja tão frequentemente prejudicial para as pessoas afectadas pelo processo.

A pesquisa foi desenvolvida com o objectivo primário de ser relevante para as pessoas com quem eu estava a fazer a investigação. Tal fez com que eu utilizasse uma metodologia interpretativa, uma metodologia de investigação em que as questões para a pesquisa emergem do trabalho de campo, servindo posteriormente de base para a escolha dos métodos. Este processo é descrito em mais detalhe no **Capítulo 2**.

O Parque Nacional do Limpopo em Moçambique integra o Parque Transfronteiriço do Grande Limpopo. Cerca de 27.000 pessoas vivem actualmente no parque, das quais se espera que 7.000 sejam reassentadas nas áreas ao longo das margens do parque. O Governo Moçambicano e os doadores que financiam a criação do parque afirmaram que um assentamento forçado não aconteceria. No entanto, a pressão imposta pelas restrições às estratégias de subsistência, consequência dos regulamentos do parque e a presença crescente de animais selvagens forçou algumas comunidades a 'aceitarem'

o reassentamento como uma opção. Os doadores e as autoridades do parque encaram no entanto o exercício de reassentamento como um projecto de desenvolvimento. O **Capítulo 3** descreve a forma como a dinâmica da política económica regional de conservação levou à adopção de um modelo de parque e instigou o processo de reassentamento que obteve o rótulo de 'voluntário'. Aqui analiso as nuances da livre vontade e as contradições emergentes do processo de reassentamento político.

Baseado na análise de sete anos de negociações sobre o reassentamento de aldeias do Parque Nacional do Limpopo em Moçambique, o Capítulo 4 explora a forma como a política de reassentamento (WB OP 4.12) se realizou na prática. Combinando as abordagens da implementação das políticas públicas e literatura sobre participação, analisamos a forma como os espaços participativos que influenciam os resultados das políticas foram sendo abertos e fechados ao longo do tempo através da reinterpretção dos significados atribuídos aos próprios conceitos da política, reflectindo mudanças nas relações de poder. Avalio ainda a forma como os moradores dos reassentamentos foram capazes de influenciar decisões sobre as condições pós-reassentamento, e concluo que uma melhor implementação e aplicação da política provavelmente não levam à mitigação dos riscos do empobrecimento resultantes do reassentamento. Este capítulo questiona se o que foi até aqui explicado como uma política de reassentamento problemática resultante da falta de vontade política não será afinal uma ideia errada da forma como o processo da realização da política funciona.

O desenho do pacote de compensação que os residentes deslocados receberiam, constituiu uma parte considerável do processo de reassentamento. Dado o clima na região do PNL, as pessoas levaram a cabo diversas actividades para lidarem com a seca recorrente. O entendimento dos costumes em que as pessoas se envolvem para daí poderem obter os seus meios de subsistência é importante para o desenho do pacote de compensação. A falta de precipitação que se tem vindo a agravar e as épocas de colheita irregulares na África Austral, conjugadas com os elevados preços dos alimentos, aumentam a vulnerabilidade das populações rurais para a insegurança alimentar. Para determinar como os residentes atingem a auto-suficiência alimentar baseada na agricultura de sequeiro de milho numa região semiárida que recebe uma precipitação média anual de 400 mm, levámos a cabo um estudo detalhado e interdisciplinar do sistema agrícola de Massingir, Moçambique, entre 2006 e 2010. O **Capítulo 5** descreve a forma como as pessoas produziram milho suficiente, quando as condições de precipitação eram favoráveis, para manter as necessidades alimentares de um agregado familiar para dois ou três anos, abafando os efeitos negativos de colheitas menos abundantes e evitando os períodos de fome sazonal. Para maximizar a produção, as pessoas usaram uma variedade de práticas que incluem: o plantio após

cada evento chuvoso durante todo o período chuvoso, até seis vezes numa temporada, em áreas tão grandes quanto possível, até 18 ha por família, e empregando trocas de mão de obra pelo uso de bois para lavrar a terra. Eu exploro o papel destas práticas como factores determinantes para a produção total de alimentos e a variabilidade entre as famílias. Apesar de 35% do plantio ter tido êxito, o total de sementes semeadas representou uma colheita de apenas 8.5% durante 15 anos. As trocas de mão de obra pelo uso de bois para lavrar a terra permitiram às famílias menos avantajadas produzirem o dobro do que produziriam sem esse apoio. A invasão recente da praga devastadora pós-colheita *Prostephanus truncatus* representa uma nova importante ameaça para a sustentabilidade do sistema agrícola e para a segurança alimentar que se pode vir a agravar com as alterações climáticas.

O Capítulo 5 conclui que cada pessoa necessita 1.37 ha de terra, incluindo as crianças, para ser auto-suficiente em termos de alimentação, baseado nas práticas correntes da população. O pacote de compensação, no entanto, providenciou apenas 1 ha por agregado familiar. A terra de compensação atribuída foi 3.4 vezes menor do que seria necessário por adulto e não tomou em consideração as crianças. Os residentes foram levados para as áreas de reassentamento antes que os seus terrenos de cultivo dentro do parque estivessem prontos, e demasiado perto da época de colheita para que conseguissem organizar outros terrenos. A época de chuvas de 2008-2009 permitiu um ano de produção razoável que as populações deslocadas, em grande parte, perderam. Isto fez com que estas pessoas retrocedessem muito mais do que seria esperado noutro sistema de colheita, ou seja, um sistema baseado numa queda de precipitação anual variável e numa produção anual. Os residentes deslocados tiveram que resistir sem comida, não até à próxima época de chuvas mas até à próxima época de boas chuvas, o que pode acontecer apenas no prazo de 3 a 4 anos.

Para compreender as implicações do uso de recursos naturais para o reassentamento, o **Capítulo 6** estima a qualidade e a quantidade de quatro recursos disponíveis no pre- e pós-reassentamento (água, recursos pastoris, campos agrícolas e floresta), os direitos aos recursos providenciados como compensação para o reassentamento e as regras costumárias de acesso existentes na aldeia antes do reassentamento. Em seguida providenciamos um relato dos residentes deslocados acerca do seu processo de acesso a estes recursos na prática, os mecanismos usados para ter acesso a estes recursos e as limitações e os desafios que surgiram. Em geral, os recursos eram comparáveis em qualidade entre as áreas de pre- e pós-reassentamento e apesar de existir uma área de pastagem menor por cabeça de gado (-29.53 ha) e uma área de cultivo aberta e uma área de floresta por pessoa (-2.52 e -64.63 ha, respectivamente), existiam suficientes áreas de pasto e terra de cultivo para instalar a população deslocada. O

pacote de compensação não fez nenhum tipo de acordos especiais para o acesso a recursos de pasto e floresta mas as regras costumárias de acesso eram inclusivas e a equipa do parque não previa problemas de acesso. Apesar disto, os residentes alvo do reassentamento encontraram grandes desafios no acesso aos recursos. A nossa análise sugere que o uso de recursos é, em última análise, moldado pela relação entre quantidade, qualidade e acesso aos recursos. A compreensão destes relacionamentos é importante para o desenho do pacote compensação.

○ **Capítulo 7** aprofunda a compreensão da importância do acesso e controlo sobre o acesso dos recursos naturais no reassentamento. Uma metáfora surgiu num encontro organizado pela equipa do PNL para discutir a integração da aldeia de reassentamento numa aldeia anfitriã antes do reassentamento na qual os residentes afirmaram que não pretendiam ‘tornar-se os filhos de outra terra’. Esta metáfora revelou a importância da autonomia e a autoridade dos residentes alvo do reassentamento. Quando os membros da aldeia de reassentamento que não pertenciam à linhagem ancestral da aldeia anfitriã não conseguiram atingir o grau de autonomia e autoridade que possuíam antes do reassentamento, regressaram ao parque em busca de um local para estabelecer uma nova aldeia. Estes eventos têm três implicações: 1) a relevância das metáforas na revelação de esquemas mentais subjacentes que podem conduzir à acção, 2) o reforço mútuo da relação entre controlo sobre o acesso de recursos e autoridade, e 3) a importância da autonomia, identidade e autoridade na explicação da desarticulação social que o reassentamento muitas vezes causa.

○ **Capítulo 8** explora o meu papel no desenrolar do processo de reassentamento e o contributo de uma pesquisa interdisciplinar e orientada para a acção para novas formas de lidar com as reivindicações concorrentes sobre os recursos naturais. Enquadrada num clima político tenso, esta pesquisa tentou encontrar uma maneira de ser relevante para a situação complexa do momento. O objectivo da pesquisa no início era a melhoria da segurança alimentar pós-reassentamento. Ao mesmo tempo que pretendia levar a cabo um círculo de pesquisa para a acção focada nas práticas agrícolas, a pesquisa encontrou o seu nicho ao contribuir para as negociações das condições pós-reassentamento entre a equipa do PNL e os residentes da aldeia. Ao trabalhar de uma forma interactiva com múltiplos actores, questionei e apresentei informação que podia aumentar o peso das negociações a favor dos residentes da aldeia, permitindo ao mesmo tempo uma perspectiva equilibrada sobre os desafios e as limitações encontradas por outros actores no processo. Apesar da influência tangível da pesquisa no resultado final das negociações ter sido subtil, acredito que as consequências indetectáveis possam ter sido mais profundas. As lições aprendidas incluem que o entendimento do processo de pesquisa pode potencialmente

contribuir mais para a resolução do problema que resultados de pesquisa refinados. Esta potencial contribuição é dependente do investimento de relacionamentos com actores chave e de estar presente como testemunha, documentar, questionar e apoiar o processo à medida que surjam as oportunidades. É mais provável que este tipo de pesquisa consiga trazer a mudança se for explicitamente engrenado do ponto de vista social, interdisciplinar, bem solidificado com os actores aos vários níveis e complementado com mediação de informação. No tipo de contexto conflituoso, comum num cenário de desenvolvimento, sugerimos que o papel do investigador seja diferente do papel que lhe seria esperado num cenário não conflituoso. No primeiro caso, o potencial do investigador na contribuição para a mudança social consiste na gestão do equilíbrio entre os actores em conflito e o investigador, sendo a pesquisa moldada às pessoas, cultura e especificidades de cada situação e explorando modos de interacção criativos.

Capítulos anteriores nesta tese apresentaram o reassentamento da aldeia de Nanguene em termos de preocupações empíricas e/ou teóricas. O **Capítulo 9** apresenta um relato do processo do reassentamento da aldeia de Nanguene tal como nós (os residentes de Nanguene e eu) o presenciamos. Vários destaques da história foram apresentados e analisados em capítulos empíricos, negligenciando a experiência narrativa que apenas pode ser apresentada através da auscultação das experiências do reassentamento dos residentes. Neste capítulo descrevo o reassentamento à medida que este foi acontecendo, acompanhado com fotografias tiradas pelos residentes de Nanguene e que documentam as suas experiências.

Os capítulos empíricos desta tese contribuíram para os debates científicos sobre participação, adaptação à mudança climática e importância da auto-suficiência alimentar em áreas marginais, sobre a forma como sistemas sociais e políticos estão ligados com os sistemas naturais através da exploração dos relacionamentos entre acesso, quantidade e qualidade de recursos e entre acesso e controlo sobre o acesso as recursos naturais e a coesão social. No **Capítulo 10** junto as percepções resultantes de capítulos anteriores para me focar no debate sobre reassentamento. Através do estudo do reassentamento como um processo que se vai desenrolando, chego a seis conclusões sobre a forma como o reassentamento de Nanguene se desenrolou: 1) a política de reassentamento do BM foi usada como uma solução técnica para um problema de poder e política, 2) a participação é um instrumento democrático que foi evocado numa estrutura política não democrática, 3) a execução da política de reassentamento do BM não foi eficaz porque os doadores e os representantes do BM esperavam que a política fosse implementada e não realizado na pratica numa forma não linear, mas creativa e flexivel, 4) a compensação baseada no reforço da capacidade

de adaptação tem potencial para reduzir a vulnerabilidade dos impactos negativos de reassentamento, 5) a injustiça do processo de reassentamento levou a conflitos e resistência, e 6) o enquadramento e a definição das fronteiras do projecto excluiu aspectos contextuais importantes. Estas conclusões apontam para a necessidade de questionar os pressupostos sobre os quais a política de reassentamento se baseia. Sugiro que as políticas não podem salvaguardar as pessoas de danos desnecessários a não ser que o processo de realização da política na prática passe a ser um ponto de atenção fundamental; a compensação não pode trazer desenvolvimento a menos que os residentes sujeitos ao reassentamento possam definir desenvolvimento por si próprios; e as pessoas não podem ser reassentadas – elas reassentam-se sozinhas.

SAMENVATTING

Ontwikkelingsprojecten, zoals het bouwen van dammen of het ontwikkelen van beschermde gebieden, leiden jaarlijks tot het verplaatsen van ongeveer 15 miljoen mensen. Deze mensen zijn na hervestiging of verplaatsing vaak slechter af dan daarvoor. In een poging om de ongewenste gevolgen van hun ontwikkelingsprojecten te verminderen, heeft de Wereldbank het operationele beleid ten aanzien van onvrijwillige verplaatsing geformuleerd (Operational Policy on Involuntary Resettlement). De meest recente versie daarvan is WB OP 4.12 en het beleid is uitgegroeid tot een wereldwijd geaccepteerde standaard voor het verplaatsen van mensen. Het beleid stelt als voorwaarde dat mensen zouden moeten profiteren van het ontwikkelingsproject dat tot hun verplaatsing heeft geleid, en dat hun nieuwe leefomgeving en omstandigheden beter of gelijk moeten zijn aan die van voor de verplaatsing. Het beleid stimuleert ook de participatie van bewoners in het planproces. Echter, het is niet duidelijk in hoeverre een internationale standaard mensen die gedwongen worden zich opnieuw te vestigen kan beschermen tegen onnodige of vermijdbare schade veroorzaakt door ontwikkelingsprojecten.

Dit proefschrift beschrijft het verplaatsingsproces van bewoners van het Limpopo National Park (LNP) in het zuiden van Mozambique. Op basis van veldwerk dat werd verricht tussen 2006 en 2010, combineer ik een analyse van de zich vormende praktijk van het verplaatsingsbeleid met een geïntegreerde analyse van de levens en de levensomstandigheden van bewoners in het gebied. Dit proefschrift documenteert en analyseert het verplaatsingsproces vanuit meerdere perspectieven, echter primair vanuit de ervaringen van bewoners van het park. Het doel is een bijdrage te leveren aan ons begrip over waarom verplaatsingsprocessen vaak zo nadelig zijn voor mensen.

De primaire doelstelling van het onderzoek was relevant te zijn voor de mensen met wie ik onderzoek deed. Hiervoor gebruik ik een interpretatieve methodologie, een onderzoeksoptzet waarbij de onderzoeksvragen in het veld en met de mensen ontstonden, en ik koos onderzoeksmethoden op basis van deze onderzoeksvragen. Dit wordt beschreven in **Hoofdstuk 2**.

Het Limpopo National Park in Mozambique maakt deel uit van het Great Limpopo Transfrontier Park. Momenteel wonen er ongeveer 27,000 mensen in het park; 7000 van hen worden geacht zich te verplaatsen naar gebieden langs de randen van het park. De Mozambikaanse overheid en donoren die de aanleg van het park financieren hebben beweerd dat er geen gedwongen verplaatsing zal plaatsvinden. Echter, als gevolg van regelgeving omtrent de ontwikkeling van het park, staan strategieën van

deze mensen om in levensonderhoud te voorzien onder druk. Ook de toegenomen aanwezigheid van wilde dieren hebben dorpen noodgedwongen doen besluiten de verplaatsingsoptie te 'accepteren'. Desalniettemin blijven de donoren en parkautoriteiten het verplaatsingsproces presenteren als een 'ontwikkelingsproject'. **Hoofdstuk 3** beschrijft hoe de dynamiek van de regionale politieke economie omtrent natuurbehoud heeft geleid tot de omarming van het parkmodel, en tot een verplaatsingsproces dat het label 'vrijwillig' heeft gekregen. Ook analyseer ik de nuances van de 'vrije wil' en de opkomende tegenstrijdigheden in het beleidsproces rondom de verplaatsing van mensen uit het LNP.

Op basis van een analyse van zeven jaren van onderhandelingen over de verplaatsing van dorpen uit het Limpopo National Park in Mozambique, beschrijft **Hoofdstuk 4** hoe de uitvoering van het verplaatsingsbeleid (WB OP 4.12) zich ontwikkelde in de praktijk.

In het hoofdstuk combineren we inzichten uit de beleidsimplementatie literatuur en de participatie literatuur. Vanuit deze literatuur analyseer ik hoe de participatieve ruimte voor het beïnvloeden van beleid werd geopend en gesloten door de herinterpretatie van de betekenis toegeschreven aan beleidsconcepten, en door veranderende machtsverhoudingen door de tijd. Ik bestudeer de mate waarin parkbewoners in staat waren om beslissingen over verplaatsing te beïnvloeden, en ik concludeer dat een betere uitvoering en handhaving van het verplaatsingsbeleid niet automatisch zal leiden tot het beperken van verarmingsrisico's voor bewoners. Het hoofdstuk concludeert met de vraag of wat is uitgelegd als de problematische uitvoering van het verplaatsingsbeleid als gevolg van een gebrek aan politieke wil, niet veel meer te maken heeft met een verkeerde opvatting van hoe beleid en beleidsprocessen in de praktijk werken.

Het ontwerp van het compensatiepakket voor parkbewoners was een belangrijk onderdeel in onderhandelingen in het verplaatsingsproces. Het klimaat in het gebied van het LNP is zodanig dat mensen diverse activiteiten ontplooiën om in hun levensonderhoud te voorzien. Op die manier proberen om te gaan met de terugkerende droogte in het gebied. Inzicht in deze activiteiten voor het voorzien in levensonderhoud is essentieel voor het ontwerpen van het compensatiepakket. De in toenemende mate onregelmatige regenval en onbetrouwbare teeltseizoenen in zuidelijk Afrika, in combinatie met de hoge voedselprijzen, vergroten de voedselonzeekerheid voor mensen op het platteland. Tussen 2006 en 2010 hebben ik een gedetailleerde, interdisciplinaire studie van het landbouwsysteem in Massingir, Mozambique uitgevoerd. Het doel van deze studie was om beter te begrijpen hoe bewoners zelfvoorzienend kunnen zijn in hun voedselbehoefte op basis van niet-

geïrrigeerde productie van maïs in een semi-aride regio met een gemiddelde jaarlijkse neerslag van 400 mm. **Hoofdstuk 5** beschrijft hoe huishoudens genoeg maïs kunnen produceren en overhouden – geproduceerd in jaren dat de regenval gunstig was—om twee tot drie jaar in hun voedselbehoefte te kunnen voorzien. Hiermee creëren ze een buffer voor toekomstige slechte teeltseizoenen en seizoensgebonden hongerperiodes. Om de productiecapaciteit te maximaliseren, maken de huishoudens gebruik van een verscheidenheid aan praktijken, waaronder: het planten na elke regenval gedurende het gehele regenseizoen, tot zes keer in één seizoen, op een zo groot mogelijk stuk land, maar liefst tot 18 ha per huishouden, en afspraken over het uitwisselen van arbeid en dierlijke trekkracht om het land te bewerken. Ik onderzocht de rol van deze praktijken als belangrijke factoren die de totale voedselproductie en de variatie tussen huishoudens bepalen. Hoewel maar 35% van de pogingen tot aanplant tot succesvolle oogst leidde, vertegenwoordigt het totaal gezaaide zaad slechts 8,5% van de totale oogst van de laatste 15 jaar. De afspraken over het uitwisselen van arbeid en dierlijke trekkracht stellen kansarme gezinnen in staat om twee keer zoveel te produceren als zonder deze afspraken. De recente invasie van de grote graanboorder (large grain borer or *Prostephanus truncatus*), een insectenplaag die het opgeslagen graan verwoest, vormt een grote nieuwe bedreiging voor het landbouwsysteem en de voedselzekerheid.

Hoofdstuk 5 concludeert dat elke persoon 1,37 ha grond nodig heeft (inclusief kinderen) om op basis van de huidige praktijken te kunnen voorzien in voedselzekerheid. Het compensatiepakket biedt echter slechts 1 ha per nucleaire huishouden. De verstrekte vergoeding voor land was 3,4 keer minder dan nodig is per volwassene en houdt geen rekening met de kinderen. Ten tijde van de verplaatsing in November 2008 waren de toegewezen velden nog niet klaar om gewassen op te verbouwen, en het proces van verplaatsing zat te dicht op het teeltseizoen om nog andere velden te kunnen regelen. Het regenseizoen van 2008-2009 was een redelijk jaar voor de landbouw, die de verplaatste huishoudens grotendeels hebben gemist. Dit zet deze verplaatste huishoudens met hun landbouwsysteem in feite veel verder terug in vergelijking tot huishoudens met landbouwsystemen op basis van betrouwbare jaarlijkse neerslag en jaarlijkse productie. De verplaatste huishoudens moesten het uit zien te houden zonder voedsel, niet tot het volgende regenseizoen, maar tot de volgende goede regens, die pas over 3 of 4 jaar zouden kunnen komen.

Om het verband tussen het gebruik van natuurlijke hulpbronnen en de verplaatsing van mensen te kunnen begrijpen, inventariseert **Hoofdstuk 6** de kwaliteit en kwantiteit van vier beschikbare natuurlijk hulpbronnen in de locaties voor en na de verplaatsing (water, grasland voor begrazing, landbouwareaal en bossen), het recht op natuurlijk hulpbronnen als compensatie voor de verplaatsing, en het gewoonterecht voor toegang

tot natuurlijke hulpbronnen die bestaan in de gemeenschap. Vervolgens beschrijven we hoe verplaatste groepen in de praktijk toegang hebben tot de natuurlijke hulpbronnen, de mechanismen die ze gebruiken om toegang te creëren en de beperkingen en uitdagingen waarmee ze worden geconfronteerd. Over het geheel genomen waren de natuurlijke hulpbronnen vergelijkbaar in kwaliteit op de locaties voor en na de verplaatsing. Hoewel er minder grasland per dier (-29,53 ha) en minder opgeschoond landbouwareaal en bosgebied per persoon (-2,52 en -64,63 ha, respectievelijk) beschikbaar was, was er, in theorie, voldoende grasland en landbouwareaal om de verplaatste bevolking tegemoet te komen. Het compensatiepakket bevatte echter geen speciale regelingen omtrent de toegang tot de grasland en bossen. Het gewoonterecht geeft iedereen toegang tot deze natuurlijke hulpbronnen en het parkpersoneel verwachtte hieromtrent geen problemen. Desalniettemin ondervonden de verplaatste huishoudens grote problemen met betrekking tot de toegang tot deze natuurlijke hulpbronnen. Onze analyse laat zien dat het gebruik van natuurlijke hulpbronnen wordt gevormd door de relatie tussen kwantiteit, kwaliteit en toegang tot hulpbronnen. Inzichten in deze relaties zijn belangrijk voor het ontwerp van het compensatiepakket.

Hoofdstuk 7 gaat dieper in op het begrijpen van het belang van de toegang tot en controle over natuurlijke hulpbronnen in verplaatsingsprocessen. Een metafoor ontstond in een bijeenkomst georganiseerd door het parkpersoneel om de integratie tussen een dorp dat verplaatst zou worden met het gastheerdorp te bevorderen. Hierin gaven de bewoners die naar het gastheerdorp zouden worden verplaatst aan dat zij geen “kinderen van een ander land” wilden worden. Deze metafoor onthult het belang van autonomie en autoriteit voor de bewoners die verplaatst worden. Verplaatste bewoners die niet behoren tot de voorouderlijke lijn van het gastheerdorp en die niet de autonomie en de autoriteit konden verkrijgen die ze hadden vóór de verplaatsing, keerden terug naar het park op zoek naar een plek om een nieuw dorp te stichten. Deze gebeurtenissen hebben drie implicaties: 1) het belang van metaforen voor het openbaren van onderliggende manieren van denken en mentale modellen die kunnen leiden tot actie, 2) de wederzijds versterkende relatie tussen de controle over natuurlijke hulpbronnen en autoriteit, en 3) het belang van autonomie, identiteit en autoriteit in het verklaren van het ontwrichten van sociale cohesie waar verplaatsingsprocessen vaak toe leiden.

Hoofdstuk 8 onderzoekt mijn rol in het proces van verplaatsing van bewoners uit het LNP en de bijdrage van interdisciplinair, actiegericht onderzoek aan het verkennen van alternatieve manieren van omgaan met claims op natuurlijke hulpbronnen. Binnen het gespannen politieke klimaat heb ik gezocht naar een manier om relevant zijn met

mijn onderzoek voor de complexe situatie die was ontstaan rondom het verplaatsen van mensen uit het LNP. Het aanvankelijke doel van het onderzoek was een bijdrage te leveren aan het verbeteren van voedselzekerheid na verplaatsing, middels een formele cyclus van actieonderzoek gericht op landbouwpraktijken. Echter, gedurende het onderzoek werd het bijdragen aan de onderhandelingen tussen parkpersoneel en dorpsbewoners rondom de voorwaarden en het compensatiepakket voor verplaatsing steeds belangrijker. Door interactief te werken met meerdere actoren, probeerde ik informatie in te winnen en te delen die de onderhandelingspositie van de bewoners zou kunnen verbeteren, met behoud van een evenwichtig perspectief over de uitdagingen en beperkingen die andere belanghebbenden ondervonden in het proces. Hoewel de concrete invloed van het onderzoek op de uitkomst van de onderhandelingen beperkt was, geloof ik dat de minder tastbare resultaten een grotere impact hebben gehad. Een van de lessen is dat het onderzoeksproces als zodanig mogelijk een grotere bijdrage kan leveren bij het oplossen van problemen dan de uiteindelijke gepolijste onderzoeksresultaten. Deze potentiële bijdrage is afhankelijk van het investeren in relaties met de belangrijkste actoren en de aanwezigheid van de onderzoeker om te observeren, te documenteren, te informeren en het proces te ondersteunen als kansen zich voordoen. Het onderzoek heeft meer kans om verandering teweeg te brengen als het maatschappelijk betrokken en interdisciplinair is, wanneer het is verankerd met actoren op verschillende niveaus, en wanneer er uitwisseling van informatie tussen de onderzoeker en verschillende actoren plaatsvindt. Met betrekking tot de conflictueuze context rondom landschapsontwikkeling, concluderen we dat de rol van de onderzoeker verschilt van een niet-conflictueuze context. In de context van conflict is de potentie van de onderzoeker om bij te dragen aan sociale verandering afhankelijk van het balanceren tussen actoren in een conflict, het afstemmen van het onderzoek op de mensen, de cultuur en specifieke kenmerken van iedere unieke situatie, en het verkennen van creatieve vormen van interactie.

De vorige hoofdstukken in dit proefschrift beschrijven de verplaatsing van het dorp Nanguene vanuit specifieke empirische en/of theoretische problemen en perspectieven. **Hoofdstuk 9** biedt een overzicht van het zich ontvouwende proces van de verplaatsing van het dorp Nanguene zoals wij, de bewoners van Nanguene en ikzelf, het hebben beleefd. Diverse specifieke thema's zijn gepresenteerd en geanalyseerd in de empirische hoofdstukken. Dit gaat vaak ten koste van de rijke inzichten die voortkomen uit de verhalen en vertellingen van de bewoners die werden verplaatst. In dit hoofdstuk beschrijf ik het proces van verplaatsing door gebruik te maken van foto's die zijn genomen door de verplaatste bewoners van Nanguene en worden gebruikt om hun ervaringen te documenteren.

De empirische hoofdstukken van dit proefschrift hebben bijgedragen aan actuele wetenschappelijke debatten over participatie, aanpassing van productiemethoden aan klimaatverandering, het belang van zelfvoorziening op voedselgebied in marginale gebieden, hoe sociale en politieke systemen zijn gekoppeld met natuurlijke systemen via een verkenning van de relaties tussen toegang, kwantiteit en kwaliteit van natuurlijke hulpbronnen, en tussen toegang en controle over natuurlijke hulpbronnen en sociale cohesie. In **Hoofdstuk 10** breng ik de verkregen inzichten uit de afzonderlijke hoofdstukken bijeen in het debat over de verplaatsing van mensen. Door verplaatsing als een zich ontvouwend proces te bestuderen, bereik ik zes conclusies die verklaren waarom de verplaatsing van Nanguene is verlopen zoals beschreven: 1) het verplaatsingsbeleid van de Wereldbank werd gebruikt als een technische oplossing voor een probleem van politiek en macht, 2) participatie is een democratisch instrument dat werd ingezet in een niet-democratische politieke cultuur, 3) de handhaving van het verplaatsingsbeleid van de Wereldbank was niet effectief, omdat vertegenwoordigers van de donor en Wereldbank verwachtten dat het beleid werd geïmplementeerd, in plaats van dat het door de praktijk vorm zou krijgen, 4) compensatie op basis van het versterken van het aanpassingsvermogen heeft de potentie om de negatieve effecten van verplaatsing te verminderen, 5) de vermeende onrechtvaardigheid van de verplaatsingsproces leidde tot conflicten en weerstand, en 6) de omschrijving en definitie van de projectgrenzen hebben er toe geleid dat belangrijke contextuele vraagstukken buiten beschouwing werden gelaten. Deze conclusies wijzen op de noodzaak om de assumpties waarop verplaatsingsbeleid is gebaseerd te heroverwegen. Ik stel voor dat verplaatsingsbeleid mensen niet kan beschermen tegen onnodige of vermijdbare schade, tenzij centraal staat dat beleid in de praktijk vorm wordt gegeven; compensatie kan niet tot ontwikkeling leiden, tenzij mensen zelf ontwikkeling kunnen definiëren; en dat mensen niet kunnen worden verplaatst—ze verplaatsen zichzelf.

EXPRESSING GRATITUDE

The breezy, lively city of Maputo with its wide boulevards flanked with flamboyant trees and perched on a cliff overlooking the sea, was a home to me in Mozambique. But the research that formed the core of this thesis consisted of frequent trips to 'the field'-- the dusty, mysterious frontier town of Massingir, the Limpopo National Park, and nearby villages. Each stint away from Maputo seemed to encompass a lifetime of experiences, and in many ways, the journey of my PhD, from conception to completion was like a trip to Massingir. Through evoking my experience of this trip, one that I made many, many times, I would like to show my appreciation to those who made it possible.

Every trip to Massingir entailed significant preparation. Assembling the food and materials I would need was fairly straightforward. This was also the case with the trajectory that landed me in Wageningen. Attracted by the emphasis the university website placed on interdisciplinary research, I visited in December 2004 to see for myself. I first met Ken Giller, then Janice Jiggins, and Cees Leeuwis, and was convinced. Since then, on every research excursion to Massingir, all three of you have been crucial elements of my journey, providing me figuratively with both sustenance and tools for my stay in the field. In many ways you shaped the research and the experience more than anyone else. I have great respect for all three of you and find myself extremely lucky to have been able to work with you. Khen, I have learned a lot from working with you and have enjoyed getting to know you, both professionally and personally. We had a fun trip to Massingir together in 2006, hunting down coffee in Mabalane, searching for the rivers in each village, identifying *Gloriosa superba* among the mopane trees, and debating the potential for agricultural research to contribute to development. I want to thank you for believing in me and supporting me throughout the research process, especially when I wasn't going in the direction that either of us expected. Cees, the first time I met you, or, I should say, observed you in a meeting, I was impressed by your style of listening. This has proved to be an invaluable quality of your supervision from which I have benefitted greatly. You patiently read version after version of Chapter 4 asking me each time, so what is it that you want to say here?, until I could find clarity for myself. In the home stretch of the writing process I enjoyed our useful and productive weekly meetings that provided the kind of consistency that I needed to be able to finally finish. Janice, all throughout you have been a source of inspiration and motivation. Full of ideas, tools, methods, contacts and alternative perspectives, you have provided me with a step stool each time I couldn't quite reach something I was grasping for. You edited tirelessly and were always willing to coach me through concepts I didn't quite understand. I want to thank both you and Niels for the enjoyable meals shared at

your house, and I look forward to more discussions in which somehow or another we manage to put the world straight over a glass or two of wine.

More challenging than preparing the materials I would need for the trip was the mental preparation and planning of the fieldwork. This paralleled the period of time that I spent in Wageningen before going to Mozambique, during which I took courses and wrote my proposal. Exploring interdisciplinarity and action research was an important part of this preparation and through the Competing Claims research program I was able to engage, not just in this initial period, but throughout the research journey, in discussions about these topics. I would like to thank Paul Hebinck for provoking me about my decisions and direction when I was coming to terms with the boundaries between disciplines. I always appreciated Ignas Heitkonig's curiosity about interdisciplinarity and Annemarie van Paassen's exploration with me about action research. Paul Richards sparked interest in me about the seed system both from the point of view of the seed itself and as a way to understand social mechanisms. Along these lines, I thank Conny Almekinders for extensive consultations while I was in the field about topics such as landraces, open pollination, and selection criteria.

Friends and colleagues made this time of preparation a little lighter. Among the first lovely people I met in Wageningen were Santiago and Pablo, followed soon by Pytrik, Mariana R., Mariolijn and Glaciela with whom I shared the Peace Palace in the Harweg when PPS was dominated by men. I would like to especially thank Mariana R. for later guiding me through challenging parts of my fieldwork, and Andy for helping with spatial data analysis. I extend my appreciation to the rest of the PPS chair group for many interesting lunch meetings, debates and nice cakes at coffee time. I am grateful to Bert R for always finding a place for me to sit in PPS, Valente for saving me from digital crises on a number of occasions, and to Charlotte, Ria and Gijsbertje for assistance with many questions, problems and transactions. A work of thanks is also in order to Claudius for looking out for me in this phase, especially when we coincided briefly in South Africa.

The first year I spent in Wageningen wouldn't have been complete without Wilson and Luis A. from whom I began to learn to dance Mozambican style. Wilson, we also worked together, and through frustrations and lengthy debates, as well as through sharing personal tribulations and joys, we have developed an important friendship. I would also like to mention some of the people who enriched my life in this period, many of whom are still doing so... Manon, Ernesto, Mariana W., Jaime, Eduard, Luis J., Tom, Alex, Rik, Myriam, Inge, Taas, Joop, Simone whom I first met in Chile, and Bart who brought acrobatics into my life...and some who I found later, Marieke, Sander, Victor

Hugo, Erica, Valerio, Amir, Theo, Tito, Monique, Gunnar and Inês.

Once I finished packing my car and planning my research, the travelling began. Maputo only has one main road that leaves the city to the north. This road starts in the Maputo of colonial buildings and concrete, and crosses the Maputo of sprawling residential neighborhoods where most residents of Maputo actually live. The public mini-buses, the chapas, swerve in and out playing bumper cars with each other across an indeterminate number of lanes, sometimes four, sometimes five, on the two lane road. Avoiding chapas, policemen, and potholes, the location and size of which I committed to memory as they grew after each rain, was much like the obstacles and challenges I encountered while starting a research endeavor unlike any I had ever undertaken before. A few key people taught me to maneuver around these obstacles, especially Rachel DeMotts, Marja Spierenburg, Rebecca Witter and later Jen Shaffer. These four remarkable women taught me a lot of what I knew before I started about how to carry out qualitative research.

Once out of the city's limits, the national road was a smooth and, for the most part easy drive. Turning off the national highway towards Massingir from Macia, however, began a progressively long, empty, straight, hot road lined with dense, savannah woodland, interrupted by small villages and dispersed charcoal-producing families. By this point in the drive, after having stopped to fuel up, and for fruit and vegetables along the roadside, the sun was high overhead. A stop in Chokwe was a necessary break. Regular contact with the Competing Claims crew, after long stretches of solitary fieldwork had this kind of feeling to it, like getting out of the hot car and sitting in the shade with a cold juice. Camaraderie developed over time, and it was fun to see people grow and change as we all struggled with our own topics on different sides of the same borders. I especially thank the company and friendship of Petronella, Yves, Chrispen, Xavier, Armindo, Marc and Fred. On the Mozambican side of the border, Nicia became a like a sister to me—although we rarely saw each other in the field, we shared many experiences including pregnancy and babies. Special appreciation goes to Karen E., Jens, and Maja. Jens, you have taught me heaps about analysis and interpretation of qualitative data, as well as how to turn a story into an article. I often think about the stop you and Judith made to Xai Xai to help me with a paper—thank you for that. Maja, from the very beginning I think that we shared a certain sense of humor—there has been more than one inexplicable giggling occasion that I can remember. You have also been a great resource for me on many levels.

Arriving to Massingir was always sweet as the smells, sounds and sights of my other home greeted me through the sunset hue mingled with smoke from the cooking fires.

In Massingir, the person to whom I am most indebted is Elisa, my translator, research assistant and friend. Elisa, you accompanied me in my research activities from 2007 to 2010, starting with our epic journey walking back from the north of the LNP, listening for wildlife and looking for puddles of water after my car broke down, laughing so as not to be afraid. A major part of the accomplishment of this thesis is thanks to you, Elisa—your patience in learning to translate and your company day to day made many things possible. I extend the same sentiment to Reginaldo with whom I also worked closely. Reginaldo, your genuine, kind heart and high tolerance for hard, hot work made you an invaluable partner-in-crime.

A cold 2M with Billie on his veranda overlooking the Massingir Dam was one of the small but not insignificant pleasures of arriving in Massingir. Billie, I definitely looked forward to your bbqs, even though all I ever could contribute was vegetables, of which you would have none. Artemisa, you were another key character in Massingir—inspiring and full of energy. Thank you for friendship and for making your house mine. A luta continua.

Eng. Massango and David, we all know that resettlement is not easy. I always appreciated the height of the mountain you had to climb to tackle the challenges of resettlement, stuck between a rock and a hard place. My research, especially my capacity to understand the challenges you faced, was deeply enriched by discussions with you. I thank you for sharing with me your reflections and your concerns throughout the process. I extend this thank you to the rest of the LNP staff, especially Majacuzito and Thomas, to Dr. Madope from the TFCA unit and to Alois from KfW.

Inside the park's gates, in Nanguene was where I, professionally and personally, was most transformed. The time that I spent in Nanguene, then in Chinhangane after resettlement, was full of humbling and confronting experiences as well as hilarious and joyous ones that I will reflect on for a long time to come. Vaka Nanguene, Ba Simone, Kokwani Emelina, Mamana Amelia, Madala Zhita, Ba Domingos, Mamana Salia, Mamana Arleta, Mamana Beatrice, Ba Alisao, Mamana Silvie, Mamana Faileta, Khanimambo svinene! Nakuxuva n'wina. Nitavuya... I hope to show my appreciation in person before too many years pass.

Like conferring with the elders, throughout my research I consulted with many people in Mozambique and South Africa. I would like to thank Carlos Dominguez, Roland Brouwer, Marc Stalmans, Cornelio Ntumi, Cynthia Donovan, Calisto Bias, Pedro Fato, Egas Nhamucho, Antonio Jorge, Eng Mauricio, Juvencio, Salomao Bandeira, Ernesto Boana, and the AHEAD group, Steve Osofsky, Michael Murphree, Marshall Murphree,

Nicky Shongwe, Greg Simpson, Gavin Thompson, Dave and Meg Cumming, Markus Hofmeyr, Harry Biggs, Mike Kock, Craig Beech, Madyo Couto, Anna Spenceley, among others. I would also like to thank Mena dos Anjos, Larry Swatuk, Simona Montanari, Jaime Nhamirre, Dorien Rhebergen, Irene Verbeek and Marlies Elderman for being a part of my research journey.

My vehicle was a key part of my research. It allowed me to get to research locations where there was no public transportation, to take people, goods and information back and forth, and it also gave me a certain amount of security as I wandered in the same territory as the elephants that began to make their presence more and more noticeable as the time passed. However, it also left me extremely vulnerable when it no longer wanted to cooperate with me. I owe a special mention of thanks to Dr. Siteo for helping me out of a similar situation, not with my car, but with my research vehicle in a metaphorical sense. Thank you for going out of your way for me in a crucial moment.

At the end of the day, after we cooked our meal over the fire, we filtered water from the river bed and had taken a bucket bath between the trees, there were moments for some enjoyment of the stars. Friends in Mozambique made these moments of relaxation remarkable. Marilia, Gert, Frank and Rudy, many sweet Sundays were spent with you on the beach or around your table...powerful Mamana Marilia certainly knows how to cook... Matanhane, Piriquito, and Teles, obrigada familia pela diversão, a amizade, os risos... Patty, Luis, Jenny, Gina, Dito, Inusso, Alberto, Michaela, Rosa, Magdalena, Hugo, Astrid, Carla, Troels, Nazare, Luis Carlos, Sandra and Luka, thank you for a slice of your lives.

On the morning of the day I was to travel back to Maputo, I would awaken, like every other day, with the daybreak chatter of the women and children in the household compound. The 5 AM cool calm was incongruously broken by laughter and activity as the young boys let the cows and goats out of their kraals and the mamas prepared jugs to get water from the river. On these days I counted the hours back from sunset to plan my departure so that I would arrive in the city well before dark. The long, hot stretch of road back to Maputo, like the process of analyzing data and writing the thesis was somewhat more settled and better accompanied than the drive out. Returning to Wageningen after four years in Mozambique I found many of the same people who accompanied me on my way, but I also picked up new people along the road. Among the first people I found on my way back was Steve, accompanied in spirit by Myriam and Nina, who always had an inspiring way of making me rethink my assumptions. As a counter-balance, having the chance to discuss with Todd always helped to put my feet on the ground again and find my direction. Horacio and Marc quickly became

invaluable companions and friends in and outside of the office—this last year and a half would have been much more solitary and difficult without the two of you. It would have been a desert, however, without Cecilia. Cecilia, you are the most creative person I've ever met—you and Esmý have become a permanent part of my family. This year I have appreciated getting to know and learning from Severine, Barbara, Rasmus, Augustin, among many other colleagues in the CIS group. I especially would like to thank Annette, Sylvia, Vera and Mirjam for all of your help on a myriad of things. To my childhood friend Esy, thank you for the design of this thesis. This is the second book we work on together, and I look forward to many more books in the future.

Bouncing over potholes and with the windows open for air, sometimes it was hard to hear the music in my car as it wafted from my little external speakers, but it was always on. Music, like food for my soul accompanied me throughout each trip. A few people were like music to me on my larger journey. Petra and Madeleine, my pair-o-nymphs, what more do I need to say? Like a good folk song, you two, in very different ways, make me happy to just be. Petra, your wisdom and insight is a gift I will carry with me long and far. Madeleine, sweet fun and gentleness, the days we spent in the garden and the nights around my table were some of my favorite moments of the last two years. Jose, a flamenco fusion tune, I missed you even before reaching the end of the block when I would leave for the field, and meeting you at the door of our apartment in Maputo when I finally arrived was often the best moment of the trip. Thank you, and thanks to your family, especially Antonio and Mayoyes, for supporting me all the way through. And my little Nia, a soundtrack of pure joy, the most heart-wrenching moments of my whole PhD were those in which I had to leave you behind, but luckily most of the time I could tie you on my back and take you with me. Finally, my family, my parents and my brother Travis, you are a 14-minute Leonard Dembo song, strong, steady, and unfailing. None of this would have been possible without you.

ABOUT THE AUTHOR

Biographical Sketch

Jessica Milgroom began her life in a setting similar to one described in this thesis. Having been born in Nairobi, Kenya, she spent her first year observing primates with her mother in Amboseli National Park. She grew up in the northeastern United States, primarily in Ithaca, New York. She went to high school in Ithaca, Mexico City, Surrey, England and after graduating spent a year as an exchange student in Japan.

Jessica attended Cornell University, which sparked her interest in agriculture and development. She was first exposed to these issues in practice from an academic and research point of view at the West Africa Rice Development Association (WARDA), in the Ivory Coast (now called The Africa Rice Center, located in Benin) where she had the opportunity to spend a summer. Subsequently, she spent 7 months in Brazil carrying out research for her Bachelors' thesis on an agroforestry experimental station that was part of the Large-scale Biosphere Atmosphere project in the Amazon. This experience with nitrogen-fixing trees turned her on to the social aspects of agricultural research.

After graduating from Cornell, Jessica was awarded a Fulbright scholarship to spend two years in Spain, where she worked at the Institute for Sustainable Agriculture in Córdoba. Her research on soil erosion in organic olive orchards resulted in a field manual for farmers to evaluate their own erosion risk levels. Still not satisfied with the gulf between research and practice, she applied for and was awarded a three-year Graduate Research Fellowship from the National Science Foundation of the United States to engage in graduate studies and eventually to produce this thesis.

PE&RC PhD Education Certificate

With the educational activities listed below the PhD candidate has complied with the educational requirements set by the C.T. de Wit Graduate School for Production Ecology and Resource Conservation (PE&RC) which comprises of a minimum total of 32 ECTS (= 22 weeks of activities)



Review of literature (4.5 ECTS)

- Competing claims in the Limpopo National Park: conservation, livelihoods and vulnerability (2006)



Writing of project proposal (4.5 ECTS)

- Seed systems and access to natural resources in the Gaza Province, Mozambique (2006)

Post-graduate courses (11.5 ECTS)

- Interpretive analysis; WASS (2011)
- Social theory in natural resource management; University of Copenhagen (2011)
- Socio-cultural field research methods; Mansholt Graduate School (2006)

Invited review of (unpublished) journal manuscript (1 ECTS)

- Journal of contemporary African studies: cross-border migration and livelihoods (2009)

Deficiency, refresh, brush-up courses (24 ECTS)

- Quantitative analysis of cropping and grassland systems (2005)
- Communication and innovation studies (2005)
- Technography, researching technology and development (2006)
- Geo-information tools (2006)

Competence strengthening / skills courses (2.1 ECTS)

- Professional communication; CERES (2006)
- Linear models; PE&RC (2009)
- Information literacy; PE&RC (2005)

PE&RC Annual meetings, seminars and the PE&RC weekend (3 ECTS)

- Competing claims on natural resources annual meeting (2006-2012)

Discussion groups / local seminars / other scientific meetings (5 ECTS)

- Animal Health Environment And Development (AHEAD) (2006-2010)
- Social Learning (2005-2006)
- Soil Nutrient Dynamics (2005-2006)

International symposia, workshops and conferences (11.4 ECTS)

- World Conference on Action Research (2006)
- European Conference on African Studies (AEGIS) (2007)
- African Studies Association Annual Meeting (2007)
- American Anthropological Association Annual Meeting (2007)
- Northeast Workshop on Southern Africa (2008)
- European Society for Agronomy Congress; AGRO (2010)

Lecturing / supervision of practical's / tutorials (1.5 ECTS)

- Advanced communication science; 2 days (2010-2011)
- Innovation management and cross-disciplinary design; 1 day (2011)
- Climate change and agrarian development; 1 day (2011)
- Competing claims master class; 1 day (2011)

Supervision of 3 MSc student; (9 ECTS)

- Soil nutrient balance
- Use and inventory of forest resources
- Animal production systems

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