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LIVELIHOODS AND LAND USE CHANGE IN RURAL SOUTH AFRICA :

THE UNFINISHED TRANSFORMATION

by

Brent McCusker

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ABSTRACT

LIVELIHOODS AND LAND USE CHANGE IN RURAL SOUTH AFRICA : THE UNFINISHED TRANSFORMATION

By

Brent McCusker

The principal issues discussed in this dissertation stem from the introduction of six land reform projects into six different rural communities in the Northern Province of South Africa. I uncover the impacts of the projects by integrating traditional social science methods with geographic information technologies such as GIS and remote sensing. Data sources include household survey data collected by the author and six Landsat images. I argue that livelihood systems have not significantly benefited from the introduction of land reform projects, nor have the expected changes in land use occurred. I conclude by presenting the major reasons for the failure of the land reform projects.

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Nkosi Sikelel iAfrica!

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LIST OF TERMS AND GEOGRAPHIC NAMES

Africans- black indigenous people (non-white, non-Indian, non-coloured)

Apartheid- the legal separation and discrimination based on race. Dates effective: 1949-1994.

Apartheid South Africa – the Republic of South Africa under minority white control that affected, codified, and enforced racially discriminatory acts and actions against the majority black population.

Apartheid state – the institutions of governance during the apartheid era.

Bophuthatswana- the homeland for the Tswana people under apartheid located in northwest South Africa along the border with Botswana. One of the four so-called 'independent' republics.

Control Farm- the group of residents in a rural area chosen for interviewing due to the nature of their farming system. The answers of this group was meant to provide a control, or check, against the answers from members of Communal Property Associations.

Communal Property Association (CPA) – the program under which land was redistributed from 1994-2000. Refers to the entity consisting of transferred farmland and any capital transferred with the land.

Department of Land Affairs (DLA)- the state agency charged with land reform. Part of the Ministry of Agriculture and Land Affairs.

Escarpment - the physiographic region in the east center of the Northern Province characterized as the border between the lower plateau to the east and the higher plateau to the west.

Gazankulu- the homeland of the Gaza people under apartheid located in the east of the Northern Province.

Gauteng - the province that encompasses the major urban core of South Africa including Johannesburg, Soweto, Kempton Park, Germiston, Pretoria, and Midrand. Adjacent to the Northern Province on the south.

Homeland- an area designated for blacks under apartheid. Homelands were ethnically constituted. Three major political groupings developed: 1) the so-called 'independent' homelands, the self-governing homelands, and the dependent homelands. The degree of 'independence' from the Republic of South Africa differed across the groups, but the effective control of the affairs of all homelands lay in Pretoria at all times.

Highveld - the area to the west of the escarpment region in the Northern Province. Characterized as higher in elevation and drier.

Lebowa - the homeland of the Northern Sotho people under apartheid. Located in two discontinuous large blocks in the center and small units scattered through the east of the Northern Province.

Lowveld- the area to the east of the escarpment region in the Northern Province. Characterized as lower in elevation with more humidity than the highveld.

Northern Transvaal – anecdotal reference to the northern part of the old Transvaal province. Not a distinct province before 1994.

Transvaal- the northern most of South Africa's four provinces until 1994. The province included present-day Mpumalanga, Gauteng, and Northern Provinces and half of the Northwest Province.

Union of South Africa- South Africa under English settler control loyal to the crown. Became the Republic of South Africa after 1949 when the Afrikaner white minority gained control of government.

Venda- the homeland of the Venda people under apartheid. Located in the far northeast of the Northern Province. One of the so-called 'independent' republics.

Chapter One

Introduction to the Dissertation

Land reform, rural poverty alleviation, and social transformation were intended to go hand-in-hand in post-liberation South Africa. Land reform since 1994 has included land restitution, land reform, and land tenure reform. Under land restitution, communities that were illegally removed from their homes, communities, and land under apartheid era law can petition the government for restitution of, or compensation for their property. Land tenure reform seeks to end the widespread chaos in tenure arrangements created under the apartheid system. Multiple and overlapping tenure systems are being simplified and codified. The transfer of land formerly owned by whites through a willing-buyer, willing-seller program to blacks, called land reform, is the focus of this dissertation. I examine the impact of the Communal Property Association program – the land reform delivery system – on the livelihoods of the members and land use change on the transferred land.

The research questions raised in this dissertation stem from the introduction of six land reform projects into six different rural communities, namely:

1) What are the specific responses of rural livelihood systems to such a change – how did land reform effect *in situ* livelihood systems?

2) Is change on the transferred lands evident in land cover and land use patterns – can the social driving forces of such change be identified from the remotely sensed images?
3) Did land reform result in the expected changes in both livelihood systems and land use change?

These research questions are drawn from three broad and interrelated theoretical bodies of work, specifically livelihood systems, land cover and use change, and land reform. Throughout this work, two themes repeat and provide pivotal insight into the story of land reform, livelihoods, and land use change, specifically gender relations and issues of scale. Additionally, I draw upon the literature on resettlement and cooperatives to address issues of time and transition.

Livelihood Systems

Livelihood systems are explored in this study and are contextualized as the mechanisms that people pursue to ensure social reproduction, garner income, and meet the various obligations of self and society. Livelihood systems in South Africa are diverse and dynamic. For clarity and precision I preface the term 'livelihood' in this dissertation with the adjective 'rural' whether visibly printed or not. This dissertation will not explore urban or peri-urban livelihoods.

Livelihoods in rural South Africa can be understood in the broader African context, yet retain locally specific tendencies. Livelihoods throughout the

continent have increasingly incorporated non-farm and off-farm activities (Bryceson, 1997). This is no more so the case than in the Northern Province of South Africa, the study region. In fact, non- and off-farm employment constitute the core of rural livelihoods in the Northern Province (Baber, 1996). Migration, petty commodity production, and employment in the civil service are significant contributors to rural livelihoods.

Agriculture is in transition in many livelihood systems across Africa (Bryceson, 1997) and the study area is no exception to that trend. Agriculture remains an important cultural icon and provides subsistence for many households, but is rapidly becoming a less important source of actual household income.

Land Use and Cover Change

Land cover and use change is defined in this study as the temporal shifts in vegetative cover and human uses for a given parcel of land. The hypothesis here is that land use will have intensified on transferred lands. To reject or support this claim, land cover patterns are identified via satellite imagery and interpreted to derive land use for two periods, 1988/9 and 2000. The two periods are then compared to understand patterns of change on and around the six land reform projects.

In this study, land use / cover change provides a contextual basis for analysis of the impact of land reform on the landscape. Land use and cover

change, or the lack thereof, can be related to the social processes driving livelihood change and visa-versa. The scope and spatiality of change illustrated in such an exercise broadens the range of theoretical questions. Further, understanding land use change in this manner helps provide clarity and verification or rejection of both hypotheses and information garnered through less explicitly spatial methods such as interview schedules and informal discussions.

Land Reform

Defined here as the transfer of previously white-owned land to black communities, land reform constitutes the core of this study in that the land reform event precipitated the changes under examination in this dissertation. Land reform is narrowed from its legal definition in South Africa. The Department of Land Affairs defines land reform as the transfer of land from whites to *any individual or group* of black citizens (DLA, 1995). I exclude transfers between individuals in this study as the dynamic of social transformation in such transfers is far more limited than those that involve individual to community transactions.

The underlying theme of this dissertation is focused on land reform, begging the question - has it worked? I contextualize the land reform program in South Africa against counterparts across the world, measuring progress temporally to provide points of comparison and departure. The resettlement and

cooperatives literature is examined to address issues of transition and the timing of this investigation in the project life cycle. I address the question " how long does it take for livelihoods to adapt to a land reform project?" in order to gauge the results of the study, either as trends or transitions. I then compare other case studies with the South African land reform project - the Communal Property Association (CPA). The CPA program, operating from 1996-2000, facilitated land transfers by pooling the resources of black communities in order to purchase farms that would have been otherwise unobtainable. The program was designed to provide start-up and program capital as well as technical assistance and a legal operating framework. Using the data collected during fieldwork and drawing on the literature, I analyze the progress of the Communal Property Associations at their fourth anniversary and relate the findings to livelihoods and land use change, seeking clear and scientifically defendable relationships.

Dissertation Outline

The next chapter sets a theoretical basis for the discussion of livelihoods, land use change, and land reform in rural South Africa. I review the relevant literature regarding each as well as the important contributing themes of gender relations, scale, and resettlement. The contributing themes, in many instances, shed as much light into the dissertation as the so-called 'main themes'. In discussions, I have chosen to integrate the literatures and themes to present a

more holistic, rather than rigid systematic, analysis. The major assumptions are stated and the research questions are then raised.

The context of the study is set in Chapter Three. I provide background information on the Northern Province and the specific study sites. I employ government census data to provide a broad understanding of livelihoods in the province and describe the progress of land reform.

I lead into the core of this work with the presentation of the data in Chapter Four. I provide information on the methods utilized and then segment and discuss each. I start with a review of the interview schedule data, focusing on income generation, food shortages, coping mechanisms, the constituents of livelihood systems, the systems of land use and authority, and members' perceptions of the CPA. I then center one of the recurrent themes, gender, and gather together the key findings. Statistical relationships in the data are next explored. Finally, I describe the method of analysis for the identification of land cover and use change. I show the scope of change for each study site and ponder the social driving forces of change. I specifically attempt to link social process and satellite-derived interpretations of change.

In Chapter Five, I address the research questions presented in chapter two providing explanations of the key findings in the context of the larger literature and the local environment. An evaluation of the impacts of the land reform projects on livelihoods is undertaken and a discussion of the utility of satellite-derived change analysis follows.

I construct a narrative regarding the relationship between the land reform event and livelihoods and land use change in Chapter Six. In this chapter I attempt to provide explanation for the "unfinished transformation" by specifically grounding my arguments within the local context *and* the relevant literatures. This chapter addresses the questions

1) Has land reform delivered the anticipated level of rural poverty alleviation?
2) What were the reasons for success or failure at the farm level?
3) What were the reasons for success or failure at the regional scale?
4) Are the processes identified trends or symptoms of transition?; and
5) What were the expectations and what could be expected based on examples from the literature?

I conclude in Chapter Seven by locating the study in the literature, identifying its relevance to the discipline and science in general, and posing questions for future research. I identify the assumptions and limitations of the study and provide recommendations.

Chapter Two

Review of the Literature

2.1 Introduction

This review of the literature brings together three fields of study that have been only weakly linked together. The relationship between these three topics is central to this dissertation. I will attempt to show the complementarity of the livelihoods, land use change, and land reform literatures in order to ground the findings of this study presented in the following chapters.

I begin each section with an overview of the dominant themes in the general literature. I then emphasize the topics most pertinent to this study and re-examine them focusing on the study area - rural South Africa. When reviewing the literature on livelihood systems I pay particular attention to the definition of livelihoods, livelihood strategies, the construction of the term 'household', gendered relations, and the literature covering the above issues that has particular relevance to South Africa. Regarding land use and land cover change, I situate the broad literature and focus specifically on scale in land use change studies, examples of broad relevance, and case studies and issues pertaining to South Africa. The discussion on land reform encompasses land alienation issues, land tenure types and land tenure reform, and land reform

choices and policy direction. This chapter concludes with a synthesis and critique of these three literatures.

2.2 Contextualizing Rural Livelihoods

The term "livelihoods" has engendered a lively debate between theoreticians examining livelihoods either as a function of household economics or those that view household livelihoods as a social construct, derived from dialogue and dialectic between multiple scales, structures, and actors. The rift between the two competing ideologies has narrowed recently (Ellis 1993) and the resulting productive discourse has been reflected in a more integrated, although still somewhat disconnected literature on livelihood systems. In an attempt to be both conceptually rigorous and thorough, I will first examine the meaning of the term "livelihood" and will follow with a review of the various arguments on the composition of livelihood systems. Finally, I will present the literature relevant to livelihood in South Africa, with a few specific examples from the Northern Province. It must be noted here that the focus of this study is on *rural* livelihoods, therefore the bulk of the literature discussed here refers to rural rather than urban or peri-urban livelihood systems.

2.2.1 *Definition, Composition, and Debate*

Defining the term "livelihood", specifically rural "livelihood", is a process facilitated by a wealth of literature on the topic (see Bernstein, *et.al.*, 1992). I wish

to be clear here and first separate constituent components of the term to avoid lateral confusion between "livelihood" and other terms, most notably "coping mechanisms", "food security", "vulnerability" and "agriculture/farming". This study specifically addresses issues of livelihood, of which the terms coping mechanisms, food security, vulnerability, and agriculture/farming are a part of or closely related to, but not the same as "livelihood". A coping mechanism occurs when a household or individual's livelihood system has been disrupted in some way and an alternative path is sought to overcome hardship. Food security refers to the ability of a household or individual to obtain enough food to maintain basic life functions. Vulnerability refers to how likely a household or individual is to suffer hardship due to a change in livelihood. Agriculture is a component of livelihood, not to be equated with the term livelihood.

Definitions are usually contested and debated and the definition of "livelihood" is no exception. However, opinions have gathered around a core idea that refers to livelihood as the "the means of securing a living" (Chambers and Conway 1992). Ellis (1998) provides a broad perspective on livelihood noting that "livelihood is more than just income" and that "a livelihood also includes access to, and benefits derived from, social and public services provided by the state" (4). "Livelihoods" can be thought of either as static, a snapshot in time, or as a process, where change will strengthen or weaken households over time, but not always in a linear fashion. The concern of this study is investigating whether or not the *diversification* of livelihoods, what Ellis (1998) defines as "the process

by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living", has occurred among study participants. In this respect, livelihoods in this study are defined as the composite of multiple processes operating through time rather than as snapshots in time. Ellis clarifies by noting that "livelihood diversification is not synonymous with income diversification", the latter referring to transfers of cash or credit whilst the former may encompass non-income transfers, for instance, access to a free clinic. May (1999) identifies eight "livelihood activities" particularly relevant to this study:

1. Agriculture - in any form
2. Small and Micro Enterprise - for South Africa, the "spaza" shop and "hawking" are most important
3. Wage Labor- often cited as the single most important source of income
4. Claiming Against the State - primarily pensions
5. Claiming Against Household and Community Members - remittances constitute the largest single claim made against relatives, but other forms can be evidenced
6. Unpaid Domestic labor - usually women's work
7. Illegitimate Activities - illegal or socially unacceptable activities
8. Non-Income Earning Activities- activities that do not generate direct income, but afford households greater livelihood flexibility, for example participation in civic organizations.

Chambers and Conway (1992) describe the "provisional anatomy" of household livelihood in four parts. First are the people and their livelihood capabilities, second are the activities, or what they do, third are the assets, tangible and intangible, and fourth are the gains or outputs, what they obtain from what they do (paraphrased from Chambers and Conway, 1992, 9).

Just as the definition of the term "livelihood" is contested, so is the definition of "household", the unit of analysis for this study. Guyer and Peters (1987) describe the household:

> The household is of variable structure; is both outcome and channel of broader social processes, and is the site of separable, often competing, interests, rights and responsibilities. It is as much a 'segmented' unit as are labor markets segmented by gender, age, clan, ethnicity and so on. Moreover the ideological construction of the household, the range of cultural meanings attributed to domestic units, conjugal and age relation and residential patterns are also critical to a fuller understanding of the dynamics of production and consumption that generate the diverse social units we call households (210-211).

Martin and Beittel (1987) position households in relation to labor markets, arguing that households are "constituted by a small group, the household is the unit that ensures the continued reproduction of labour through organizing the consumption of a collective fund of material goods - a unit therefore different from the family, co-resident dwelling groups, and kinship structures" (218).

With relevance to South Africa, May, *et.al.*, (1994) summarize concerns over the use of the term 'household':

> The boundaries of the household, the division of power within the household, and the division of labour within the household, and the dynamic nature of households are all issues about which reductionism [sic] assumptions have been made, and this confusion of the nature of the household has led to misleading conclusions regarding vulnerability in rural areas. As an example, the popular use of the household as the standard unit of analysis in surveys has lead to an unwarranted attention on female headed households, being a readily identifiable means of introducing gender into analysis. However, this distracts attention away from the circumstances of the majority of women in rural areas who live in households in which a male is the *de jure* head. Moreover, while the orthodox notion of the household assumes a household structure that is applied consistently in all places and at all times, empirical studies would

suggest otherwise and the structure and dynamics of households and intra and extra household capabilities have been found to be more diverse and complex (8).

May, *et.al.* argue that the household is better defined in three parts, "the boundaries of the household, the division of power within the household, and the division of labor within the household" (1994, 8). This alternative definition of the household is useful in a South African context, with family units being torn apart historically due to labour migration and recently due to urbanization.

Several authors have differentiated households, primarily by class, into broad categories. Carter and May (1999) have divided households by livelihood type into eight classes, namely:

1. Marginalized
2. Welfare Dependent
3. Remittance Dependent
4. Secondary Wage Dependent
5. Primary Wage Dependent
6. Mixed Income with Secondary Wages
7. Mixed Income with Primary Wages
8. Entrepreneurial

They describe marginalized households as those with very little actual income and no cash transfers. Welfare dependent households are those that rely on some form of transfer from the state or welfare organizations. In South Africa this includes old age pensions. Remittance dependent households, common in South Africa, are those that rely on the money sent back from a relative with employment elsewhere. Secondary and primary wage dependent households are those that rely on a family member's informal or formal wage, respectively.

Households that combine several livelihood strategies but are dependent on either informal or formal wages are characterized as mixed income and are differentiated by the type of employment. Finally, entrepreneurial households are that excel due to agricultural production and/or business. (Carter and May 1999). Households in the latter categories tend to be more prosperous.

2.2.2 *Gender*

What is the contribution of gender to a project on livelihoods and land use change in rural South Africa? Ngqaleni and Makhura (1996) illustrate a very basic and relevant point. They note that women perform fully seventy percent of the labor on small-scale farms in the Northern Province. Second, the phenomenon of male out-migration to the mines of northwest South Africa is perhaps most pronounced in the Northern Province, leaving women to tend farms and maintain the 'rural' livelihood. Third, at a more theoretical, and potentially more useful level, the conceptualization of gender and the household is strongly challenged in rural South Africa. Households, particularly those termed "female-headed" do not always match the theoretical expectations of even the most careful scholars on rural livelihoods and gender. Most importantly, however, this study explorer and uncovers key differences among and between women and men. While caution is exercised in the construction of the household, the relevance of the broader gender literature to this study is

reflected through the "gender and development" and post-modern feminist approaches that focus on difference.

Not only have studies of gender moved from women's role to a focus on gender relations (Joekes, 1996; Razavi and Miller, 1995), but feminist writers are also reconceptualizing the household as a relevant framework for assessing such relationships. Households are largely constructs of economic theory, often overlooking the relations that individuals have with other individuals, actors and institutions in society, and with nature. All too often households are constructs of convenience. While rural studies have long acknowledged women and their contribution to and in the household, the notion of *the household* in relation to gender as the ideal unit of analysis is problematic on another level. Peters recognizes several key problems with the use of the household, particularly the "female headed household". Though useful in dis-aggregating the household, the notion of "female-headed households" fails to "take into account the significant differences between, for example, male-headed households and female-headed households or between small male farmers and small female farmers" (Peters, 1995,95).

Further, the notion of female headed household blurs the *similarities* between these categories. Peters notes three major problems with the use of the term 'female-headed household' First, female-headed is often equated with impoverished. Second, household structure is not the only consideration when

examining gender relations, and third, gender relations and relations with actors and institutions outside of the household are obscured.

Gendered analysis of the household, thus, represents an attempt both to challenge conventional notions of the household as one unit and to reexamine the perceived notions of 'female-headed households' as a category of household. This understanding is particularly potent in rural South Africa where households have typically centered on women, but where gender relations that influence livelihoods extend well beyond the boundaries of the household.

Thinking on women and gender has shifted through several conceptualizations in the past decades (Joekes, *et.al*, 1996; Razavi and Miller, 1995). The role of gender in development shifted away from the early conceptualization of women's roles in the household and society to the incorporation of women in the development process, or WID. Advocates of a WID approach argued the bringing women into the development process would necessarily improve both the process and women's lives. An alternative approach, gender and development (GAD), maintains that simply incorporating women into development is not sufficient. Rather, an examination of gender relations is critical in understanding the dialectic between gender, not just women, and development. The GAD approach emphasizes investigation into the differences between and among both men and women. Young writes:

> A focus on women alone was inadequate to understand the opportunities for women for agency or change; that women are not a homogenous category but are divided by class, colour, and creed; that any analysis or social organization and social process has to take into account the structure and dynamic of gender relations; that the totality of women's and men's lives has to be the focus of analysis, not merely their productive, or their reproduction activities that women are not passive, nor marginal, but active subjects of social processes (Young, 1993, p.134).

Young further notes that the sexual division of labor is important as it "constructs women in relation to men – as their inferiors, their chattels, their helpmates, or their equals" (Young, 1993, p.141). The sexual division of labor "is a critical element in maintaining and/or recreating gender inequality" (p.141) and must be done away with.

The concepts of "gender and development" and "post-modern feminism" deconstruct the notion of "women" as a homogenous unit. Moser outlines the basic conceptual shift away from a "women in development" approach to a "gender and development" approach:

> Approaches to issues relating to women in developing countries became concerned with the manner in which gender and concomitant relationships were socially constructed. The focus on gender rather than women makes it critical to look not only at the category 'women' – since that is only half the story- but at women in relation to men, and the way in which relations between these categories are socially constructed. Men and women play different roles in society with their gender differences shaped by ideological, historical, religious, ethnic, economic and cultural determinants. These roles show similarities and differences between other social categories such as class, race, ethnicity, and so on. Since the way that are socially constructed is always temporally and spatially specific, gender divisions cannot be read off on checklists. Social categories, therefore, differentiate the experience of inequality and subordination within societies (Moser, 1993, p.3).

Moser further differentiates between the WID and GAD approach noting that the WID assumes the development process would be facilitated by simply incorporating women while the GAD approach argues for an examination of gender relations in development.

Jackson illustrates differentiation among women regarding environmental degradation noting:

> Women as a group do not experience environmental degradation in a uniform manner - these effects are mediated by the livelihood system. Some women may have remittances from migrant males, or more diverse livelihoods, or assets that may be liquidated, or kin0based entitlements which ameliorate the effects of environmental degradation (Jackson, 1993, p.1949).

In addition to the community level, differences exist between women at the household scale. Jackson argues that the relations between mothers and daughters, junior and senior wives exacerbate the differences already present, such as class (Jackson, 1993,p.1949). Further, she explains how gender relations and differences play out across environmental knowledges, property relations, space, and intrahousehold dynamics.

Empirical examples of the importance of examining differences among and between men and women abound. Sylvester (1995)identified differences among women in a rural producer's group in Zimbabwe, while Thomas-Slayter identified cleavages among women in a Kenyan community dependent on a local natural resource.

A post-modernist feminist approach to the study of gender and gender relations, however, calls into question some of the central tenants of a GAD approach. Marchand and Parpart (1995) critique GAD arguing that it is rarely incorporated into development planning and continues to characterize women as vulnerable (p.15) . In addition, a GAD approach essentializes women. They note that "gender does not constitute a super-ordinate category, but takes precedence only within certain situations" (Marchand and Parpart, 1995, p.173).

Finally, central to this study is the feminist political ecology approach to the study of gender. A feminist political ecology approach, writes Rocheleau:

> Begins with the concern of the political ecologists who emphasize decision-making processes and the social, political, and economic context that shapes environmental policies and practices...Feminist political ecology treats gender as a critical variable in shaping resource access and control, interacting with class, caste, race, culture, and ethnicity to shape the processes of ecological change, the struggle of men and women to sustain ecologically viable livelihoods, and the prospects of any community for 'sustainable development' (Rocheleau, 1996, 4).

Rocheleau highlights three important areas of investigation within the framework, particularly gendered knowledge, gendered environmental rights and responsibilities, and gendered environmental politics and grassroots activism. Gender is included in the tapestry of forces that shape decisions across scale, taking political ecology into feminist political ecology.

The literature on gender difference is particularly important to this study where class, ethnicity, and access to resources have all been factors that have long differentiated rural South Africans, including women. Access and control

over resources, livelihood systems, and food security are not issues that can be dichotomized between men and women in rural South Africa. The impact of differential development, apartheid, and the creation and destruction of "traditional" cultural practices and habits are forces that have led to pronounced cleavages among all groups, not just gender groups, in South Africa. The examination of theses differences will provided clearer insight into the impact of the land reform projects on gender relations.

2.2.3 *Research Heritage*

As noted above, agriculture is not equivalent to livelihoods, but it *is* important to the livelihood strategies of people in rural South Africa. As in much of the rest of rural Africa, livelihood strategies no longer depend solely on agriculture as the main source of income. While agriculture remains important, it can not stand alone in an analysis of rural livelihoods. Baber (1996) in two case studies of the Northern Province showed the significance of remittances, non-farm activity, and pensions to the livelihoods of households. While agriculture remained an important source of income (in fact, the most important in one study), other activities were essential to household survival.

The literature on rural livelihoods consistently recognizes the importance of extra-agricultural sources of income (Bernstein, *et al.* 1992; Bernstein 1994; Reardon 1997; Lipton 1996; Lipton 1993; Chopak 1991; Davies 1993; Gabre-Madhin and Reardon 1989; Haggblade 1989; VanZyl, *et al.* 1991). Non-farm

income in this study is defined as " income from local non-farm wage employment, local non-farm self employment, and migration income" (Reardon 1997, 4). Reardon includes migration income as a component of off-farm income, however, several other authors exclude migration income, preferring to analyze it separately (Baber 1996; May 1996). Remittances from labor migration are essential to livelihoods in the Northern Province (Baber 1996; de Villiers 1995). Lemon (1987; 1995) describes the structural factors that led to the high level of dependence on migration for income, primarily the forced segregation into homelands. Baber (1996) shows the importance of remittances to household livelihoods in the Northern Province. The former Lebowa homeland was established primarily as a labor reserve and "dumping" ground for South Africa's industrialized northwest (Smith 1990).

Table 1 shows the distribution of livelihood activities in the rural areas of South Africa. May points out that, historically, poverty in South Africa stemmed from an "erosion of the asset base" due to the forced Bantustanization of the population, the "impact of a disabling state", referring to the apartheid government, and the "direct impact of policies that incorporated gender and racial discrimination" (May 1999, 12).

Table 1 : Livelihood Activities in Rural South Africa

Activity	% Households Engaged
Agricultural Production	36.4
Small and Micro- Enterprises	10.4
Wage Labour in the Primary	22.1
Age Labour in the Secondary	37.4
Claims Against Household	39.0
Claims Against the State	32.4

Source: May, 1999

2.2.4 *Discussion*

The literature on livelihoods has evoked several themes pertinent to this study. First, the review of the contested nature of the definition of 'livelihood' and 'household' has produced a clearer understanding of these terms and has addressed the issue of how they will be used in this study. Lateral confusion with food security, coping mechanisms, and other terms has been avoided, thus narrowing the scope and allowing for more focus on the topic of livelihood. The "household" as a unit of analysis and conceptual construct has been reviewed with attention paid to gender and households. The introduction of gender into the discussion on households showed the fractured nature of the construct. In a society such as South Africa, where tradition has been invented and change is constant, challenging the assumptions on household typology, especially with relation to gender, will help to avoid overgeneralizations and misinterpretations. Finally, deconstructing the concepts in a South African framework (evidence May) and understanding the dynamics of both livelihood and household will

help provide a strong foundation for analysis of data collected *about* livelihoods *at* the household unit in rural South Africa.

2.3 Land Use and Cover Change

2.3.1 *Research Heritage*

The conceptualization of human relationships with land is a long held tradition in geography (Sauer 1925; Barrows 1923). Recently, Blaike and Brookfield (1987) and Peet and Watts (1996) have widened perceptions of this relationship by challenging scientists to understand social meanings behind land and the environment. Land relationships are not only limited to "use" and "management", but also to a series of complex interactions among and between actors and institutions. Evidence of these processes is abundant (Liverman 1990; Olson 1990; Moore 1993; Neocosmos 1993; Vogel 1993; Levin and Weiner 1997). Recognition of land use change as a fundamental element of global change studies has prompted calls for a greater understanding of impacts that humans induce on their environments (Ojima, *et al.* 1994; Houghton 1994; Turner, *et al.* 1993, Meyer and Turner 1994).

The relationship between socio-economic drivers and resultant land use change, including positive and negative feedback needs close examination. The dynamics of scale and the relationship between socio-economic drivers has been poorly understood and only vaguely conceptualized, although much progress

has been made in recent years (Ojima, *et al.* 1994; Turner, *et al.* 1993; Skole, *et al.* 1994; Olson 1990; Liverman 1990; Showers 1994; Snyder 1996).

2.3.2 *Theories on Land Use*

While excellent at providing descriptive detail of land use and cover change and identifying broad driving forces, global change studies have generally failed to provide a mechanism for the study of the interaction of people, institutions, and other elements central to an analysis of both livelihoods and land use change. Complementing land use and cover change/ global change studies, political ecology provides a conceptual framework and the mechanisms of analysis needed to critically evaluate the intersection of livelihoods and land use change in a complex setting embedded with issues of gender, class, and power, such as rural South Africa.

Political ecologists are particularly adept at forming understandings of the structures that influence the relationship between people and land, especially in terms of scale, history, the state, and local social relations of production (Bassett 1988). Blaike (1994), Blaike and Brookfield (1987), Watts (1983), and Campbell (1998; 1990) describe political ecology as a framework proficient at dealing with the many social, political, economic, and environmental forces that land users must face. Not only must institutions, such as the state, be forefront in any explanation, but scale must also be examined. The state is an institution with

strong influence from the international to local scales and it impacts local processes in a variety of ways (Blaike 1994).

However, political ecologists have provided less than adequate explanations of the more contextual issues such as gendered space (Rocheleau 1996), perceptions of the environment, and cultural symbolism. Analyses based on gender (Rocheleau 1996) and the notion of the social construction of nature (Escobar 1996) provide a more complete understanding of the interaction between humans and the environment, and provide a much needed contextual aspect to more conventional political ecology analyses. Ecology itself is changing, incorporating chaos and disequilibria, and political ecologists, particularly geographers, can benefit by incorporating these changes (Zimmerer 1994).

Political ecologists also tend to fail to operate beyond specific case studies. Few attempts have been made to present a *global* perspective within the political ecology framework. The global scale is represented as an input or output factor; rarely are findings generalized in such a way that a global political ecology could be constructed. Although scale is considered core to political ecologists (Campbell 1998), the vast majority of case studies operate at the household or community level. Fewer studies integrate regional analysis beyond a spatially small area, and even fewer attempt to paint a global picture. The global scale simply becomes a feedback loop in the system.

This broad body of theory shapes and informs this study by providing conceptual categories for operationalizing land use change and livelihood in

rural South Africa. I will draw on these theories and broad bodies of work to elicit informed conclusions on the processes of land use change and their relationships to livelihood systems.

2.3.3 *Scale*

Scale in the study of land use and land cover change is a salient, yet unresolved issue. A political ecology approach could be useful if strong relationships between global and local processes were readily manifest. One of the central difficulties in addressing scale in land use and cover change analysis is the use of data from different scales. Political ecology tends not to project empirical evidence from case studies to the global scale due to incompatible research design across case studies.

To date, a *global* political ecology, one in which an attempt is made to aggregate data collected at multiple local sites into an overarching theory or model of land use change, has not materialized. To be sure, global change studies have not progressed much further either. Proximate variables, such as population, have been used to attempt to theorize and model land use change at the global scale, however, the data are just as inconsistent and refutable as would be an attempt by political ecologists to aggregate disparate case study data. Meyer and Turner (1994) argue:

> Though a global view is required for some purposes, a globally aggregate one is insufficient for answering many pressing questions. The net worldwide trajectories of land-cover change area rarely duplicated in any region or locality. Consequently, explanations, forecasts, and prescriptions developed only from global aggregate data area likely to be worse than useless when applied in sub-global units. Nor can adequate global projections be developed from global aggregate data alone because global tools represent aggregations of quite dissimilar world regions. (1994, 7)

While discounting the global approach due to a lack of reproducibility in regional and local scales, the authors point out the problems with the local and regional scale approach as it relates to land use and cover change studies:

> Yet the opposite extreme from the global aggregate approach, a plethora of micro-studies highly attentive to local context and singularity, is equally unsatisfactory given the needs and constraints of the global change research program. A large literature of small-area studies does exist, and it offers many insights into the complexities of nature-society interactions. Practical considerations, though, prohibit the separate study for global modeling purposes of every piece in the world's mosaic of environmental and socioeconomic conditions. Nor could the results, even if collected in a systematic and comparable way, necessarily be aggregated unproblematically for higher scale of analysis (1994, 7).

Lambin (1992), describing desertification in Burkina Faso, remarks that "an analysis of the environmental consequences of decision-making often requires a broadening of geographical scale" (1992, 5). The argument here is that upward linkages in scale cannot be overlooked when conducting specific case studies. Further, Lambin writes " an approach that employs a nested set of spatial scales has proven to be appropriate to understand the behavior of land managers responsible for desertification" (1992, 4). What all of the authors advocate is a goal rather than a reality. In reality, many studies tend to focus on one scale of

analysis with the other scales being inputs and outputs. This study will be no exception, however, as analysis at greater than the local/regional scale has not been attempted. I have purposefully investigated *regional* phenomenon in order to present a broader interpretation of land use change in the study region, but have refrained from drawing global implications for just the same reasons illustrated above.

2.3.4 *Examples and Case Studies*

Several themes resound in the literature on land use and cover change, whether the example is global or local. Both empirical examples and theoretical studies tend to focus on driving forces of change and scale issues. Further, most empirical studies rely on remote sensing to characterize the scope of change.

The driving forces of land use change at the global scale have received much attention in the literature. Population, affluence, and technology (PAT) as driving forces have been central in several arguments (Sage 1994; Grubler 1994; Bilsborrow and Okoth-Ogendo 1992; Heilig 1993; Meyer and Turner 1992) while others have examined institutions (Sanderson 1994) and culture (Rockwell 1994).

Bilsborrow and Okoth-Ogendo (1992) examine the link between population growth and land degradation in developing countries. They note three phases in the "responses of land-use practices to population growth" (38). Phase one includes tenurial changes, such as accommodation, fragmentation, and reclassification. An example of accommodation is the use of underutilized land,

fragmentation refers to dividing existing parcels into smaller parcels, and reclassification entails making land available "to permanent or traditional members of the community at the expense of other members" (39).

Adjustment in the second phase is affected through land extensification, using land previously outside the control of the community. Finally, Bilsborrow and Okoth-Ogendo argue that new technologies will be sought to accommodate increased population. The intensification of land use in response to increasing population is most closely associated with the work of Ester Boserup (1965; 1981).

Meyer and Turner (1992) address several issues relevant to the driving forces of land use and cover change at the global scale. They remark on three points. First, "the driving forces of change may vary with the type of change involved" (1992, 51). Simply put, this means change from forest to agriculture will not always be driven by the same forces driving change from wetlands to agriculture. Different types of change will have different driving forces. Second, they argue that " the same kind of land-cover change can have different sources in different areas even within particular world regions" (1992, 51). This reflects the problem of aggregation. Specific case studies within a world region may point to different forces of change, although the expectation might be that similar areas experience similar forces. Finally, they point out that " in the dynamics of underlying 'causes', no agreement exists on the level at which adequate explanation is achieved" (1992, 51). The problem of scale is unresolved.

Several studies describe land use and cover changes at a broad regional scale. Heiling (1997) identifies five factors driving land use change in China's East. Population increase, rural-to-urban migration, economic growth, changes in lifestyle, and changing "economic and political arrangements" will drive future change. Skole, *et.al.* (1994), examining deforestation in the Amazon region of Brazil, focus on population, but warn "simple relationships to population growth may not alone describe factors driving deforestation in the Amazon" (1994, 318). Further, they argue that "economic and institutional factors" driving agricultural expansion help explain deforestation.

While empirical evidence at the global scale is mired in debate over quality and compatibility (Turner and Meyer 1994), regional and local scale data on the driving forces of change become more specific and are easier to quantify. Because this study does not attempt to address land use and cover change from a global perspective, I will focus on the regional and local examples of driving forces.

Reid, *et.al.* (1999) highlight specific driving forces of change in an area of central Ethiopia plagued by trypanosomiosis. The authors found that a combination of local forces (the introduction of trypanosomiosis) and national forces (resettlement policy; land redistribution) shaped land use change. Lindblade, *et.al.* (1998) writing on southwestern Uganda indicate that the perception of change among farmers had led to a real change in land use patterns. Although the authors found that population increases had not

substantively affected increased pressure on land, the perception of population pressure had led them to reduce fallowing. This case study is particularly relevant to the dissertation as perceptional data lays the foundation for understanding the social forces most responsible for change.

In a case study of Iraqw farmers in north central Tanzania, Snyder (1996) identifies out-migration, soil fertility, pests, and the introduction of agro-forestry as forces of change, but focuses on the relationship between labor and forestry. She argues that "farmers in the Iraqw homeland are choosing to invest in less labor and capital-intensive agro-forestry practices rather than increasing their investment in food crop or cash crop production" (336).

Walker, *et.al.* (1996) in an Amazonian study at the household level found that the strongest driving forces of change "emerge on the basis of both domestic cycles and the exercise of social power by privileged groups" (76). The authors further note, " it is impossible to separate the ecological problem of deforestation from the social issues of land concentration, rural violence, and frontier development" (77). In a similar study, Scatena, *et.al.* (1996) discuss cropping and fallowing sequences as an important household and community driving force of change. These studies of specific social processes at the local scale relate human action to landscape change and are, therefore, useful to this study.

2.3.5 *Land Use Change in South Africa*

Land use and cover change in South Africa is neither unique nor more important than in other world regions. I will not try to set land use in South Africa as somehow special or different. I will argue, rather, that South Africa is representative of a *broad range of land use and cover changes.* I posit here that two types of land use and cover change are evident in the South African landscape. First is structured. Structure is that which constrains, such as through a legal system or societal norms (Giddens 1984). This represents known, readily identifiable and predictable changes manifest largely in land use plans and management documents. Timber plantations are the largest contingent of such change in the northeast South Africa. The scope and spatiality of such change is known in timber company documents, town and regional land use plans, etc. The second type of change, and the focus of this study, can be described as agentist change. Agency is the freedom individuals have to act upon their own will (Giddens 1984). This category represents less structured change- spurred by individuals and groups in society where outcomes are neither easily measured nor planned and often come into direct conflict with structured forms of land use.

Change in South Africa is neither exclusively structuralist or agentist. That the South African state (a structure) seeks to alter the landscape through land reform makes the country a good case study. The state as a force of change is

clear and can be evaluated and analyzed as a factor of total change. Institutions in South Africa, such as the Department of Land Affairs, seek to influence change (Department of Land Affairs 1997).

Rural households represent one of the largest contingents of agentist change. Decisions made at the household level do not always conform with structural directives, legal codes, or proclamations by local, regional, or national authorities. For instance, land invasions are a clear expression of an agent's desire to occupy land against the structural constraints of law and law enforcement. Household decisions, it will be shown in this study, do not always take into consideration guidance or instructions from structures in society.

Land use change in the Northern Province includes the transfer of "white" farms to Africans, occupation of land by Africans in formerly restricted areas, abandonment of land, state-sponsored land reform projects, change in the mix of crops, for instance from subsistence crops such as maize to commercial crops (Lipton, *et.al.* 1995). Land use patterns can also change as a result of decisions made by the chief. This situation occurs as a result of more "traditional" forms of tenure and political relationships (Cross and Haines 1988). In this study, two types of land use change will be examined- the transfer of former "white" farms to Africans and the changes in areas near the transferred lands.

2.4 Land Alienation and Reform in South Africa: Examples from the Literature

2.4.1 *Landlessness*

While the focus of this dissertation is on the dynamics between land use change and livelihood systems, a review of land issues in South Africa will lead to a greater understanding of how livelihoods and land use are affected by the rural-historical context. The current situation in rural areas is a direct and unambiguous result of the assault of the colonial and apartheid states on the land rights of Africans. Land use change in South Africa is not a spontaneous event, rather a long process of contestation between various individuals, groups, communities, and authorities. To understand the *process* of land use change, it is vital we understand the how the conditions of current land distribution were affected.

While land alienation in South Africa did not begin with the 1913 Native Lands Act, that act did codify previously disparate laws and statutes into an overarching and draconian system that facilitated African land dispossession. In reality, alienation had been occurring since the first colonial wars in the Cape. Africans faced dispossession on a large scale with the extension of the Cape Colony eastward into what is today the Eastern Cape province. Bundy (1988) maintains that a peasantry was created and destroyed in the process of nacient capital expansion. Once capital had penetrated the interior reaches of the then

colonies of the Cape and Natal, and later the Orange Free State and Transvaal, it set out to destroy the much more competitive and economically successful African peasantry.

In the late 19th and early 20th century, the concentration of power into the hands of the white minority and the process of consolidation of state authority into the rural areas gave rise to fears among white farmers over lack of labor. At that time, the range of agricultural activities open to Africans was considerably wider than after the enactment of the 1913 and 1936 land acts. Africans could engage in peasant agricultural production on land titled to themselves or on communal land, become a labor tenant, sharecrop, become a farm laborer, or occupy and farm state land. At this point, the definition of a "peasant" becomes rather important. The argument forwarded by Bundy that the peasantry had been destroyed by the time of the Second World War is central to land issues in the present. Krober and Redfield (in Bundy 1988) define peasants as:

1) involved in market activity
2) involved in politics beyond the village
3) involved in country-wide peasant network
4) representing a small version of the larger society

Shanin (cited in Bundy, 1988) rejects this culturally based definition and opts for a more power-based definition, remarking that in peasant societies:

1) the family farm is the basis of social organization
2) land husbandry is the main focus of the household and the main source of livelihood
3) a culture develops that appreciates small communities
4) peasants are oppressed by other social groups

In South Africa, even at the turn of the 20th century, it would be hard to find many rural inhabitants who would qualify for the label "peasant" by either of these definitions. In order to avoid a long theoretical debate, I will side with Bundy on the issue of definition. He advocates using parts of both definitions and borrows from other analyses writing:

> one arrives at a definition of peasant to typify Africans in the Cape (and South Africa generally) during the nineteenth century. An African peasant was a rural cultivator, enjoying access to a portion of land, the fruits of which he could dispose of as if he owned the land; he used his own labour and that of members of his family in agricultural or pastoral pursuits and sought through this to satisfy directly the consumption needs of his family; in addition he looked to the sale of a portion of what he raised to meet the demands (taxes, rent, and other fees) that arose from his involvement in an economic and political system beyond his community. Like peasants elsewhere he had recourse to a specific traditional culture...he was dominated economically, politically and culturally by outsiders in a wider society - involved in relations of coercion and obedience... the extent to which the state or its representatives could enforce these relations differed sharply from time to time and place to place (1988, 9).

From an economic standpoint alone, the life of South African peasants in the late 19th century was clearly unpleasant, however, it was to be looked upon as a golden age. For instance, in a district representative of the 'native reserves' the average purchases for an African family of six fell between 1875 and 1925 from £20 to £9 while the average sales for goods fell from £20 to £4 (Bundy 1988, p.223). This drop was precipitated by the near collapse of African agriculture as a result of anti-competitive regulations favoring white settler agriculture.

The two legal documents most responsible for land alienation in South Africa are the 1913 Natives Land Act and the 1936 Development Trust and Land

Act. The first act prohibited African occupation or ownership of land not scheduled as African. The act established reserves (four of which were to become "independent") based on ethnicity and constituted the only areas where Africans could legally obtain title to land. The 1936 Act scheduled additional lands to be added to the reserves and further extended the ability of the state to enforce the 1913 Act. A third act, the Native Administration Act of 1927, provided a strong enforcement mechanism – the ability to forcibly remove Africans from one place to another. Section 5 (1)(b) of the Act states:

> The Governor-General may whenever he deems it expedient in the general public interest, order the removal of any tribe or portion thereof or any Native from any place to any other place within the Union upon such conditions as he may determine: Provided that in the case of a tribe objecting to such removal, no such order shall be given unless a resolution approving of the removal has been adopted by both Houses of Parliament (Murray and O'Regan 1989, p.18).

The language granting "objecting tribes" the benefit of parliamentary review was altered in subsequent amendments. Planners needed only to consult Parliament beforehand. "Objecting tribes" had no voice in and little recourse to such actions. The Group Areas Act (1950) provided for stronger regulation of ethnic and racial groups, but its statutes were largely affected in urban areas. The bases for dispossession were firmly set in the 1913, 1927, and 1936 land acts.

The concrete expression of the various land laws was forced, and often, violent removals of Africans from their land. In many cases, this was ancestral land and in other cases it was land individuals and communities had 'purchased'

prior to the 1913 alienation. The timbre of the forced removals was sharpest from the early 1960s to the mid-1970s. The 1927 Bantu Administration Act, described above, gave the state sweeping powers of removal. Generally, the landlessness currently experienced by so many people is a result of the enforcement of that act.

Africans were either physically forced into homelands or homeland boundaries were redrawn to incorporate Africans into them, a process of forced nationalization. All land in South Africa was scheduled for specific racial groups. Where residents did not coincide with the ascribed racial-geographic classification, the state stepped in to 'correct' the situation. Of course, the 'correction' was always at the expense of Africans. The process of consolidation of the homelands (and later "independent" states) in the 1970s further aggravated the already acute problem of landlessness.

2.4.2 *Tenure*

Understanding both land use change and livelihood systems is dependent, in this context, on thorough review of the types and spatial manifestations of land tenure. The role of land tenure in land use change and livelihood systems is most pronounced in rural South Africa. The long historical process of disruption of African agriculture, settlement, and tenure by the settler state is well documented. (Cross 1988; Cross 1995; especially Bundy 1988; for the Northern Province Letsoalo 1987; Adams, *et.al.* 1999; Claassens 1999). This process was one

in which the primary objective was *not* to alienate Africans from their land for European settlement. The primary objective, Letsoalo (1987) demonstrates, was not land alienation rather:

> Only by understanding the evolving political economy can one decode what has happened to black landownership and the double-meaning of "land" (i.e. labour) reform in South Africa. Like all capitalist economies, South Africa's economy is dependent on the existence of a labour reservoir. The Black community could not perform this function as independent farmers (owning land) (41).

A series of statutes and laws governed - or more accurately created chaos in - tenure systems in the native reserves, which would later become the homelands. At a broad scale, the homelands themselves were established as "black areas" for specific racial groups by the Bantu Authorities Act (1951) and the Promotion of Bantu Self Government Act (1959). These two acts were further strengthened with the passing of the Homelands Constitution Act (1971) which gave sweeping powers to the then non- "independent" homeland authorities. These three acts gave control of agriculture and tenure to homeland governments all too inept in such matters. The Bantu Areas Land Act (1969) governed day-to-day management of land and tenure arrangements at small scales. This act is still significant due to the fact that at the time of writing post- apartheid South Africa has still not codified a new tenure system for the former homelands and many administrators still rely on the 1969 statue.

What, then, are the tenure systems that have played (and continue to play) such a key role in rural areas? Cross (1991), Groenewald (1998), and Letsoalo

(1987) describe the tenure systems in terms of ownership, rights of use, and access. Cross' typology of tenure includes communal, trust, quitrent, freehold, and leasehold (70). Letsoalo generalizes more and divides tenure into locations/ reserves, tribal bought land, private bought land, and trust land (63-65). Groenewald presents possible tenure arrangements, largely overlapping Cross and Letsoalo but puts forth several different options including collective and large scale private farms (113). Table two summarizes the main characteristics of each type.

Table 2: Summary of the Types of Tenure in Rural South Africa

Type	Rent Paid ?	Who Controls Land Use Decisions?	How Common	Level of Security	Distribution in Pre-1994 South Africa
Communal	No	Chief or Tribal Council	Very Common	High	KwaZulu, Ciskei, Transkei
Trust	Yes, to the state	Based on conditions laid down by the state	Common	Very low	Northern Tranvaal, Boputha-tswana
Quitrent	Yes, to the State	Based on conditions, but less restrictive than Trust Land	Rare	Moderate to low	Transkei and Ciskei only
Freehold	No	Individual	Very Rare	High	Through-out SA
Leasehold	Yes, to the lessee	Based on conditions set down by individual offering the lease; state	Common	Very Low	Through-out SA

after Cross 1991 and Letsoalo 1987.

The primary reason for the existence of confusing and often contradictory land tenure regimes was the extraction of surplus. Land in trust systems represented a large portion of total land allotted as "African"; this was no coincidence:

> the question of payment of Trust rent is a cause for great dissatisfaction in the homelands. It is considered unfair for two reasons. Firstly, what is termed Trust land is land that formerly belonged to Blacks before it was forcibly appropriated by the Whites. Secondly, it is estimated that if the rental money was payment towards the purchase of land, the Blacks would have already bought more than the area they now occupy... the rent money goes through the homeland institutions (magistrates) to the Trust (South African Government), and then back to the homeland revenues. This is the circular route money takes "to assist the development of that particular area" (Letsoalo 1987, p.66).

The spatial distribution of tenure regimes was highly disparate and continually changing under apartheid administrators. Keeping African land use systems in flux and uncertainty ensured landlessness and a large supply of labor.

Considering that all of the new nine provinces, save the Western Cape, include parts of the old homelands, current land administration has become highly fluid due to uncertainty over precise land rights and conflicting land tenure systems within the same province. This leads to a great deal of conflict and uncertainty in land use (Cross 1995). Individuals and communities are simply unwilling, given the abysmal track record of the state to provide tenure security, to undertake substantive improvements on land that has any question regarding ownership or use rights. Land rights currently are held in a state of limbo with the passage in 1996 of the Interim Protection of Informal Land Rights

Act. This act simply freezes in place existing tenure arrangements in the Republic as of 1996 and has caused considerable confusion among land administrators (Claassens 1999; Sibanda, 1999). The tenure systems frozen into place are overlapping, spatially chaotic, and often contradictory. Critics of the system set forth in the Interim Protection of Informal Land Rights Act, known as "confirmed rights" pointed out that the language was "vague and imprecise" and that not all rights associated with land were conveyed under this act (Claassens 1999). The system simply stated that any current rights to land could not be alienated from anyone without their consent. Because of the contradictory nature of tenure systems in apartheid South Africa, this left vast numbers of rural people in a much weaker position relative to their counterparts. Land rights are generally understood to include

- the right to occupy
- the right to use
- the right to bequeath to one's heirs
- the right to transact (lease or sell the right)
- the right to mortgage the land
- the right to exclude others (evict)
- the rights to benefits accruing from the land

(after Claassens 1999)

The revision of the system included a set of rights that were "conferred on people by a local process of confirmation or allocation" (Claassens, 1999) inclusive of the rights listed above. This new policy seeks to integrate the existing rights and the conferred rights in such a way as to maximize security without compromising fairness and democratic process (Sinbanda 1999; Makopi 1999).

Currently, land tenure in rural South Africa is only slightly less chaotic than under apartheid (McIntosh and Vaughan 1999). Until a coherent, comprehensive policy is codified rural development and transformation will be stymied.

2.4.3 *Land Reform Choices and Policy*

I will abstain from a comprehensive review of the voluminous literature that developed from the mid-1980s and peaked in 1993-95 regarding "land reform options". Now that policy has taken shape and clear directions have been mapped out (and have since shifted again) much of the "options" literature has fallen by the wayside. I will begin by sketching the broad outlines of the "land reform options" literature, but will avoid issues that have subsequently been rendered moot by either policy actions or current reality. Much of the literature was based on suppositions of how a democratic transition *might* take place, or how social policy *might* be formed, or how homelands *may or may not* be included in the new Republic. I can easily rule out literature based on suppositions that have not materialized or where reality has contradicted the author's main arguments.

International experience in land reform was employed in an effort to preclude policy makers in South Africa from the same mistakes repeated in Africa, Latin America, and East Asia. However, South Africa has a history unlike any of the areas that have undertaken land reform. Kenya and Zimbabwe have had similar experiences, yet did not suffer from a legal system of separation and

racial underdevelopment to the extent of South Africa. The crescendo of academic reference in the immediate pre-1994 era led to multifarious recommendations on "what to do". The plethora of literature focusing on land reform options in South Africa is overwhelming. Bernstein (1999) notes that so-called "reformed" apartheid-era academics felt certain that the market-driven policies that worked so well for white South Africa could be transformed into "dispossessed-friendly" policy. South Africa emerged from apartheid at the heyday of World Bank and IMF restructuring programs that emphasized "getting the markets right". International agricultural economists stressed the need for market driven reforms, culminating in the work *Agricultural Land Reform in South Africa.* This volume became the reformers' central policy platform. It is the brainchild of several agricultural economists and planners at the University of Pretoria and includes authors from the Development Bank of South Africa (the apartheid institution charged with "development" of the homelands). International experts poured into South Africa in 1993 and 1994 ready to tackle the challenge of land reform in South Africa. It is in this context that we must temper our analysis of land reform policy options. These are generally not homegrown options, nor do they represent options as perceived by the large majority of the African population. It would be difficult to say if these options even represent the African intellegencia in South Africa, as few of them have been consulted. Land reform options are being driven by white academics

in the same institutions that were largely responsible for agricultural and land policy development under apartheid.

Binswanger and Deininger (1996) map out the "different paths" to land reform in other parts of the world where land distribution was skewed toward large farms. They note that reform in landlord estates throughout Asia has led to more stable production systems but can lead to evictions of farm-workers or tenants. Collective farms fail to provide workers with incentives, degenerate into "wage-labor operated state farms", and tend to suffer from under-investment. The authors, however, point out the problems of delaying land reform, arguing that smallholder profitability is reduced (83) and that delayed reform has led to violence and militancy among peasants (84).

Drawing on examples from Kenya and Zimbabwe, Binswanger and Deininger note that reform in Zimbabwe was less successful. This was due to poor financing and limits on land subdivision, prohibition of non-farm activity, and the large size of farms, among other factors (89). Their suggestion for South Africa is an approach that emphasizes private ownership yet allows for flexible forms of communal tenure, redress of grievances, and the willing buyer - willing seller method of land redistribution (95-96).

Van den Brink, *et.al.* (1996) relate land reform more closely to rural livelihoods. They present models based on the different levels of beneficiaries, namely communities, farmworkers, and individuals. At the community level, common property models reflect a community's will and are broadly more

acceptable in areas where "tradition" holds fast. Irrigated garden plots can also be developed at the community level where small-scale use is more appropriate. Options for farm-workers range from improving existing work conditions and term of employment to a farm-worker common property model to production co-operatives and equity sharing schemes. Individuals could benefit from irrigated market gardens programs, the out-grower (tenant) model, or commercial family farms based on freehold tenure.

To reduce the financial burden on the state, the authors recommend the following:

1. the sale of state land
2. a system where beneficiaries make co-payments
3. a reduction of the start up grant
4. that beneficiaries must contribute their labour to infrastructure improvement (sweat-equity)
5. pension buyouts
6. obtaining grants from donors
7. elimination of agricultural subsidies
8. issuing land reform bonds

van den Brink, *et.al.* 1996, p.447-450.

Describing guidelines for selecting beneficiaries, van Rooyen and Njobe-Mbuli (1996) suggest that access to farmland is "important although not a prime factor" in reducing poverty, farming does not always result in increased food production, land reform must address the needs of the poorest, and a broad approach must be undertaken (466). The selection of beneficiaries must take into account inequalities in ownership and access, how apartheid laws created

poverty, "the need to establish land use models which will ensure improved efficient and sustainable use" and "democratic (transparent and broad-based) participatory processes" (473). The disenfranchisement of people under apartheid, poverty and the degree of need, land productivity and sustainability, a participatory selection process, and reference to case studies should guide the criteria for selection of beneficiaries (474-476).

Land reform options that address farm-workers' needs include joint venture / participation schemes and resettlement programs (Ngqangweni and van Rooyen 1998). Joint venture / participation schemes involve "rearrangement of ownership to include farm-workers and thus include them in the main stream economy" (72). Table 3 summarizes the various approaches to joint venture / participation schemes.

Table 3 : Options in Land Reform

Type	Description	Advantages	Disadvantages
Equity Schemes	Workers buy into an existing operation or create new one	Workers manage; acquire equity	Resistance from previous owner; need for high level of support
Build, Operate and Transfer	Private sector builds, operates and eventually transfers a scheme to the public sector	Workers get extensive training; low start-up costs for the state	Untested; unwillingness of investors to relinquish assets
Lease and Buy Schemes	Workers lease land and equipment with option to buy	Financing provided by the state	Workers may not be able to raise capital
Agri-Village	Encourage enterprises to acquire and develop land for its employees	Minimizes delivery costs; facilitates land ownership in high land cost areas	Enterprises tend toward hegemony over workers

after Ngqangweni and van Rooyen 1998, p72-74.

A successful program of land reform, Christiansen (1996) remarks, will emerge if the speed of implementation is fast, farm models are scrutinized closely for economic viability, if the program is politically acceptable and legitimate, the role of the public sector is clear and reduced, and if land reform is "part of a comprehensive program of economic reconstruction" (368).

The market-driven / market-assisted approach to land reform is not the only option, however. Berstein (1999) characterizes the main problem with the dominant land reform paradigm:

> as for the agrarian question, a few individuals charged by the ANC with formulating (or conjuring) land and agricultural policies were overwhelmed by representations, models, and prescriptions from a variety of quarters, South African and external. The former include *verligte* (or hastily 'born again') elements of organized agriculture, agribusiness and the Development Bank of Southern Africa, DBSA (established to direct 'homeland development', as part of the domestic 'reform' thrust of PW Botha's Total Strategy). External ideological skills, policy analysts and advice were supplied by the World Bank and other aid agencies, the planeloads of consultants attached to them, and the rest of the internationally mobile usual suspects. (5)

Bernstein demonstrates the need to alleviate rural poverty *and* "reform the modes of domination that reproduce the political exclusion of rural 'subjects' "(23). The market driven approach treats rural people as subjects to be studied and transformed by the dominant (Western, neo-liberal) agricultural philosophy into "productive and efficient" small farmers. He warms that "black bourgeoisie land acquisition seeks to exploit ostensibly 'customary' channels of land allocation and/or opportunities afforded by government land reform policies..." (24). The dominant agricultural reform literature mentions nothing of such class struggle for land.

Land reform policy in South Africa has been "captured". Levin and Weiner (1997) expand:

> the ANC-led Government of National Unity put its faith in comprehensive land reform *and* a market-led land reform strategy...this signifies a triumph of neo-liberalism in the land debate, and the privileging of the market as the central mechanism for land redistribution. The political space for the consolidation of neo-liberal thinking around land reform is due in part to an urban bias within the democratic left which contributed to a conception of linear proletarianization of rural Blacks (7).

Examining current land policy that privileges rural elite and newly rural "peasants" validates this statement. The "Commercial Farmer Programme" is just the latest in a series of revisions to the original goals of land reform. The first indication of the composition of an ANC led land reform strategy dates as far back as 1955 with the Freedom Charter. That document expressed the need for land reform at the most basic and fundamental level, in the redistribution of land:

> Restrictions of land ownership on a racial basis shall be ended, and all the land re-divided amongst those who work to banish famine and land hunger; the state shall help the peasants with implements, seed, tractors and dams to save the soil and assist the tillers...People shall not be robbed of their cattle, and forced labour and farm prisons shall be abolished (ANC 1955).

With the end of apartheid in 1994, concrete steps were taken to reverse the lop-sided land distribution of the past and to accelerate real rural development. The first policy statement on land (other than to repeal apartheid era codes and statutes) was the Restitution of Land Rights Act (22 of 1994). This act specifically set out to "provide for the restitution of rights in land in respect of which persons or communities were dispossessed under or for the purpose of furthering the objects of any racially based discriminatory law" (Republic of South Africa 1994, p.3). The Development Facilitation Act (67 of 1995) provided the terms for land development, especially housing.

The first comprehensive land statement emerged in 1996 with the publication of the *Green Paper on South African Land Policy*, and was revised in

1997 to become the *White Paper on South African Land Policy*. Enshrined in these two documents were the principles of land reform. The White Paper identifies areas that needed address, including:

1. The injustices of racially-based land dispossession;
2. The inequitable distribution of land ownership;
3. The need for security of tenure for all;
4. The need for sustainable use of land;
5. The need for rapid release of land for development;
6. The need to record and register all rights in property; and
7. The need to administer public lands in an effective manner.

(Department of Land Affairs 1997, v)

Land reform issues were divided into three broad categories: land restitution issues, land redistribution issues, and land tenure reform issues. Provisions were made for a once-off R15000 grant with which individuals could purchase land "directly from willing sellers" (ix).

The next important piece of legislation for this study, was the Communal Property Associations Act (849 of 1996). This act allowed for the establishment of quasi-communal groups in order to purchase farm land under the willing buyer-willing seller program. It was recognized from the initial stages of planning that very few individuals would be able to purchase land with the once-off R15000 grant. The Communal Property Associations Act allowed individuals wishing to pool their resources to purchase white farmland a clear legal framework and protection of their rights. The act called for each Communal Property Association (CPA) to have a constitution that would, among other things:

- Be fair and inclusive
- Prohibit unfair termination of a member
- Prohibit discrimination
- Provide for regular meetings
- Ensure financial transparency and accountability

In early 2000, land policy shifted significantly under the Minister of Agriculture and Land Affairs Minister Toko Didiza. Individuals wishing to obtain land now must match the government grants:

> Following the ministerial review process, the current grant system will continue but is to be revised to enhance access to land. Three redistribution windows are to be created, ranging from small, to medium to large projects. The windows will refer to the total project cost and not to the size of the farming enterprise or the type of farmer. Allocation of the government grant will be based on the grant amount per total project cost per window and not on grant amount per beneficiary per window. Government's contribution to each window is set at about 70%, 40% and 20% in the small, medium and large sized projects respectively. Eligible projects for grant financing are commonage, communal and commercial farming.
>
> The current settlement/land acquisition grant (SLAG) is to be replaced by a land reform grant, with specific categories (relating to the purpose of the grant). For example, grants for residential settlement and the creation of a food safety net will be treated differently from grants aimed at establishing market-based agriculture. The livelihood and food safety net grant is aimed at the poor within communities who do not have land and cannot sustain themselves. The grant is intended to give them both land on which to live and food security.
>
> The new supply-led system will be piloted with a more pro-active approach to managing the allocation of land, coupled with the more strategic use of grants to support the Government's integrated rural development strategy. The new programme is aimed at distributing at least 15% of farmland in the next five years. It envisages land redistribution as a mechanism to facilitate long-term structural change in agriculture. (DLA 1999, 2-3).

The focus has shifted to creating a black commercial farming class rather than righting historical wrongs and alleviating rural poverty. The shift will inevitably alienate the poorest of the poor from the land reform process.

Land restitution since 1994 has been extraordinarily slow and heavily criticized (Brown, *et.al.* 1998, p.1). The Department of Land Affairs 1998 Annual Quality of Life Report was undertaken to assess redistribution projects, however, suffered from flawed methods. For example, out of the total of 62 projects surveyed, only one was in the Northern Province and this one project represented only four households. Thus, one of South Africa's poorest provinces and the one with the direst need of redistribution was represented by four households. On the other extreme, KwaZulu-Natal and the Free State were represented by 56 and 55 households on 14 and 16 farms respectively (DLA 1999, p.5). This imbalance in sample size underlines the generally haphazard approach of the DLA to redistribution. One of the most stunning admissions in the report is the lack of action on actual redistribution versus needs up to 1998. The estimated percentage of households who need access to land is placed at 67.7% for the entire country and 72.4% for the Northern Province, yet only 0.2% of households have received land nationally. The situation in the Northern Province is worse with only 0.1% of households in need having received land. In no province is the ratio of need to delivery rate higher than 0.7% (DLA 1999, p.9). These numbers are even more shocking when examined in the light of the *original* goals of land reform in South Africa. According to the DLA:

> The initial land reform target for the redistribution programme was to transfer 30% of South Africa's 99.07 million hectare farmland, between 1994 and 1999, which amounts to 29.72 million hectare. After three year of operation, this is what has been achieved: about 200,000 hectares of land have been transferred to about 20,000 households, which is 0.6% of the total farmland demanded by households and 0.6% of the target set. This means that only 0.2% of the total number of households who demand land have benefited under this programme. This indicates that the programme is not performing as well as it was expected, and it is doubtful that the target will be met...It is difficult to comment on the progress of land restitution... however, at face value this process seems to be too slow (DLA 1998, p.10).

In this same document, DLA defensiveness is clear:

> Many do not seem to appreciate the progress of the land reform programme. As far as the numbers of households resettled or gaining secure tenure are concerned, significant progress has been made in terms of setting institutional structures, establishing planning procedures, and learning to identify bottlenecks at different levels (DLA 1998, p.9).

Thus, tasks that should have been completed in the first six months of the land reform process have taken six years. The desperately slow process in South Africa mirrors that in Zimbabwe, and as events in early 2000 have shown, failure to deliver land can have dire social consequences.

The 1999 Quality of Life Report reflects the same slow process:

Summary of settled restitution claims

Land restoration

Households receiving land	**11 194**
Land cost	**R87,756,559**
Restoration order by LCC (hectares)	**173 805**
Restoration approval - s42D(hectares)	**90 063**

Final compensation

Households receiving compensation	**973**
Financial compensation order (LCC)	**R0,0**
Financial Compensation approval (s42D)	**R32,639,639.64**

Restitution totals

Claims settled as at 18 Feb 2000	**1 651**
Total claimant households	**12 167**
Total restitution beneficiaries	**72 406**
Total restitution award cost	**R120,396,198,64**

The process in the Northern Province is even slower:

Northern Province

Land restoration

Households receiving land	2 570
Land cost	R0,00
Restoration order by LCC (hectares)	25 000
Restoration approval s42D (hectares)	0

Financial compensation

Households receiving compensation	1
Financial compensation order (LCC)	R0,00
Financial compensation approval (s42D)	R174,157.00

Restitution total

Claims settled as at 18 Feb 2000	2
Total claimant households	2 571
Total restitution beneficiaries	15 940
Total restitution award cost	**R174,157.00**

From a beneficiary perspective, Zimmerman (2000) explored barriers to participation of the poor in the land reform program. He puts forward five reasons explaining why the poor are less likely to participate in land reform than could be expected, namely: high up-front costs, the tendency of the poor to be risk averse, a lack of human capital, a lack of time, and the large distances over which people would have to move to participate in land reform.

2.4.4 The Communal Property Association Model

The Communal Property Association was a statutory model of land reform delivery in the Department of Land Affairs from 1996 until 2000. CPAs were established in areas targeted by central authorities as having a land imbalance. Land for transfer is selected from willing sellers (usually white) that is physically near historically dispossessed black communities. According to the members of CPAs, local government officials informed them of projects in their area. These officials would post advertisements in rural areas and townships offering to facilitate the transfer of farmland. To become a member of the CPA, interested parties were required to contribute their R15,000 state social grant to a pool of money that would be used to purchase the (white) farm. The number of members was determined by how much money it took to purchase the target farm. Several CPAs in the Northern Province have over 300 members while some have fewer than 40. This reflects different costs involved in acquiring the land.

CPAs are run democratically with each member having a vote in the organization. An executive committee consisting of a chairperson, vice-chairperson, secretary, and treasurer conducts daily tasks of administration. This body is responsible for making decisions regarding the operation of the farm, finances, and communicating to members.

The constitutions of the CPAs forbid members from residing on the transferred land. The intention of transferring the land is for agricultural production rather than residential dwelling. The government stipulates the amount of start-up funding each CPA is allocated. In practice, some CPAs are better funded than others. There is no overall produce or cattle marketing association for the CPAs in a given region or province and they are largely at their own devices to raise, harvest, and sell any produce or livestock. In practice, many of the CPAs are reliant on their relationship with local government for resources. Direct transfer from the government is a common method of capital injection. No CPA in the study area had relationships with the private sector either to obtain capital or supply produce.

Membership participation is based on cooperative production. Each member, in theory, is expected to contribute to the association and collect the rewards in the end. Production was intended to be self-supporting after the government covered the initial capital costs. The investment by the government was intended to jump-start the first year's production. The profits would be reinvested to support future production. Government's role was intended to be

limited to "getting the CPAs off the ground". They were envisioned to be self supported by the second or third year (M. Labuschagne, 1999).

Very few of the original intentions for the CPAs have materialized. Members do not always participate in communal production, the associations have not been able to sustain production at all, therefore, cannot reinvest. They are reliant on government capital injections and have formed few partnerships with the private sector, either for provision of supplies or as an outlet for goods. In fact, of the CPAs in this study, only one was able to sell agricultural produce and only one was able to sell livestock. Regarding the Communal Property Associations, the Department of Land Affairs has acknowledged the poor state of affairs:

> Communal property associations are now just more than three years old. As an institutional arrangement, this form of association has seen both success and failure. On the one hand, the communal property associations have established a legal mechanism which could be used by groups to jointly acquire and manage land. The restitution, redistribution and tenure programmes have relied heavily upon these institutions to facilitate land transfer. In the past three years, more than 150 associations have been registered with the bulk registered in 1999. Most of these associations were registered as a result of the redistribution programme with restitution trailing closely.
>
> However, a close analysis of communal property associations has revealed that many of these associations have become dormant and ineffective. Some reasons cited for this are the lack of post-transfer support and a lack of training of land reform beneficiaries. This might necessitate an urgent review of the administrative and institutional processes following the establishment of these institutions. (DLA 1999, p.34-35).

The Communal Property Association Program has been widely criticised for not turning dispossessed rural Africans into instant peasants. Little mention

has been made that the CPA programme has failed to meet other social needs of land reform. The new policy directions of the DLA indicate that the former mantra of distribution to alleviate historical injustices and reduce rural poverty have succumbed to the same neo-liberal pressures that dominated the pre-1994 debate on land reform. The 'profit or perish' mentality of market advocates has been applied to the Communal Property Associations, the last institution able to deliver meaningful reform to the rural poor. The CPA program has also succumbed to neo-liberal reform policy. Meaningful rural transformation is beginning to fade into memory, just six years after the end of apartheid.

2.5 The Impact of Change through Time: Examples from the Literatures on Resettlement, State Farms, and Agricultural Cooperatives

One fundamental question that arises from an examination of the design of this study is: Has enough time passed to assess the Communal Property Associations? An assessment early on in the project life would yield results indicative of a transition. People have not yet settled into their new livelihoods. Therefore, it is crucial to locate the CPAs both in the literature and with the field data to identify any indication that projects are still in transition.

2.5.1 *Resettlement and the CPAs*

Classifying CPAs as resettlement schemes is a misnomer. The members of CPAs in this study have *not* moved either voluntarily or involuntarily to participate in the projects. Resettlement has occurred in South Africa as a result of land reform largely in restitution cases, although resettlement did occur on a few CPAs. In this study only a handful of members (fewer than 30) of one CPA resettled themselves voluntarily to participate.

The resettlement literature is being discussed here as it comes closest to answering questions of time and change. The land reform literature largely ignores the impacts of a land reform event on either livelihoods or land use change. In order to analyze whether or not enough time has passed to substantively evaluate the CPA program, the resettlement literature must be drawn upon for empirical examples of the impact of change on livelihoods and land use. Clearly, more disruption will have occurred in the case of resettlement than CPA establishment, however, a transition baseline can be established to support or reject the analysis of the CPAs at the four to six year mark. Unfortunately the literature does not provide clear and concise answers, as Kinsey and Binswanger point out "there is no generally accepted methodological approach or theoretical basis for the analysis of resettlement scheme" (106).

Settlement schemes have a long and not always successful history. Resettlement is a widespread phenomenon with various causes and

consequences. While the size, scope, and type of resettlement varies from country to country, broad similarities can be found in the literature (Manshard and Morgan, 1988; Mbithi and Barnes, 1975; Chambers, 1969; Apthorpe, 1968; Hansen and Oliver-Smith, 1981). A typology of settlement schemes includes "administered official settlements, unauthorized or spontaneous settlement, and assisted spontaneous settlement (Kinsey and Binswanger, 1996, p.115-119). While the empirical evidence on resettlement is large, the scope is rather narrow. Studies of resettlement too often focus on the economic rather than social outcomes of resettlement:

> because the bulk of the literature comes from [empirical approaches], assessments of performance are weighted heavily by the disciplines in which researchers have been trained...evaluations in this category tend to present static descriptions and to gloss over processes and relationships. Unfortunately, the deficiency cannot be remedied by balancing conventional examinations with those drawn from the social consequences literature, since there is too little of the latter to serve as an effective counterbalance (Kinsey and Binswanger, 1996, p.107).

Colson (1971) was one of the first authors to investigate the social consequences of resettlement in her analysis of the Kariba Resettlement Scheme in Zimbabwe. She maintains that resettlement has direct, and often negative, social impacts. Among these she focuses particularly on socio-spatial organization, the process of recovery, and long-term effects. Salient here is that Colson provides insight into how rural livelihoods were altered, specifically due to the re-organization of labor, political instability, intra-household stresses and the consequences to women, and the uncertainty and volatility of income.

Oberai (1988) expands on the problems of resettlement. Consequences include "settler abandonment of land, lack of non-farm employment, the concentration of land into the hands of a few, social tensions, and ecological problems" (22-28). Further, the success or failure of resettlement is dependent on the extent to which these problems are addressed and mechanisms that are devised to cope in both the short and long- term.

2.5.2 *Lessons from Latin America*

Due to the fact that many shared conditions exist, such as a large settler community and highly unequal land distribution, case studies from Latin America provide useful insight into resettlement with implications for South Africa. Both areas have experienced European settlement early in their histories; both experienced large-scale land alienation of the indigenous population; both attempted land reform after political reform.

Findley (1988) after Nelson (1973) argues that resettlement occurs in three phases. The first phase is the selection of the settlers, the second is the pioneer stage, and the third is consolidation. She explains:

> In the first or selection phase, the potential colonist "selects" himself or is selected as a colonist, and then proceeds to select a plot. During the second or pioneer phase, the colonist clears his land and begins cultivating crops, usually subsistence food crops. After a few years, the colonist begins the third phase, which consists of colonization or commercialization (Findley,1988,p.279).

The author recommends three important elements for the successful consolidation of projects, namely sufficient land, capital, and labor. She argues that during the transition phase " [the pioneers] can not be expected to arrive and immediately commercialize" (290). [1]

Findley (1988) sets out the "structural conditions" that led to success in Latin American reform and resettlement programs:

1. Appropriate crops were selected, for which demand and marketing facilities existed.
2. The cooperative provided an effective organization to facilitate commercialization. In particular, it provided inputs in a timely fashion.
3. Credit to settlers was based on potential yields, which enabled settlers to shift from low-return food crops to high-return cash crops.
4. Settlers were a fairly homogenous group, drawn predominantly from nearby areas. This resulted in less dislocation and more continuity and cooperation between settlers.
5. The project stressed colonist leadership and did not demonstrate paternalism. (301).

She further notes constraints including "attempts to supplement incomes through off-farm work had led to significant decline in production and land of community organization had crippled the potential of the settlement to respond collectively to its problems" (302). Two complaints among the settlers in Findley's Latin American case study include the need for " improved access to transportation and credit" (306). In order to combat the structural constraints facing the settlers, Findley recommends:

1. improvements in the internal terms of trade
2. improvement in transport services
3. produced-oriented credit
4. adoption of mixed cropping systems
5. generation of off-farm employment [but not in the pioneer phase]; and
6. expanded health and education services (307).

Henriques (1988) reviewed Brazilian settlement schemes and comes to many of the same conclusions as Findley. Most notably she shows that "the implementation of a colonization policy has not significantly enhanced people's well being" (338) due to the fact that "credit and technical assistance did not reach more than one-third of the settlers". In the Andean highlands of Peru, Carpio (1988) found that several structural failures inhibited the progress of settlement schemes, specifically the lack of overall organization, credit, and marketing facilities.

2.5.3 The Issue of Time and Transition: How Long Does it Take to Get an Accurate Assessment of Change?

Given that the Communal Property Associations investigated in this study are less than seven years old, the issue of the time of analysis arises. Had the CPAs been in operation for twenty years I could easily argue that my findings represent trends, however, it is possible that I have identified processes symptomatic of transitions. If the findings represent transitions then they must be addressed as such.

Diaw (1990), in an assessment of resettlement in Ghana, notes that trends are set in the first years of resettlement and impact all future events:

> The period immediately following evacuation could be said to be the watershed in the lives of the resettlers...this formative period was going to mould the people's attitude to conditions in the new town. To be able to understand those attitudes would require some indicators as beacons for future assessment of trends, events, activities and behavioural patterns of the population (76).

Voh (1983) however, takes a more conservative approach to the issue of transition, noting that "it could be said that two years after the relocation, the people still have not re-established themselves" regarding resettlement in Kano State, Nigeria. Colson in her study of the resettlement of the Gwembe people in Zimbabwe and Zambia reports that the respondents themselves felt that the transition ended in 1962, five years after they were resettled and "when most Gwembe people agreed that the crisis had ended" (Colson, 1971, p.141). Koenig, writing on resettlement in Mali, argues that "people begin to settle in quickly" (8), suggesting people recover in the first two years, and often in the first year. One unanswered question in the resettlement literature is the length of time recovery takes and when transitions give way to trends. Most studies present a snapshot of a resettlement project. The project is judged at time A (usually one to five years after the establishment of the resettled town or village) with very little reflection on the phases of transition from the moment of transfer. The effects of the resettlement are mapped out, but not placed in time. Consequences are

viewed as short-term and long-term, but no timeline is established that marks progress and failure on a year-by-year basis over any length of time.

It must be noted here that resettlement occurs under dramatically different conditions from place to place. The degree of disruption must be factored into any analysis of recovery and transition. Involuntary, inefficient resettlements will yield longer, and possibly incomplete, transitions than will voluntary, efficient ones. In the context of this study, the CPA transition has been much less traumatic, as very few members have resettled themselves to participate in the program. The Department of Land Affairs never envisioned large-scale resettlement occurring as a result of the establishment of a CPA. In this respect, and given the evidence in the literature, an assessment of the CPA program at four to six years on can be justified. The literature suggests resettled people recover and establish more stable livelihood systems anywhere from one year after resettlement (Koenig) to five (Colson). Nelson (1973) argues that resettlement occurs in three stages, the pioneer stage (5-10 years) where resettled persons establish the "basic life support systems"; the consolidation stage (5-10 years) where community organizations are forms and more sophisticated social development takes place; and the growth stage (no specific time range) where socio-economic maturity is reached. These represent longer stages than found elsewhere in the literature. Kinsey and Binswanger (1996) remark that:

> resettlement projects judged to have been successful in one or more dimensions appear to have passed through a series of three to five year stages of evolution, during which settlers adjusted to their changed circumstances in ways that affected the performance and impact of the settlement project (108).

Bahrin illustrates an important point regarding level of income and time of transition from a case study of a Malaysian resettlement scheme:

> At the outset it must be pointed out that during the first few years after entry into the schemes average settlers' income is usually lower than they were receiving previously. This is because the settlers receive only a subsistence allowance of about Malaysian $100 per month during the pre-production stage of three to five years...after this stage, however, the average income increases with the period of residence in the scheme (Bahrin, 1988, p.111)

As the CPAs were much less dramatic transitions, and were facilitated initially by a capable program of support, I will show via the literature and data collected in this study that findings from the CPAs represented in this study are trends, although some symptoms of transition are still present and will be noted. The above literature investigates resettlement where former livelihoods are abandoned and new ones are adopted. As noted previously, this is not the case for the CPAs in this study. People maintained their livelihood systems; they were not forced to give up their former livelihoods to adopt new ones.

2.5.4 State Farms and Cooperatives: Lessons for the CPA Program

While the resettlement literature provided a sense of the time frame necessary to conduct an analysis of the Communal Property Associations, it was noted that the structure of the program was different from the assumptions

made in the literature regarding resettlement. In reality, CPAs more closely resemble state farms and agricultural cooperatives.

Gyllstrom (1991) citing the ILO describes cooperatives as:

> An association of persons who voluntarily joined together to achieve a common end through the formation of a democratically controlled organization, making equitable contributions to the capital required as accepting a fair share of the risks and benefits of the undertaking in which the members actively participate (Gyllstrom, 1991, p.3).

In theory, the Communal Property Associations closely resemble agricultural cooperatives. The history of cooperatives as models of agricultural production long precedes the CPA program. Under communist control, Eastern Europe and the Soviet Union relied heavily on the cooperative model in theory but rarely in actual practice. The modern idea of the cooperative in Africa dates from the colonial period, but became more pronounced at independence. Given that cooperatives have had a long and diverse history, some lessons can be elucidated that can inform the CPA program. Holman (1990) outlines some of the key aspects of cooperatives in the Third World, including the expectation that cooperatives would spur change and the major problems or criticisms of cooperatives. He puts cooperatives into perspective noting:

> Despite the somewhat diffuse conceptualization of cooperation, but strengthened by both the vision of peasant fatalism and by the planning euphoria that prevailed during the 1950s and 1960s, expectations about the roles and potentials of cooperatives as development instruments have been both varied and far-reaching. (Holman, 1990, 30).

These expectations have included beliefs that cooperatives would "increase agricultural production, extend the supply of credit and agricultural inputs, cater

for the poor and minimize social stratification, and establish 'cooperative awareness' among members" (Holman, 1990, p.31). These expectations were not fully met and criticisms arose, including the arguments that cooperatives:

- bring no structural change
- do not benefit the poor
- suffer from bad management
- are exhausted by government interference
  (Holman, 1990, p.33)

Okuneye (1985) sets out several indicators on which the effectiveness of cooperatives may be judged, including "viability over time, facilitation of the provision of services, promotion of egalitarianism, enhancement of agricultural earnings and lessening of dependence on foreign imports, and a cost-benefit analysis" (Okuneye, 1985, p.6-8). An additional indicator of effectiveness, as Gyllstrom notes, is that cooperatives in Kenya were considered dormant if they ceased to operate for two years (1991, p.98).

The case study literature portrays cooperatives as largely unsuccessful as well. Gyllstrom(1991) maintains that cotton cooperatives in Kenya are "too rudimentary to allow the expected levels of agricultural output" (p.271). As with South African CPAs, Kenyan cooperatives were "used by the state as an instrument for promoting agricultural and rural development (Gyllstrom, 1991, p.267). He notes that factors influencing projects include:

- Local environment
- Local population
- Quality of Infrastructure
- Level of member education
- Economic differentiation
  (Gyllstrom, 1991 p.100-104)

Further, the author argues that the performance of cooperatives rests on the availability of credit and supplies and the role of the state (Gyllstrom, 1991, p.175-212). Survival of Kenyan cooperatives was due in large part to "regional variations in the operational environment" (Gyllstrom, 1991, p.269). The author summarizes the situation among Kenyan cooperatives:

> In conclusion, the organizational structure devised for agricultural service cooperatives in Kenya displays fundamental weaknesses when exposed to the vagaries of the environment on which it essentially depends, i.e. the smallholder economy. It then becomes evident that the design rests on a number of implicit environments, such as the ease of interaction in geographical space, a certain size of operation, management skills, and stability. These in-built threshold requirements, imparted on societies and unions, can in most cases be met only partially, if at all. Hence in fundamental respects, they will condition the expected rationality and benefits of cooperatives. If accepting that the symbiosis with government institutions has favorably influenced their survival capacity, it is at the same time negatively affecting their performance and contributions to agricultural and rural development (Gyllstrom, 1991, 157).

Kimario (1992) noted similar circumstances effecting Tanzanian cooperatives. Marketing cooperatives were largely unsuccessful due to both internal and external problems. The internal problems included "lack of support from members, inefficient [executive] committee members, inefficient management, and the inability to control production losses" (Kimario, 1992, 43-

47). External factors effecting the performance of Tanzanian cooperatives involved the government and the party (TANU) and included:

- Overly ambitious plans
- Inadequate personnel
- Inadequate provision of transport
- Inefficient administration
- Low moral among the administrative staff
- Miscommunication
  (Kimario, 1992, 48-52)

These findings from Tanzania were replicated in Adeyeye's study of group farming in Nigeria. He noted that cooperative farming in Oyo state lacked effective internal organization and membership participation was poor (Adeyeye, 1991, 21). Okuneye (1985) supports Adeyeye's finding that Nigerian cooperatives were largely unsuccessful and illustrates similar examples of failure from other nations including Zambia, Uganda, Benin, and Tanzania. In Tanzania "poor work programmes, mismanagement of funds, small sized communal plots and poor distribution of communal earnings" led to disillusionment with the cooperative program (Okuneye, 1985, p.19).

The experience of cooperatives informs this study on Communal Property Associations in several ways. First, the cooperatives literature is more relevant than the resettlement literature as the structure of cooperatives more closely resembles the structure of the CPAs. This allows for a more direct comparison. Second, the performance of the cooperatives is similar to that of the CPAs, thus the reasons for success or failure can be thought of as broadly similar. Finally, recommendations and conclusions can be made even before more studies of the

CPAs have been undertaken due to the fact that cooperatives so closely resemble the CPAs. Many lessons have been learned from the cooperative movement over its long history that can be related to the South African CPA program.

2.5.5 Example from the Land Reform Literature

Although it is argued above that the land reform literature has overlooked evaluation of land reform projects from a livelihoods perspective, two empirical works do review the impacts of land reform in Zimbabwe. Kinsey (1999) explains that the Zimbabwean land reform program of the early 1980's did lead to improvements at the farm level. He noted that crop output "is worth over four and a half times that of the average communal area household" (Kinsey, 1999, p.183). Further, incomes were found to be more variable and average livestock holdings lower in Zimbabwe's communal areas than in the resettled (land reform) areas (p.184-185). Additionally, communal area households are more dependent on remittances, consumption for non- food items is less equally distributed, and spent more on food (rather than relying on grain stocks). The findings from this study were reinforced using data from the same study areas collected in 1999 (Hoogeveen and Kinsey, 2001).

2.6 Hypotheses and Research Questions

The problem this study attempts to address centers on the introduction of six land reform projects into the Northern Province, South Africa. A thorough assessment of the impact of these projects on the livelihoods of the members and land use of the transferred land has yet to be undertaken. No clear and decisive analysis has yet been undertaken to gauge the efficacy of these projects – or this type of project – in achieving the stated goal of the government of South Africa of rural poverty alleviation and social transformation through agricultural intensification. This study will assess the efficacy of the CPAs in affecting these goals by investigating livelihood and land use change.

2.6.1 *Hypotheses made in this Study*

Based on the literature, I have made the following hypotheses in this study:

1) The introduction of a land reform project into a rural, poor area will have the effect of *raising incomes* and *strengthening* livelihood systems. The introduction of an additional mechanism to draw on for livelihood generation may not itself strengthen livelihoods but given that a high degree of government support is included in these projects, and cooperative work tends to spread the risks associated among a larger number of individuals. I assume that *any* production that occurs on

project farms will increase income and strengthen livelihoods particular in light of the fact that members of projects are not forced, as in resettlement schemes, to abandon their prior livelihood systems. These land reform projects represent an additional livelihood option for members.

2) Projects will not have been abandoned and given the degree of government support and general enthusiasm among the population for land reform that the level of activity and participation on the farms is high.

3) A change in the use of the land will occur. The change will take the form of land intensification. The literature suggests that white-owned farms in South Africa are not always fully utilized (Van Zyl, 1996)and given that the transfer of land is from *one* white farm to *a large group* of blacks, I expect to see intensified land use based an increased pressure on the land.

2.6.2 *Research Questions*

I posit here both general and specific research questions derived from these three literatures that I will attempt to address in this dissertation. While there are many more questions than I will present here, these are the key research questions drawn from the literature review.

First, how do livelihood systems respond to a land reform change, such as those effected in the Northern Province by the central government? In short, did land reform in the Northern Province result in more or less secure livelihoods?

Second, did land uses and or cover change after the introduction of the CPAs. Sub-questions include : A) Are the social driving forces of land use change clearly evident in the satellite imagery? B) How useful is the imagery in the assessment of land use change in dryland South Africa? And; C) Is it possible to evidence change reliably and accurately from the images?

Third, did land reform in South Africa affect any land use and/or livelihood change? Is the cause of any change that may be found attributed to the land reform project alone? Land reform may not equal land use change that in turn may not equal livelihood change. Were the observed outcomes of the land reform process intended in the legislation? Were there spurious outcomes?

Embedded in all of these questions are recurrent questions, specifically:

1) What are the impacts of gender relations on livelihoods that have been altered by the land reform project?
2) How are issues of scale manifest, and what issues can be dealt with at each scale (household, farm, regional, national)?

2.7 Summary

I have presented here a thematic view of three literatures relevant to this dissertation. I discussed the construction of livelihoods and definition of households through the literature, emphasized the importance of how livelihoods are constituted, and reviewed the notion of gender relations. I presented the land use and land cover change literature, considered issues of scale, and related major themes to case studies, specifically focusing on South Africa. I then presented the literature on land reform in South Africa relevant to land alienation, tenure and policy. Finally, I set out specific challenges to the literature that I will reexamine in the discussion section. These themes were considered carefully during data collection. Questions on interview schedules and discussions with informal groups were purposely designed to examine these themes. The next chapter details the provincial context followed by data analysis and discussion of the major findings.

Chapter Three

Research Setting and Study Sites

3.1 Introduction

How do the issues discussed in the previous chapter manifest themselves in the Northern Province? I will attempt here to describe the provincial context and to situate my discussion within the themes elucidated in the review of the literature.

The Northern Province is similar to many other areas of rural South Africa in its history and agrarian structure. The residents of the rural Northern Province face many of the same constraints and opportunities as their counterparts across South Africa. However, more than in any other province, people rely on their own production for sustenance (Lipton, 1996). The Northern Province is also one of the drier provinces of the country and is prone to drought, especially during El Nino Southern Oscillation (ENSO) events. With an average annual precipitation of 381mm -635mm, only the Northern Cape and Northwest Provinces are dryer (Tyson, 1987).

The Northern Province is also the poorest in South Africa (Levin,1996). Demographic pressures include the highest population growth rate in South Africa, high rates of infant mortality, and strong out-migration to the mining

sector (Levin, 1996). Further, nearly seventy percent of the population lives below the poverty level (Kirsten, 1996). Income is derived through many sources, including the sale of crops, remittances, non-farm activities, and pensions (Baber, 1996). Labor migration to mines and the industrialized areas to the southwest often foments hardship in the rural areas. The head of household is often gone for long periods of time, leaving women, children, and the elderly to work on the farms. Often, remittances fail to meet the family needs, leaving women to seek income through trading in the market towns or more importantly to maintain a small plot of land on which the family can subsist. Ngqaleni and Makhura (1996) illustrate this, noting that women perform fully seventy percent of the labor on small-scale farms in the Northern Province.

3.2 Demographics and History

3.2.1 Political Geography

As with all of South Africa's nine provinces, the Northern Province is administered from a provincial capital. Magisterial districts divide the province to facilitate local government. Towns fall under magisterial districts and the lowest political authority is the Transitional Local Council. The lowest politico-geographic construct is the farm. Farms are codified units with precise boundaries, registered in Pretoria, and often sub-divided into 'portions'. Thus a 'farm' is both a political and production entity.

The Northern Province's largest city is Pietersburg, which is also the provincial capital. Important cities include Tzaneen in the east, Potgietersrus in the center, Thabazimbi in the extreme southwest, Messina in the north, Thohoyandou in the northeast, and Phalaborwa in the east. The northern half of the Kruger National Park is administered by the province, but provides less revenue to the Northern Province than the southern half of the park provides to the Mpumalanga province.

3.2.2 Structure of the Population

The population of the Northern Province is 4,929,000. The major languages spoken are Sepedi (northern Sotho), Xitsonga, Tshivenda, and Afrikaans. Northern Sotho people inhabit the central and south/south-western areas of the province. The Venda people are concentrated in the northeast with the Tsonga people in the east abutting Kruger National Park. Afrikaners (descendents of the first white settlers) live throughout the province and small minorities of Tswana, Mswati, Ndebele, and Mashona peoples are interspersed among the main ethnic groups.

Although spatially concentrated under apartheid into homelands, recently a great deal of ethnic mixing has occurred. The ethno-racial boundaries imposed on the northern Transvaal under apartheid have broken down in the transition to the new Northern Province. Several key areas of ethnic heterogeneity include Pietersburg, the University of the North, Tzaneen, and the southern boundaries

of the province, especially those with the Northwest Province (formerly Bophuthatswana).

One of the major demographic and economic phenomena in the Northern Province is the high degree of dependence on labor migration. Several studies estimate the number of households with members involved in labor migration as high as 70% (Baber 1995; Statistics South Africa 1997). Overwhelmingly, the bulk of migration is to the major industrial areas of Gauteng Province. Migrants will leave their homes in the north for months at a time, often failing to send remittances, leaving rural households vulnerable, without cash, and suffering from a lack of labor.

3.2.3 Economy, Infrastructure and Development

Only the Northern Cape province contributes less to the national GDP than does the Northern Province. A lack of manufacturing, few natural resources, and a large, poor, rural population explains the very low 3.7% contribution the province makes to the national budget. The only significant concentration of industry is at Pietersburg and this represents only a handful of opertations. Milling and brewing are the main industries in Pietersburg. The province has extensive timber, tea, and fruit plantations in the escarpment, almost exclusively owned or run by the white population.

A well-distributed road network serves the province, however, roads are in a state of decline. After the 2000 floods, many of the rural areas of the northeast

and east became inaccessible by road. Many roads were in the same state a full year later. Rail transports goods, but very few passengers. The N1 national highway links the province to Zimbabwe at Beitbridge and to the Pretoria/Johannesburg area.

According to the Premier of the Northern Province, Ngoako Ramatlhodi, 41% of the population of the province was unemployed in 1998, with government being the largest single employer at 25% of active workers (South Africa Yearbook, 1999, p.17). The Maputo Corridor promises to link the province to the port of Maputo as a stimulus for development. Other than this proposed road, no significant development projects have been undertaken in the province.

3.2.4 Physical Geography, Weather and Climate

The Northern Province is split almost in half by the Drakensberg escarpment. To the east is the lowveld- a hot and humid plain. The western regions encompass the highveld - a hot and dry plain. The bulk of the rain in the province falls in the escarpment region. During the rainy season in this region, weeks can pass where the dominant weather phenomenon is either rain and/or fog. Unpredictable weather patterns increase the likelihood of crop failures. Only the Northern Cape and Northwest provinces are drier on average. Soils are thin and erode quickly. Trees are scarce outside of the escarpment. Vegetation cover is primarily a savanna-scrub.

3.2.5 Political History

The Northern Province has undergone a rapid political restructuring in the past six years. For most of its history, it was called the northern Transvaal, part of the Transvaal province, and was administered from Pretoria. The north was looked upon as rural and agricultural and therefore secondary to the needs of urban, manufacturing areas of Pretoria and Johannesburg. A disproportionate number of the homelands were located in the northern Transvaal. Venda, Gazankulu, Lebowa, KaNgwane, KwaNdebele, and part of Bophuthatswana consumed a large portion of the land surface. Of South Africa's current nine provinces, only the Eastern Cape and KwaZulu-Natal had more of their land area set aside for homelands.

The Lebowa and Gazankulu self-governing states and the so-called independent Republic of Venda were politically unstable and socially volatile throughout their history. The 1959 Sekhukhuneland revolt was one of many rural protests against the often brutal regimes in Lebowakgomo, Giyani and Thohoyandou (capitals of the homelands respectively).

3.3 Census Data on the Northern Province

I will present here findings of a rural household survey conducted in the former homelands of the Northern Province in order to present a picture of the regional context. This survey focused of the living conditions and livelihoods systems and was conducted by Statistics South Africa, the state census agency. I focus in the next chapter on the specific livelihood systems and land use patterns among farms selected for this study.

3.3.1 Demographic Data

In the Statistics South Africa survey, a total of 1090 people were questioned in the former homelands of Lebowa, Gazankulu, and Venda. The majority (87%) resided in a rural area. Only 11.6% resided in a semi-rural, denser settlement. In the rural areas, the majority of households have one to two dwelling units. The majority of housing type is a brick or concrete house (57%) with a large portion (39%) of residential dwellings considered "traditional" (a structure made of mud or thatch materials).

Provision of services is inadequate but not completely absent. Thirty-two percent of households have electricity and 28% have water. For those households without water, no clear clustering of distance to the nearest water source is evident. For instance, 17% had water less than 100 meters from their house, 13%

had water between 200m and 500m, while 18% had to fetch water from more than 1km away. The majority of households reported having a pit latrine (75%).

The majority of respondents reported between three and eight inhabitants in their household. By gender, the composition of households is similar to other studies. The proportion of households with no male adults is 24% while those with no female adults is only 5%. Many households did report have at least one male and female adult present (43%, 42%).

3.3.2 Land

Of the 1090 respondents, only six percent reported having been moved from land since 1913. This is not unfounded given that the respondents to this survey were drawn from the former homelands. Forced removals occurred in white lands. This survey found that the homelands were not used as the vast labor reserves to the extent previously believed. This is most likely an artifact of survey design and sampling framework. Had the survey been conducted near the borders of the former homeland, I expect this statistic would be very different.

The largest method of land allocation in the rural areas is through a local or tribal authority, and 65% of respondents had acquired land in this way. Smaller proportions of respondents access land through inheritance of a tribal land (15%). Surprisingly, 31% of respondents said that they did not have permission to occupy the land they currently inhabited. Only 29% had a title deed to the

land they occupied. The market value of the majority of respondents land was less than R10,000 (82%), with 57% owning/occupying land worth less than R2000.

3.3.3 Livelihoods

The livelihood questions undertaken in this study were of very limited scope and generally do not present a very robust picture of rural livelihoods, however, very little data of this type exists on such a scale in South Africa.

One-third of respondents earned between R401 and 800 ($US 50-100), while 22% earned between R201-400 ($US25-50) in the month prior to the interview. The majority of respondents noted that their primary source of income was from wages of household members that actually lived with them (43%), while 28% relied on old-age or disability pensions (or someone with such a pension). Twenty percent of respondents relied on remittances and only 2% relied on farming activities as their primary source of income. As for second most important sources of income, 33% relied on pensions, 29% on pensions, and only 8% on agriculture. Agriculture, in fact, only becomes a significant source of income as a third source. In fact when queried regarding their reason for farming, nearly all respondents (94%) said it was to produce enough food for household consumption rather than as a source of income.

Relatively few participants in the survey have had formal training in either farming (5%) or animal husbandry (3%). Size of farming areas used for field

crops ranged from 0.5 to 2 ha. Unpaid family labor is the largest source of farm labor (76%). The year prior to the survey, 1996, was a drought year with 87% of respondents reporting that they had some sort of crop failure in that year, due either to drought (63%) or poor soils (13%). Grazing lands were available to only 37% in the previous year with 96% of those with access to grazing lands reporting the land was held communally. Small livestock consists mainly of chickens (75% reported 16 or fewer). None of these statistics differ drastically from studies on the rural Northern Province (specifically see Baber, 1996).

3.4 Land Reform in the Northern Province

The Northern Province has experienced the slow and unpredictable pace of land reform that has effected the rest of South Africa. Reform in the Northern Province to date consists of eighteen CPA projects involving 3,518 households. In this study, CPAs were randomly selected and stratified by size. The 2000 floods rendered two of the farms scheduled to be visited inaccessible thus alternates were chosen. Of the CPA projects selected, the beneficiary list reflected the involvement of a total of 763 households. After conversations with the chairpersons and secretaries of these CPAs, first-hand observations, and perusal of participation records it was found that only 326 households could be considered active participants. Thus, only 43% of households involved in land reform projects were active. At the provincial level, given the number of projects

and beneficiaries, we can assume that only 1512 households are active in the CPA program in the Northern Province. Knowing that the population of the province in 1999 was 4,929,000 and given that the average household size is five individuals, a mere 0.002% of the provincial population directly benefited from land reform. Note that these numbers differ sharply from the official figures. The official figures assume all households are active, which this study will show to be inaccurate.

The study sites in this research included five established CPAs and one control farm. All of the CPAs were in the Northern Province and most were located in the central region. Figure 1 shows the location of the CPAs and the control farm. The CPAs were chose at random after being stratified by size. Two of the original list had to be excluded as they were rendered inaccessible by the 2000 floods. Two alternates were selected.

Mahlambandlovu CPA

Mahlambandlovu CPA is located approximately 20km from Pietersburg just across the border of the former Lebowa homeland. The farms that constitute the CPA were purchased by the communal association from a white farmer in 1997 and formally established as a full-fledged CPA in 1998. The Mahlambandlovu CPA lies in a drier area of the province. The membership stands at 396, of which the secretary estimates fewer than 160 active members. After three months of constant contact I was only able to interview 120 members

(which still provided enough respondents to satisfy the sample design). The CPA has a small truck, two tractors, and an array of farming implements. They raise chickens and cattle on the bulk of their land.

Monyamane CPA

The Monyamane CPA is located 15km north of the University of the North on the border between the Pietersburg and Thabamoopo magisterial districts, which formerly served as the border between the Transvaal and Lebowa homeland. The CPA was established in 1997 and officially serves 201 households. The farms that constitute the CPA lie in exceedingly steep terrain. Accessibility is severely limited and much of the land can be reached only by foot. The members of the CPA reside just to the northwest of the CPA itself. The area represents a transition zone between the wetter escarpment to the east and the drier highveld to the west.

Baroka CPA

The Baroka CPA lies between Potgietersrus and Roedtan on the N11 highway. It is the second smallest of the CPAs visited in both size (5ha) and membership (41 people). The farm was established in 1997 and finalized in 1998. The farmland was part of a larger white farm that was sub-divided and sold. The members have constructed a small irrigation scheme that provides water to a small field producing vegetables. The other portion of their land has been set

aside for bean, maize, and tomato production. The farm is in the drier part of the province.

Rondebosch CPA

The Rondebosch CPA is situated in the escarpment along the Duiwelskloof Road. The thirty members of the CPA reside in the Sekgopo community, which lies just to the northeast of the actual CPA land. The farm was established in 1997 and finalized in 1998. A white farmer had previously owned the farm purchased for the CPA. The Great Letaba River separates the community from the farm. In late 1999 and early 2000 devastating floods struck northern South Africa, including the Sekgopo community and Rondebosch CPA. Widespread damage was observed at the farm and community including the destruction of most of the road network, the CPA's water pump, crops, and livestock.

Muyingiseri (Trust) CPA

The Muyingiseri Trust is located northeast of Tzaneen on the Phalaborwa (R71) road. The CPA was established in 1997 and finalized in 1998. The trust is the smallest in land area of all of the farms visited and membership officially stands at thirty-nine. At the time of interviews the road into the farm was completely inaccessible, also due to the 2000 floods. Production on the farm was limited to a small stand of tree crops and a few vegetable gardens.

Platklip Control Farm

The Platklip farm in this study is also referred to as the "control farm". This area represents a "typical" farming system, rather than a farm *per se*. The term "farm" comes from the fact that all of South Africa is divided into "farms" whether functionally a farm unit or not. This particular community is centered on the farm named Platklip, but in reality their farming system extends beyond the Platklip farm itself.

Estimates derived from hand counts undertaken by researchers at the University of the North put the number of inhabitants at approximately 1000-1500 persons. The area was part of the former Lebowa homeland in the Nebo District. The farming system is representative of other areas of rural South Africa. The land is used primarily for farming and livestock ranching. The residents are incorporated into the larger South African labor market, with many respondents reporting a member of their household off to work in Guateng.

3.5 Summary

The statistics presented here reinforce the literature on the livelihood systems of the Northern Province. The broad patterns evoked in this data will be illustrated in the next chapter on data analysis of household surveys. The Statistics South Africa survey failed to collect important information on coping mechanisms to stress and further failed to probe for the exact nature of livelihoods. For instance, categories of employment are lumped together in

"wage income". I will attempt to dis-aggregate this category to understand the dynamics of livelihood change. The broad patterns presented above, however, were largely corroborated.

Chapter Four

Data Analysis

4.1 Introduction

The broad, provincial level picture painted by the census bureau statistics in the previous chapter will be compared in this chapter with data collected on five Communal Property Associations and one rural farming area in the Northern Province. The analysis of the census data showed that the provision of services in the rural Northern Province is inadequate, local tribal authorities allocate land in most areas, the majority of respondents earned less than R500/month, and that livelihood strategies are similar to those presented in the review of literature as appropriate for the Northern Province.

This chapter will be divided into three thematic areas covering the data collected as part of field research - livelihood systems, land use change, and land reform. Data collected includes 1) descriptive statistics on livelihood system composition and land use change; 2) data on perceptions of land use change; 3) qualitative interviews with individuals; 4) a suite of remotely sensed images and GIS data; and 5) archival information on land reform including government documents and academic reports.

After a general introduction to the structure of the research, data on the three thematic areas will be presented. I will first present the descriptive and cross-tabular statistics on livelihood systems and land use. I will then present data on the perceptions of land use change, followed by an analysis of land use and cover change derived from remotely sensed data. Finally, I will report on the land reform program as it relates to the field sites. Interspersed in this discussion will be information derived from qualitative interviews. I expect this presentation of data to support my general notion that it is precisely the nexus between livelihood systems and land use change that will give us the most insight into processes of change in rural South Africa.

4.2 Structure of the Research and Methods

In order to investigate the relationship between livelihoods and land, it was necessary to find farms where land use change had taken place. In the original proposal for this research, it was hypothesized that the bulk of change had occurred outside of the realm of the state sponsored land reform program. While private land transactions between Africans and whites have occurred in the Northern Province, these transactions involved mainly an elite, emergent proto-capitalist, black farming class and as such the implications for the livelihood systems of the masses of poor were extremely limited. The goal of this research was not to understand the dynamics of farm change from rich white to rich black

farmers, rather to understand the processes that might most impact transformation of the bulk of the historically poor, disenfranchised African population. Thus, the original hypothesis was mistaken. Land redistribution that effected poor Africans was completely within the confines of the state program on land reform. Anecdotal evidence pointed to four areas where land invasions had taken place, but under further investigation communities were found unwilling to discuss the extra-legal steps they had taken to acquire land. It became evident that the focus of the research would have to be on the state-sponsored projects.

The state-sponsored projects represented land redistributed from white capitalist farmers to nacient African farmers by the central government under a comprehensive land reform program. Under the Reconstruction and Development Programme a once-off R15, 000 (~ $2140) social grant is provided to each historically disadvantaged citizen. Finding white farms far too expensive for individuals or even communities to purchase out-right, the Department of Land Affairs facilitated the land redistribution through the Communal Property Association (CPA) program by encouraging Africans interested in farming to pool their resources in order to purchase productive farms[ii].

Testing the relationships between land use change and livelihood systems on state-sponsored projects, however, was not enough. How are we to know that processes uncovered there were different from those in other rural areas? How could I conclusively evaluate the state-sponsored land reform projects and assess

any difference from other rural areas? Could these farms alone clearly indicate positive or negative feedback to livelihoods from land reform and use change? These lingering questions led to an alteration of the initial research design. A "typical" rural area was selected as a "control farm". The control farm selected was the Platklip farm in the Nebo magisterial district in the former Lebowa homeland. The people in that area have experienced no land redistribution, rather have had continual access to land under communal arrangements. If there is such a thing as a 'typical' rural farming area in the Northern Province, the Platklip Farm might be considered such. The area is under both communal and freehold land tenure systems, thus represents many other rural areas in that it has overlapping land rights. Most importantly, asking the same questions on the control farm served as a method of differentiating the redistributed farms from other rural areas to isolate the effects of the land reform program. It also provided an additional mechanism for supporting or rejecting the first hypothesis of the study, namely that land reform projects will raise incomes and strengthen livelihoods.

4.2.1 Methods

Specific methods included (listed sequentially):

1. **PILOT STUDY** - A pilot study was conducted to refine questions and determine the validity and content of questions.

2. **FARM SELECTION** - Selection of CPA farms from the land reform program list for the Northern Province was then conducted. Farms were purposely selected by size of membership. Two large farms, one medium farm, and two small farms were selected. Participants were selected randomly from farm lists.

3. **QUANTITATIVE INTERVIEWS** - An interview schedule was conducted on the selected farms. The CPAs were stratified by size for inclusion into the study and selected randomly. Respondents were drawn randomly from membership lists for each CPA.

4. **QUALITATIVE INTERVIEWS** – Informal discussions and follow-up meetings were conducted to get participant reaction. Qualitative interviews were also conducted with key informants. By key informants, I mean those people who were in pivotal positions who could help me understand the actual transfer process. Other key informant included those participants who were active in the entire process, and not in a position of authority in the CPA.

5. CONTROL GROUP INTERVIEWS - Quantitative and qualitative interviews were conducted on the "control" farm in a manner similar to the CPAs.

Further, each CPA and the control farm was identified and geo-referenced. Maps were provided to the CPAs for farm planning. Soil samples were taken on the farms that undertook agriculture. A complete soil survey of the control farm was obtained from the Department of Soil Science, University of the North. The CPAs and control farm included in this study are listed in Table 4.

Table 4 : Specific Study Sites in the Northern Province.

PROJECT	LOCATION	*HECTARES*
Baroka	Roedtan	214
Mahlambandlovu	Seshego	2159
Rondebosch	Sekgopo	341
Monyamane / Bjatladi	Dikgale	5587
Muyingiseri Trust	Tzaneen	147
Platklip (Control)	Phokwane	Not a contiguous

All statistics presented below are derived *solely* from the interview schedule. All variables were summarized and relationships in the data have been identified using Chi-Squared tests. The bulk of the data is nominal, yes/no data and as such is not suitable for regression analysis. In all categories, the data will be distinguished between the CPAs and the "control" farm (CF). Data from all CPAs has been aggregated together. Discussion of major findings will follow in the next chapter.

The two business plans detailed here were obtained directly from the CPA committee. Of the five CPAs visited, only two had access to their business plans or constitutions. The other three had no readily available copies of their plans, and in fact, several members requested that the author assist them in obtaining copies of those documents from the DLA.

4.3 Interview Data

4.3.1 Demographic Data

Demographic questions were asked in order to categorize and differentiate respondents. Data on participant gender, marital status, age, current income, prior income, number of household occupants, length of residence, and prior residence was collected.

On CPAs 54 % of respondents were female, while 70% were female on the control farm. The majority of respondents were married (75% CPA; 64% CF), and the control farm showed a statistically normal age distribution. CPA age structure tended toward older age categories.

Income clustered in both cases toward the lowest categories, under 300 Rands ($40) per month (45% CPA; 57% CF). The CPA had more people with low incomes than did the control farm. In both cases, over a third of respondents reported family members working in Gauteng Province (35% CPA; 34% CF). One quarter of CPA respondents had a family member working in Pietersburg,

the provincial capital. The same was not true for the control farm. It is relatively isolated from secondary cities such as Pietersburg.

4.3.2 Farming as Income Generation

When asked what they spent most of their *time* doing to generate income, the majority of respondents replied that they farmed (62% CPA; 85% CF). Note that this does not equate to the individual's largest source of earned income. Rather this question asks how much *time* is spent pursuing a particular income source relative to other income options. Although, the majority said they spent most of their time farming, the majority also responded to a follow-up question that farming contributed "very little" to their actual cash flow (46% CPA; 56% CF). Only 17% (CPA) and 15% (CF) respondent that farming provided them with "most" of their family income. Farming as a method of income generation is clearly not the most important source of income on *either* CPAs or the control farm. Given that CPAs were established to promote development and transform the rural proletariat through productive agriculture, this finding stands out as significant. As a consequence of this line of questioning, several respondents volunteered to participate in qualitative discussions that undertook to investigate why people continue to farm although it provides very little of their income. Responses included: "I have just always farmed"; "We Africans can not fail to farm"; "Blacks who do not farm are lazy"; "Other people will take my land"; "I must keep busy so I farm"; and " I can't get employment elsewhere". Clearly

there is a strong social imperative toward farming, regardless of its unprofitablilty as a time versus income generating activity.

Crops farmed included maize, beans, melons, and vegetables. This represents no significant variation from findings produced in other studies or from the authors own research in KwaZulu-Natal (McCusker, 1997). The majority of respondents in both cases said that their family farmed as a unit and that they farmed all of the time.

4.3.3 Identification of Food Shortages

The first of several distinctions between the interview schedules as administered on the CPA and control farm occurred when attempting to identify periods of food shortage. The distinctions occurred to accommodate the differing context between the CPAs and the control farm. Originally, the interview schedule read " when have you and your family experienced a food shortage since you joined the CPA" and "has this occurred more often since you joined the CPA". This line of questioning was clearly intended to assess the impact of CPA membership on livelihoods. However, this question would not make any sense to participants on the control farm. Most of them had lived in that area the majority of their lives. The question was modified to "how many times have you experienced a food shortage since 1980". In response, 45% of CPA respondents reported that they have experienced a food shortage since joining, but that their food situation is better now than before joining the CPA. Their food availability

was assessed through a suite of questions regarding the price of food, the number of times they had to rely on the shops for food, and their general perception of whether or not they are "better off" since joining the CPA. On the control farm, 19% of respondents have experienced a food shortage since 1980, with most respondents experienced shortages in the period between 1993 and the present. Generally, food shortages were found to have occurred in the periods 1980-83, 1988-89, 1992-4, and 1998-99 and affected widespread parts of the Northern Province, including the study sites (Baber, 1996).

4.3.4 *Coping Mechanisms to Food Shortages*

Coping mechanisms to food shortages in the Northern Province show remarkable lack of resilience. As in KwaZulu-Natal, mechanisms are largely confined to reliance on shops, shop credit, and a very limited suite of accompanying methods (McCusker 1997). On CPAs the frequency of visits to shops markedly increases in times of stress (from one a month in normal times to every other day during shortages). The control farm showed more stability in the reliance on shop-bought food. Both cases press the argument for *structural* dependence of rural people on shop-bought food. This will be discussed further in the next chapter.

Purchasing food at the nearest shop is the first coping mechanism to food insecurity on both the CPAs and the control farm (54% CPA; 68% CF). Fewer people relied on credit purchases as their first response to food shortages (14%

CPA; 24% CF). The second method of the majority of respondents was borrowing from neighbors (CPA 17%; CF 56%). The third step was asking relatives (CPA 22%; CF 5%). As in KwaZulu-Natal, few coping mechanisms could be identified past the third method. In discussions with participants, the author's concerns regarding these findings were presented to discussion groups who responded that the majority of people were almost completely dependent on the shops, credit, and their neighbors/relatives in times of need. No wild food gathering or asset sale could be identified. When queried about asset sale, many participants responded "we have nothing to sell". Observation of households by the author confirms the relatively low number of productive assets. Of the randomly sampled members of the largest CPA, only two were observed to have access to tractors. Asset sale in terms of livestock will be discussed in more detail in the next section, but generally have very little impact. Respondents did recall slaughtering goats and chickens, but reported that they "would only do that if they had bad credit and could not purchase from the shops". When queried about the frequency of animal slaughtering as a coping mechanism, several respondents reported that they did slaughter small livestock in severe cases of food shortage. The frequency of such occurrences can not be determined with certainty as this did not show up in the quantitative sample.

4.3.5 *Livelihood Systems*

The thrust of this research was determining the livelihood systems for rural residents in the Northern Province and relating the findings to land use change. A suite of questions was asked to attempt to uncover the exact nature of livelihood systems. As shown above, the amount of time spent in agriculture is clearly disproportional to its return as measured by income.

Labor migration is an important facet of rural economies in South Africa, and was represented as such in the study sites. Industries in Gauteng drew significant numbers of household members for labor (35% CPA; 34% CF). Secondary cities provided fewer employment opportunities for the control farm, but as noted above, 24% of CPA respondents worked or had a family member working in Pietersburg. Working as farm laborers on white farms was significant to only a few people (10% CPA; 5% CF).

A series of questions were asked regarding income generating activities and the importance of the activity to the family income. Table 5 summarizes the major findings. The list of activities was determined through extensive pilot study questioning to determine the range of activities in which households *might be* involved. The list was compiled from all answers garnered during the pilot phases and then incorporated into the questionnaire. Redundancies were intentional.

As shown in Table 5, members of the CPA have a broader income base than do members of the control farm. The percentage of respondents reporting activity per category is much broader among CPA members. That one-third of control farm households rely on pensions is remarkable as is the number of CPA households that rely on selling petty commodities.

These figures indicate a diverse livelihood strategy in among both groups, however, the members of the control farm are markedly more dependent on entitlements, either from other family members or the state.

Livelihood options include raising and selling livestock, particularly cattle. In both cases, the majority of respondents on the CPA held between 1-2 cattle (54 %) with large proportions of the control group holding no cattle (63%). Among CPA participants, 43% owned only two cattle. Fewer than 2% held more than 10 cattle in both cases. Change in the number of cattle owned tended toward losses, but the majority reported no change (37% CPA; 44% CF). No significant increase was shown in either case.

Table 5 : The Range of Livelihood Strategies and Relative Importance

Activity	% of CPA	% of Control
Hand-craft making	1% (14)	1% (10)
Brewing Beer	14% (5)	9% (6)
Traditional Doctor	6% (11)	1% (10)
Selling Cooked Foods	4% (12)	2% (9)
Dressmaking	8% (10)	1% (10)
Mine Worker	3% (13)	1% (10)
Government Employee	24% (2)	13% (5)
Maid/Domestic	12% (7)	9% (6)
Farm Laborer	21% (3)	22% (4)
Works for White Farmer	10% (9)	5% (8)
Sells Fruit	11% (8)	11% (6)
Pensions	13% (6)	30% (1)
Part-time or Informal	16% (4)	7% (7)
Selling Petty Commodities	37% (1)	27% (2)
Remittances	16% (4)	26% (3)

Regarding small livestock such as goats and chickens, the majority of respondents hold between 0-2 goats (90% CPA; 62% CF) and change has tended toward losses but the majority have experience no change in the number of goats they own (68% CPA; 44% CF). Noteworthy is that 32% of participants on the control farm have reported losing between 2 and 11 goats over the past ten years.

The majority of CPA respondents (79%) reported holding between 0-2 chickens, while the range of the number of chickens per household was much more diverse among the members of the control farm. Only 31 % held 0-2 chickens with a cluster of respondents (37%) reporting that the held between 5 and 10. The BaPedi people of the study areas belong predominantly to the

Zionist Christian Church that forbids the consumption of pork, therefore, pigs were not included in small stock.

4.3.6 *Land Use and Land Authority*

This section will deal with quantitative interview data collected exclusively on the control farm. Because all land use decisions are made by the governing committee of the CPA and are set forth in the business plans and constitution, there was no compelling reason to ask individual households about land use decisions on the CPA. They had no individual control over those decisions other than voting for or against them. Data presented here regarding land use decisions on CPAs is strictly qualitative, obtained from discussions with the members of the executive committee and from the business plans that I was able to obtain.

Fifty percent of respondents on the control farm reported that their chief directed them as to which pieces of land to farm and raise cattle. Regarding the other fifty percent, nearly all (94%) said they made land use decisions on their own, many adding the knowledge was drawn from their "past experiences". Shifting from one farming plot to another is not common. Once a household is allotted a field, they tend to keep that piece of land as their own (94%). This is not surprising given that the area is still largely under communal tenure arrangements. Fallow is still practiced by 40% of households.

Land use change was directly queried. The amount of land a household controls has been stable in the period since 1990 as evidenced by the fact that 86% of participants have neither gained or lost land to others, however, a significant degree of farm-land to range-land conversion seemed to occur. One-fifth of participants have stopped farming a piece of land previously under cultivation. Farming is viewed as important, but less reliable than raising cattle, as 87% of respondents have grazed cattle on land that they previously cultivated.

Only 9% of respondents have, since 1990, increased the number of cattle they own. The majority (52%) have neither increased nor decreased their herd size, while some reduction in herd size has taken place (20% of respondents). These findings would seem to indicate that farmland on the control farm is being abandoned for better land or used for more extensive purposes such as raising cattle. At first this would suggest a large amount of land use change. Under further investigation, it was discovered that this was *intra-annual* change rather than *inter-annual* change and the practice is common in South Africa, in fact all of Africa. When the crops are harvested, cattle are allowed to graze on the stubble to provide fertilizer to enhance the next season's crops. Land designated for raising cattle is considered not suitable for farming, therefore, no cultivation would occur.

On the CPAs, land use decisions are made cooperatively, between the membership and the farm committee and largely adhere to the business plan. On the two CPAs where the business plans were obtained, the communities did not

deviate from the plans, although one had not fully implemented the business plan. The Baroka CPA had taken the advice laid down in the business plan and had undertaken a manageable degree of cultivation given their relatively small number. They also raised cattle on some of the open fields. The Mahlambandlovu CPA suffered from an inability to obtain an additional piece of land on which they had planned to cultivate crops. The secretary of the CPA indicated that they had been tied up legally from obtaining the land. The CPA possessed a wealth of farm equipment, well maintained and managed, but unused. The CPA had full time and part-time paid laborers that it drew from the membership. Following the business plan, the Mahlambandlovu CPA raised chickens for sale as well as cattle. Community members were required to pay a monthly fee to have their cattle tended on the CPA.

On the other CPAs, general disorganization plagues the farm operation. The structure of authority between the chief and the committee of the CPA has been completely blurred on the Monyamane CPA. For instance, when the author met with the CPA committee to arrange fieldwork, it was the chief who headed the meeting, rather than the chair of the CPA. Members indicated that it was the chief that made land use decisions rather than the governing body of the CPA. Upon intensive further investigation, no clarity was gained on this issue. Conversations with another academic investigator confirmed the general confusion over "who was running things at Monyamane"[iii].

The Rondebosch CPA had a unified committee and active use of the farmland. They indicated that they grew maize (corn) and tomatoes among other crops such as beans and vegetables. Unfortunately, the floods that hit northeastern South Africa and Mozambique in February 2000 devastated the Rondebosch CPA and the neighboring Sekgopo community. The Great Letaba River rendered the CPA's farmland inaccessible early in February. Many roads to the Sekgopo village were accessible only by 4x4 and others were completely inaccessible.

Members of the Llwanlemeetse CPA, the pilot study group, reported inability to access funds necessary to begin farming. Further, the head of the CPA committee reported theft of the community's farming implements with no resolution provided by local law enforcement. As such, the membership felt very pessimistic about the prospects for their CPA. The land acquired by the CPA was used for raising a nominal amount of cattle. Refer to the discussion chapter for more on the general situation of these CPAs.

4.3.7 *The CPA and Perception of Livelihoods*

People's perception of how they have fared since joining the CPA is largely neutral to slightly positive. The majority (39%) said their income was about the same, while a third indicated they are a little better off. However, more people said they had become "much richer"(14%) than those who responded that they had become "much poorer" (4%). Nearly three-quarters of the respondents

believe that, in general, members become wealthier the longer they are a member of the CPA.

A large number of respondents (38%) reported that they now sell crops, but had not done so before joining the CPA, but an equal number reported that they have never sold any of their agricultural production. In real terms, however, most respondents felt that since joining the CPA food was too expensive for them (76%) but that it is not more expensive than before joining either (44%). This indicates that while they feel they are better off, food remains a critical drain on their budget. As an indicator of the impact of the CPA on their own subsistence production, respondents were queried on their dependence on store-bought food. One-third reported depending on shops much more, while half said they relied on shops somewhat more or about the same.

4.3.8 Analysis by Gender

Analysis of the household interview data by gender revealed important differences and corroborated several assumptions on gender relations. One of the most prevalent themes that permeate the literature on gender is the inequality of income. Men tend to have much more control over family finances, often disproportionate to the amount they contribute to the total household budget. Women in this study were more likely than men to earn under R300 per month (50% of women compared to 38% of men). Men concentrated their activity only slightly more on farming than did women. In terms of the mix of crops, however,

women showed more willingness to plant beans, melons, and other smaller field crops than men. This is largely a result of the gendered division of space that allocates "garden" or small area agriculture to women and "field" or large area crops to men. As a result of this division of space, differences in income arose. Men were more likely to respond that farming gave them "most" or "some" of their income while 52% of women said farming provided "very little" of their income.

Involvement in the CPA has increased men's ability to sell crops, but the reverse is true for women. Respondents were asked if they sell more or less of their crops since joining the CPA. While 42% of men responded that they did sell more, 44% of women said that they had sold crops before but have not done so after joining the CPA.

When asked about non-agricultural sources of income, women were nearly twice as reliant on entitlements, such as pensions or remittances, while men were twice as likely to have informal or part-time employment. Dressmaking and beer brewing were notable sources of income that were dominated by women.

Women reported that they were less reliant on shop-bought food than did the men (53% to 31%). Men concentrated on maize production, which left them more reliant on food from the shops than were women (39% to 17%). In times of stress, men are more likely to rely on credit from formal food retailers than women, thus reflecting South Africa's long-standing bias against women in the credit market. The perceptional data reflected that women were more likely to

believe it important to farm to produce food. Men were more likely to see farming as a method of obtaining cash.

4.3.9 Relationships in the Data

The relationships presented here provide information on the nature of livelihood systems in this study. The findings here allow for probing and testing of specific topics deemed relevant in the literature regarding livelihood systems. Gender, age, and income have been identified a key variables for understanding the nature of livelihood change, particularly in northern South Africa (Baber 1996). These findings allow for further refinement of the impacts of the CPA on livelihoods by differentiating not only between age group, gender, and income group, but by location. Relationships that might occur on the CPA but not the control farm (or visa versa) must be explained. Testing for these relationships can uncover key differences between the CPA and the control farm, thus providing insight on whether or not the members of CPAs are significantly and statistically different from other rural people. This will allow for identification of the impact of the CPA on its membership.

Given the nature of the dataset, the statistical method employed to probe for relationships in the data was the chi-squared test. This test only supports or rejects the presence of a relationship and does not indicate directionality, as do correlation and regression tests. The nominal and ordinal data collected in this study do not meet the requirements of either correlation or regression tests and

transformation of the data to meet the requirements was beyond the scope of this dissertation. Relationships commented on below will be followed by the corroborating statistic. As this dataset is in reality two data *sets*, one for CPAs and one for the control farm, tests for relationships were run separately. The results will then be discussed.

The CPA sample size is 286 while 99 persons were sampled at the control farm. Table Six summarizes the variables tested in both data sets. Rather than "rummaging" through the data to try to "find" relationships, I referred to the literature to identify variables that would have the strongest controlling influence on how livelihoods are constituted namely age, gender, and income. It is important here to note that some variables that may seem important were omitted as they had too little variation to produce a meaningful statistic. For instance, very few respondents reported that they did *not* farm, so an important livelihood variable, farming, was not included in the tests. Of the three "independent" variables, "age" and "income" were re-coded to produce fewer categories in order to garner a more meaningful statistic. "Income" was reduced from eight to three categories: poor (R0-100/month), average (R300-600/month), and wealthy (>R600/month). Age was compressed from seven to three categories: young (18-29) middle aged (30-59), and elderly (above 60).

Overall, more relationships were found in the CPA data than the Control Farm data. Chi squared tests on the CPA data showed relationships between gender and 1) age [AGE]; 2) change in food security [CHGCPA]; 3) the amount of

crops sold [CRPSELL]; 4) food shortages [EXPSOME]; 5) level of income [INCOME]; and 6) the hiring of laborers for farming purposes [LABOR2]. Further testing of the CPA data found relationships between income [INCOME] and hiring laborers for farming [LABOR2]. Variables that have a relationship to age include: 1) the contribution of farm income to total income [FARMR]; 2) the respondents gender [GNDR]; 3) the respondents income [INCOME]; 3) the hiring of laborers for farming [LABOR2]; and 4) the respondents marital status [STATUS]. A discussion of these findings will be included in the next chapter.

Very few relationships were uncovered from the testing of the control farm data. Statistically significant relationships included: 1) age [AGE] and income [INCOME]; 2) gender [GNDR] and the allocation of work time to specific tasks [MOST]; 3) age [AGE] and the allocation of work time to specific tasks [MOST]; 3) income [INCOME] and the allocation of work time to specific tasks [MOST]; and 4) income [INCOME] and marital status [STATUS]. Again, the findings presented here will be discussed in the next chapter.

Of the central points of this dissertation is to evaluate the expected benefit of transferring land to rural South Africans via the Communal Property Association land reform scheme. As such, one method of evaluation I have chosen to use is the direct statistical comparison of data obtained on the CPAs versus that obtained on the "typical" rural farm (Control Farm). Table Seven summarizes the findings of chi-squared tests employed to determine whether or not membership in a CPA versus living in a typical rural area was related to a

suite of variables. I am testing here to determine the impacts of CPA membership. Relationships were found between the respondents place of residence (CPA versus Control Farm) [PLACE] and age [AGE], coping strategies [COPING], whether or not the participant farms [FARM], gender [GNDR], income [INCOME], and labor [LABOR].

Table 7 : Selected Statistics

Variable Name	Explanation	Realtionship with Gender: CPA	Relationship with Gender: Control Farm	Relationship with Income: CPA	Relationship with Income: Control Farm	Relationship with Age: CPA	Relationship with Age: Control Farm
AGE	Age of Respondent	Yes DF=5, 6.211	None	None	Yes DF=4, 16.405	N/A	N/A
ALWEXP	Has food always been in short supply?	None	None	None	None	None	None
BADBUY	How much food do you purchase in a BAD year?	None	None	None	None	None	None
CHGCPA	Food security increased or decreased since joining CPA?	Yes DF=5, 17.799	N/A	None	N/A	None	N/A
COPING	How do you cope with food insecurity?	None	None	None	None	None	None
CROPS	What crops do you grow?	None	None	None	None	None	None
CRPSELL	Do you sell more or less of your crops since joining the CPA?	Yes DF=5, 11.149	N/A	None	N/A	None	N/A
EXPSOME	Has your food supply sometimes been low?	Yes DF=2, 7.357	None	None	None	None	None
FARMR	How much does farming contribute to your income?	None	None	None	None	Yes DF=6, 18.719	None

Table 7 : Selected Statistics

Variable Name	Explanation	Realtionship with Gender: CPA	Relationship with Gender: Control Farm	Relationship with Age: CPA	Relationship with Age: Control Farm	Relationship with Income: CPA	Relationship with Income: Control Farm
GNDR	Gender	None	None	None	None	Yes DF=2, 8.80	None
INCB4CD	Income before joining the CPA	None	N/A	None	N/A	None	N/A
INCCHG	Change in income since joining the CPA	None	N/A	None	N/A	None	N/A
INCOME	Respondents monthly income	Yes DF= 2, 7.062	None	N/A	N/A	N/A	N/A
INCPERCP	Respondents perception of their change in income	None	None	None	None	None	None
LABOR	Are there enough laborers to help you farm?	None	None	None	None	Yes DF=6, 17.535	None
LABOR2	Have you ever hired laborers to help you farm?	Yes DF=2, 6.577	None	Yes DF=4, 10.936	None	None	None
MOST	What do you spend most of your time doing?	None	Yes DF=1, 3.941	None	Yes DF=2, 17.505	None	Yes DF=2, 41.220
OTHINC	Other sources of income	None	None	None	None	None	None
STATUS	Respondents Marital Status	None	None	None	None	Yes DF=6, 32.065	Yes DF=4, 46.741

Table 8 : Relationships in the Data

Variable Name	Explanation	Realtionship with Membership in the CPA versus Control Farm?	Variable Name	Explanation	Realtionship with Membership in the CPA versus Control Farm?
AGE	Age of Respondent	Yes DF=2, 6.672	LABOR	Are there enough laborers to help you farm?	Yes DF=1, 60.306
ALWEXP	Has food always been in short supply?	None	MOST	What do you spend most of your time doing?	None
ALLFRM	Does your entire family farm with you	None	OTHINC	Other sources of income	None
COPING	How do you cope with food insecurity?	Yes DF= 4, 27.748	STATUS	Respondents Marital Status	None
CROPS	What crops do you grow?	None	WKGP	Does someone from you household work in Guateng?	None
FARM	Do you farm?	Yes DF=1 6.294			
FARMR	How much does farming contribute to your income?	None			
GNDR	Gender	Yes DF=1, 7.237			
INCOME	Respondents monthly income	Yes DF=7, 49.656			

4.4 Assessment of Land Cover Change Derived from Satellite Imagery

4.4.1 Methods and Error Assessment

"Images in this thesis/dissertation are presented in color."

To assess the scope of land cover change on both the redistributed and control farms, three Thematic Mapper satellite images from 1988/89 and three Enhanced Thematic Mapper satellite images from 2000, specifically path/row numbers 169/077, 169/076, and 170/076 were obtained. Table 6 includes specific details of each scene. These images encompassed all but one of the study areas. Images were collected that would represent the study areas before and after the transfer of land from white to black owners. Variation due to seasonality was controlled by selecting scenes with similar acquisition dates across the two time periods. One intervening factor that could not be controlled for was the amount of moisture present in the landscape. As noted elsewhere, the year 2000 was a flood year, with the heaviest rains falling in February. Lower than normal rainfall occurred in 1988 and 1989. While not considered drought years by the national weather bureau, the earlier imagery represented a landscape with much less moisture present than did the 2000 imagery. Although differences in vegetation could be expected, three factors mitigate the influence of seasonality in this analysis. First is the date of acquisition of the images. All of the scenes were acquired well after the end of the rainy season, with the exception of

path/row 170/076 for the year 1989. Second, the 2000 rains were intense in February, but ended in late March as is normal. Finally, the images were classified manually. The interpretation of land cover was undertaken with the knowledge that 2000 was a rainier season. Furthermore, the primary differentiating factor for land cover types was spatial patterns in addition to spectral reflectances. The influence of seasonality, while not completely overcome, was considered and steps were taken to ameliorate its influence.

Table 9 : Detailed Scene Properties

Scene ID (Product #)	Path	Row	Date of Acquisition	Rectification RMS Error (pixels)	Sensor
01199071301350001	169	077	06/02/1988	1.1220	Landsat 4 (TM)
0750009180043_0005	169	077	06/03/2000	1.2845	Landsat 7 (ETM+)
01100092801180003	169	076	06/02/1988	1.2208	Landsat 4 (TM)
075000918043_0003	169	076	06/03/2000	1.3996	Landsat 7 (ETM+)
01100092801180001	170	076	03/08/1989	1.5888	Landsat 4 (TM)
0750009180043_0001	170	076	04/23/2000	1.4408	Landsat 7 (ETM+)

Each scene was geo-rectified (UTM WGS 84 [Zone 36 South]) and the geo-rectification was verified across the two time periods to ensure accurate representation of change. The RMS error of each scene is detailed in Table 6. All scenes were classified using the unsupervised isodata clustering method. Supervised classification was also undertaken. Neither method satisfactorily delineated classes needed for analysis of land cover change in the study areas. Change in the study areas was anticipated to be largely a fluctuation between agriculture, grazing, and fallowed or abandoned land. The "study area" for land

cover and use mapping was defined as the Communal Property Association itself and the areas around the CPA where members resided. Thus, the vicinity, or environs, included any rural townships where a CPA member resided and its' associated farming areas and grazing land. Baroka CPA was not included in the land use and cover analysis due to the expense of acquiring the two additional scenes. The Baroka CPA farm is exceedingly small and is discontinuous, therefore, the majority of the farm would fall under the minimum mapping unit. It would have been the only study site in the scene (path 170 row 077) and thus the expense was determined to be unjustifiable.

Spectral separation was difficult to achieve and proved to be inadequate. Figure 27 demonstrates this problem in the area around the Monyamane CPA. The isodata classification method was unable to differentiate grassland from agrarian land. Notice on the map that the area delineated as agricultural by the unsupervised classifier is far different from the polygons designated as such using the on-screen-digitizing method. The unsupervised classifier was often unable to differentiate between short grass areas and agricultural areas.

To overcome the inadequacy of the spectral classifiers, the relevant areas of each scene were digitized manually using on-screen digitizing where the image is displayed on the computer screen and polygons are created with the mouse rather than using a paper map and a digitizing tablet. Each area was divided into one of five land cover classes: agriculture, grassland, forested, residential, and other. Figures 2, 4, 7, 9, 12, 14, 17, 19, 22, and 24 show the spatial-spectral

properties of each study site based on a standard Band 4, 3, 2 false-color image representation. Note that agricultural lands in the study areas are not rectilinear. African agriculture is quite different spatially from industrial or white agriculture. While white/industrial agriculture is largely a collection of rectangular and square fields with an occasional center-pivot irrigation circle, African agriculture is spatially and visually represented as a patchwork of small fields, often following contours, without definitive boundaries. Grazing land lies between and beyond farmed areas, however, because of the need for *a priori* knowledge of the area to determine which areas are actual grazing lands and which are simply open grasslands, the classification will remain "grassland". Forests are not widespread in the study areas, save Rondebosch and Monyamane CPAs, which are in the forested escarpment region. For the other study sites, forested areas are those in inaccessible areas such as gullies or high peaks, where farming or grazing is minimal.

The land use change maps were created using ARC/INFO, ArcView, and Microsoft Excel. The digitization of land cover polygons was undertaken in a manner that would reduce error as much as possible. The coverage for each time period was digitized separately to avoid visually biasing one image based on the other. The earlier time period was digitized first, followed by the later period. After the initial digitization a second image analysis iteration was conducted. The images from each period were compared in the same image viewer (Erdas Imagine) using a 5,4,3 band combination followed by a 4,3,2 combination. If the

boundary of a polygon was found to differ significantly and justification was weak (meaning spectrally indeterminate) then the boundary was left as created in the earlier time period. Upon investigation during groundtruthing, the sliver polygons were found to be especially problematic. Respondents often noted that when fields were added to an existing group of fields the most common method was to simply "add another row of fields to the edge". Therefore, the error inherent in the rectification process could not be isolated. When groundtruthing, care was taken to stay out of the sliver polygons and edge areas. Points were taken 100 meters from any given boundary. Once digitized, each polygon was coded in the database to correspond with the visually interpreted land use on the underlying image. Next, the two coverages were merged using the "union" command in Arc/Info with the "nojoin" option at the minimum fuzzy tolerance. The union coverage contained the unique identifiers for each polygon from the two original coverages, but also assigned new unique identifiers in a separate variable column in the dataset as many of the land use polygons overlapped creating "slivers". Because the unique identifiers for each original coverage remained in the new union coverage, the coding of the new polygons for land use could be done manually. In order to generate a 'land use change' variable, the land-use codes for the two original coverages had to be added together. To do this, the land use label for the 1988/9 scenes was recoded from single digits to tens. For instance, the code for grassland was changed from "2" to "20" and so on. This would allow for unique codes to be generated in the final "land-use

change" variable for the union data set. Had one of the land use codes from the two original variables not been re-coded, the 'land use change' variable would not have had distinguishable change classes.

Error assessment of the images was undertaken in two steps. The first step was to identify highly unlikely types of land conversion, for instance from residential to wooded. These errors resulted from the on-screen digitizing and were small discrepancies along land cover boundaries. During follow-up field work, the accuracy of the image classification and the resulting land use and cover maps was assessed in the field with the maps created in the first step. Transects of each area were conducted. At points in each study area, the land cover (and interpreted use) was recorded using a GPS and visually documented with a camera. The sample was not random and did suffer from overemphasis on areas that were difficult to classify during the initial image-processing phase. The error matrix (Table 10) shows that most errors were derived from improper classification of wooded land. The error was primarily of commission - incorrectly assigning pixels to the wooded category. This resulted largely from the inability to distinguish between wooded and grassland/residential land at the border between such cover/use types. The overall accuracy was 91.8%.

The error assessment was calculated for the 2000 scene only. Due to the inaccessibility and expense of the National Land Cover Map of South Africa, no comparison of error could be undertaken for the 1988/89 period. Given that the 2000 and 1988/89 data come from the same sensor, at the same time of the year,

and with the same haze levels, the level of error for the 2000 period is indicative of the level of error in the 1988/89 period.

Table 10 : Error Matrix

	Agriculture	**Grassland**	**Wooded**	**Residential**	Row Total
Agriculture	9	0	0	0	9
Grassland	0	16	1	0	17
Wooded	0	2	7	1	10
Residential	0	0	0	13	13
Column Total	9	18	8	14	N=49
Column = Classified Row = Known					
Producer's Accuracy (Omission)			**User's Accuracy (Comission)**		
Agriculture	100%		Agriculture	100%	
Grassland	88%		Grassland	94%	
Wooded	87%		Wooded	70%	
Residential	92%		Residential	100%	
Overall Accuracy = 91.8%			K-hat = 0.893		

In an attempt, to thoroughly investigate possible classification error in the 1988/89 scenes, intensive interviews were conducted. A local resident who lived in the area and knew the land use history was taken to a given spot where some classification confusion had entered into the process (usually an area that was a sliver polygon on the land use change coverage). The person was then queried about what the land had been used for (if anything) in 1988/89. This less precise method of error assessment was conducted for all of the study sites except Muyingiseri CPA. While not definitive nor statistically defendable, this method

helped to clarify confusion encountered during the analysis of 1988/89 land cover and use.

4.4.2 Findings

In the areas where the most land cover change was anticipated, those farms transferred under the CPA program, the least change was observed. In the case of Muyingiseri CPA there is scant evidence of any change whatsoever. Only marginal shifts in existing patterns were observed. In the Monyamane, Rondebosch and Mahlambandlovu CPAs extensification and abandonment occurred. Areas that had been more intensively utilized in 1988/89 were less used in 2000. Areas outside of the actual redistributed farms, however, showed a variety of land use changes. This 'external' change is mentioned here, as the owners of the farms do not actually occupy the transferred lands. The CPA Act expressly forbids residence of any kind on transferred lands. Thus, the owners of the CPA live in neighboring areas, with the exception of the Muyingiseri Trust. The Muyingiseri Trust is located in the middle of an area of largely white inhabitants and the owners must drive in from approximately 10-20 kilometers to access their farm. In the following descriptions of land use change on individual CPAs the term "agriculture" refers to both farming and herding while "grassland" refers to spatially undifferentiated grassy scrubland. "Grassland" should not be taken to mean land on which cattle are raised. Table 11 quantifies land conversion for the study areas.

Table 11: Percentage Land Area Conversion from 1988/89 to 2000 by Land Use/Cover Code

Monyamane CPA

Land Use Category	CPA 1989	CPA 2000	CPA Change	Environs 1989	Environs 2000	Environs Change
Agriculture	0%	0%	0%	16.3%	14.7%	-1.6%
Grassland	11%	22.3%	+11.3%	42.9%	40.7%	-2.2%
Wooded	88.9%	75.8%	-13.1%	37.4%	39.7%	+2.3%
Residential	0%	1.9%	+1.9%	3.2%	4.7%	+1.5%

Mahlambandlovu CPA

Land Use Category	CPA 1989	CPA 2000	CPA Change	Environs 1989	Environs 2000	Environs Change
Agriculture	17.1%	2.5%	-14.6%	18.2%	15.6%	-2.6%
Grassland	82.4%	97.5%	+15.1%	78.9%	78.5%	-0.4%
Wooded	0.4%	0%	-0.4%	0%	0%	0%
Residential	0%	0%	0%	2.5%	5.3%	+2.8%
Water	0%	0%	0%	0.2%	0.4%	+0.2%

Muyingiseri CPA (Muyingiseri has no membership residential environs)

Land Use Category	CPA 1989	CPA 2000	CPA Change
Agriculture	0%	0%	0%
Grassland	71.4%	64.6%	-6.8%
Wooded	28.5%	26.6%	-1.9%
Residential	0%	0%	0%
Water	0.1%	8.7%	+8.6%

Rondebosch CPA

Land Use Category	CPA 1989	CPA 2000	CPA Change	Environs 1989	Environs 2000	Environs Change
Agriculture	8.8%	3.4%	-5.4%	23.8%	24.0%	+0.2%
Grassland	4.7%	0%	-4.7%	23.8%	6.3%	-17.5%
Wooded	85.5%	94.7%	+9.2%	49.2%	46.6%	-2.6%
Residential	0%	0%	0%	2.5%	20.6%	+18.1%
Water	0.8%	1.8%	+1%	0.4%	2.3%	+1.9%

Platklip Control Farm

Land Use Category	CF 1989	CF 2000	CF Change	Environs 1988	Environs 2000	Environs Change
Agriculture	36.5%	37.4%	+0.9%	59.1%	56.0%	-3.1%
Grassland	56.8%	48.4%	-8.4%	34.0%	35.7%	+1.7%
Wooded	0%	0%	0%	0%	0%	0%
Residential	6.5%	14.1%	+7.6%	6.8%	8.2%	+1.4%

* CF = Control Farm

The Mahlambandlovu CPA is the second largest CPA in area and the largest in terms of membership in the study group. As evidenced by Figure 6, the membership is spread across a large rural area to the west of the CPA. The CPA is located in the drier area of the province to the west of Pietersburg. Rainfall is significantly less than on the CPAs nearer the escarpment region. On the CPA itself, land use change consisted largely of extensification. In the northern area of the CPA, the pink area represents land that had previously been used as farmland and has since become grassland. A large area toward the center-east, represented in light green, indicates that some shift toward agriculture has occurred. However, examination of the satellite imagery (Figure 2) for 2000 and my records indicate that the shift was not into farming, but rather herding.

Outside of the CPA, where the membership resides scattered among other non-members, intensification is evidenced just to the north of the CPA (represented by light green areas) while extensification can be seen to the south and southwest of the CPA. Noticeable expansion of settlements (rural townships) is shown in dark red and dark green. The overall pattern of change on the CPA itself, then, has been extensification. Although one area shows a change from grassland to agriculture, the change was not to farming, but rather herding cattle, which for this study is still considered an extensive activity.

The Monyamane CPA is on the western side of the escarpment region and although in a relative rain-shadow still receives more rain than several of the other CPAs. As such, the Monyamane CPA has more wooded area. In several

parts of the CPA itself (Figure 11), wooded areas have been cleared to make way for grassland. The imagery does not provide any indication (i.e. fences, cattle paths) of the land being used for grazing cattle and at the time of field work in late 1999 and early 2000 I was told the areas were not specifically used for grazing cattle. A small residential area developed in the far northwest corner of one of the farms that is part of the CPA. Overall, very little intensive activity is occurring on the transferred farmland. This is not surprising given the rugged terrain of the redistributed farms. I found it exceedingly difficult to even access the majority of the farm other than on foot.

Outside the CPA, several rural townships sprang up between 1988 and 2000 while others expanded in size. Most notably, and relevant to the CPA, are the two large settlements just to the northwest of the CPA represented by the letter "A" on Figure 11. These are the areas where the majority of the membership lives. It is important to note here that this is the only CPA where any of the membership moved in order to be nearer the farm itself. This project benefited the Magoeba people who were displaced from Magoebaskloof near Tzaneen. Since that time, they were forcibly removed from several locations and scattered throughout the area between Pietersburg, Duiwelskloof, and Tzaneen. This project had the effect of re-uniting about thirty of the dispersed community.

Similar to the Mahlambandlovu CPA, extensification is widespread in the area off the CPA. Large areas of agricultural land have reverted to grassland or wooded land. Polygon "B" in Figure 11 represents the farm land utilized by CPA

members in the adjacent townships. The land under cultivation has fluctuated, but not more or less than would be expected in a typical African farming system. According to interviews with the chief of the Magoeba people and evidenced in Figure 11, the areas to the southwest of the CPA have seen a reduction in the amount of land cultivated as people are seeking employment at nearby Pietersburg and the University of the North.

Tucked deep in the escarpment, the area around the Rondebosch CPA has experienced a large growth in population since 1988. The dark green area in Figure 16 shows a dramatic increase in the amount of land area used for settlement. This representation is somewhat misleading, however, as it would indicate that no settlement existed in this area in 1988. In fact, the imagery from 1988 does show small areas of settlement. These areas are very small and nearly indistinguishable from the surrounding grassland in 1988, while in 2000 the area has clearly become residential. A great deal of change has occurred since 1988 in areas other than the actual redistributed farm. Surprisingly, given the clear increase in population, agriculture on the slopes of hills along the southern border of the study area has receded. In group discussions, this was attributed to a lack of labor and capital to clear fields.

On the CPA farmland itself, extensification has occurred. Areas that were clearly used for agricultural in 1988 have reverted to thinly wooded areas. The membership of the CPA consistently complained about the lack of equipment, labor, and skills necessary to efficiently utilize the CPA farmland. The mean age

of the respondents on the CPA was 50-59 (nearly 50% of the membership was included in the sample of this CPA). An older population would certainly find it difficult to farm the land without the assistance of younger people.

Of the CPAs in this study, the Muyingiseri Trust is the smallest in area. The Trust lies in the escarpment on the wetter east side near Tzaneen. The land redistributed was a sub-division of a much larger farm. Land use change here could be described as "breathing" (Figure 21). Certain areas on the border between agricultural and wooded areas and between grassland and wooded areas have shifted, but no significant change in any given parcel of land has occurred. The center of the CPA was inundated with water from a small stream during the 2000 floods. The primary land use observed during my visit to the farm in early 2000 was tree crops and some small areas of maize and bean production.

The control farm represents one of the best examples of a typical South African rural farming system. Some of the population still abides closely by the decisions of the chief while there is a considerable part of the population that does not, rather abiding by the Transitional Local Council. Tenure is also fractured between traditional, chief and tribal council - controlled land, land that is controlled by the Transitional Local Council, and freehold land. The latter category represents only a very small fraction of the land authority in the area and is nearer the town of Phokwane than the Platklip farm itself.

Land use change in the area, as on the Muyingiseri Trust, can be described as "breathing". Figure 6 shows that land use has been very stable. Few shifts have occurred and those that have are fluctuations on the border between the areas of cultivation and those of grassland. The only remarkable change has been in some expansion of settlement.

4.5 Social Driving Forces of Land Use Change

4.5.1 Land Use Patterns on the CPAs

The original intention of this research was to document and explain patterns of land use change among farms that had been redistributed from white owners to black associations under the Department of Land Affairs Communal Property Association (CPA) program. The primary change was the transfer of the land from white to African owners and as such, it was expected that production would intensify due to pressure from the membership for access to the land. In all but one of the CPAs, agricultural production was reported to be less than before the transfer. The reasons ranged from lack of membership commitment to unclear division of authority between the chief and the CPA chairperson. The smallest CPA, in fact, was the *most productive*. CPAs range is size of membership based on the price of the farm the committee wishes to purchase. The larger and/or more potentially productive the farm, the more expensive it becomes. As a result, more individuals are needed to pool their grants to purchase the farm.

The Mahlambandlovu CPA has a membership of 396. The farm was used to raise approximately 500 cattle and 200 chickens. No farming had been undertaken.

At Monyamane CPA, the land was used for farming and herding. This CPA, however, suffered from conflicts between the committee of the CPA and the traditional chief. The chief, for instance, led a meeting with the community to discuss my work on land use and livelihoods on CPAs. Normally, the chairperson of the committee would fill this role. It is the chief, not the chairperson, who makes land use decisions. As evidenced from this CPA, community level politics factor strongly in land use decisions. This represents one of the most pressing problems in rural South Africa -overlapping claims to community authority. When explaining community level forces of land use change, it is impossible to make clear statements on the role of community authorities, as they themselves are overlapping and often in conflict.

The smallest (and most productive) CPA visited had a membership of 40. This CPA, near Potgietersrus, had a small irrigation system and raised corn, beans, and melons. A higher proportion of farm members was regularly present on the farm. The chairperson of the CPA reported that he had fewer problems in getting the membership to participate in farm activities than did the chairpersons of the larger farms.

In fact, I was unable to examine the social "driving" forces of land use change on the CPAs themselves due to the fact that very little or no change had

occurred on these lands. No change means no driving forces. However, it also means that there are forces *hindering* land use change. These forces will be discussed in detail in Chapter Six.

4.5.2 Land Use Patterns on the Control Farm

The Platklip control farm allowed for testing of hypotheses regarding the role of traditional authority on land use and allocation. The Communal Property Associations have an elected chairperson and committee rather than a chief. As a result, CPAs tend toward greater democracy than under a traditional authority, although the chieftancy should not be viewed as exclusively anti-democratic.

When queried, only 49% of respondents said that their chief instructed them on where to farm. The traditional authority controls fewer land use and occupation decisions than expected. The overwhelming majority of respondents noted that they have always farmed the same fields (93%) and 39% have at some point let their land go fallow. The amount of land a household controls has been stable in the period since 1990 as evidenced by the fact that 86% of participants have neither gained nor lost land to others.

4.5.3 Perceptions of Change

Participants' perceptions of land use are rooted in a more complex system of societal and tenure arrangements. Lindblade (p.32 of this document) highlighted the importance of perceptions in land use change. Members of the

Community Property Associations differed slightly from participants on the control farm. When queried if farming (for one's own consumption and trade) was still important to them, 91% of CPA participants and 92% of the control group responded positively. However, far fewer (49%-CPA; 21%-Control Farm) agreed with the statement "do you think that even if people can't farm or don't have the money to farm that they should still have access to land". The primary reason for the strong disagreement with this statement among both groups was that those without money would have a difficult time raising the necessary capital to undertake farming. Simply possessing of land does not explain the widespread push for land reform and can be ruled out as a possible social driving force. I distinguish here between land hunger as the desire for land regardless of what is the intended use and land hunger that assumes active use of the land. It would be logical to expect that communities feel their land should be returned to them regardless of how they would or would not use it since it was alienated from them (often brutally) under apartheid. However, these communities view land as a productive asset *first* and a social asset *second.* Simply put, land must be used. The social value of land (our ancestors lived here, we have relatives buried here) has been subsumed by the production ethic. Under apartheid, subsistence farmers were often viewed as unproductive and inefficient, therefore, many rural people still fear that "unused" land might be taken from them. The difference between the two groups stems from the fact

that many of the CPA members have experienced acute landlessness and are more willing to grant access to those in need.

The importance of land for food production is highlighted by the fact that the majority of respondents in both groups noted that the *primary* reason they farm is to grow food for their own consumption (65%-CPA; 71%- Control Farm). Farming for income generation was a distant second (26%-CPA; 28%-Control Farm). Thus, subsistence farming can be considered a social driving force.

Heritage and lineage are strong societal forces in African society. When queried, the overwhelming majority of participants responded positively to the statements "do you think it is important to farm because your ancestors farmed" (95%-CPA; 98%-Control Farm) and "do you think it is important to farm because not many young people are farming anymore" (93%-CPA; 98%-Control Farm). These strong *cultural* perceptions are likely drivers of change.

Researchers often note that apartheid skewed the system of land distribution, leaving Africans landless and unable to farm (Smith, 1990). Accordingly, the majority of respondents agreed with the statement "do you think it is important to farm because the land was taken from people under apartheid and it is now their right to farm" (90%-CPA; 97%-Control Farm). The return of land alienated under apartheid also drives change. People all over the province wait for their land and plan how they will make use of it.

4.6 Summary

The data needed to tell the story of CPAs in the Northern Province has been presented in this chapter. I have shown that demographically the sample population included in the interview schedule was similar to that in the official census. Marital status, income, age, and gender in the study population were found to be typical of the province. High levels of labor migration were found.

The majority of respondents farm, but it was not found to be as important to income generation as other activities. Just under half of CPA members have experienced food shortages, but report this happening less since they joined the association. However, they are more dependent on shops, indicating that shop-bought food has become a more important coping mechanism. In contrast, only 20% of inhabitants of the control farm reported a food insecure situation since 1980, and in this respect, are better off than their counterparts on the CPAs. The level of dependence on shop-bought food as a coping strategy is exceptionally high (54%) and households in this study are considered to be structurally dependent on shops. CPA members have a broader suite of coping mechanisms than do their counterparts on the control farm. Other coping mechanisms are similar to those found in the literature, but much fewer in number and scope to the point that serious concerns are raised over the ability of households to cope in extreme situations.

CPA members have a broader income strategy than inhabitants of the control farm. The majority perceives no change in their income as compared to the period before joining the CPA.A remarkable dependence on entitlements was found on the control farm while CPA members are actively engaged in petty commodity trade.

Far fewer people on the control farm raise cattle than do CPA members, largely do to differential access to land. Land use authority on the control farm is typical of rural South Africa with half subscribing to the chief for instructions and the other half looking elsewhere for instructions on land use including themselves and the local authorities. Land use change was minimal on the CPA farms themselves, but change was occurring in the areas where association members reside just outside the officially transferred farmland. Land use change was negligible on the control farm, representing a stable farming system (corroborated by fewer incidents of food shortage among residents).

Regarding the management of the CPAs, general disorganization prevails on the majority of CPAs. They are generally under or improperly capitalized, suffer from a lack of skilled farmers, do not obtain adequate extension, and membership participation is abysmal, at best.

Women are far more likely to be poor than men and are more willing to plant crops other than maize than men. Accordingly, men were more likely than women to report that farming income gave them most or some of their income. Given that maize is also a primary cash-earning crop, this is not surprising.

Joining the CPA increased men's ability to sell crops, while the opposite was true for women. Women were nearly twice as reliant on entitlements than men. Given the labor migration pattern this is expected. Women had a far more difficult time accessing credit than men, leading to higher incidents of poverty.

These findings will be utilized in the next chapter to address the research questions and in Chapter Six to tell the story, albeit critically, of the CPA land reform program and its impacts on livelihood and land use change. I will address issues raised at the end of the review of the literature and challenge policy-makers on received wisdom regarding land reform and rural political economy in South Africa.

Chapter Five

Discussion and Synthesis

5.1 Introduction

I ended the review of the literature with three research questions that I will now take up having addressed the data in the last chapter. I asked specifically: how do livelihood systems respond to a land reform change, such as those affected in the Northern Province by the national government? In short, is there any evidence that land reform in the Northern Province has resulted in more secure livelihoods? Second, are the social driving forces of land use change clearly evident in the satellite imagery? Third, did land reform in South Africa result in the intended land use change? The goal of this chapter is to specifically address the research questions posed on page 67. In the next chapter, I weave together the findings presented here and the literature to construct a narrative on land and livelihoods.

I will begin by examining the statistical evidence in order to judge the impact of land reform on livelihoods and land use change. I will then address the issue of efficacy in satellite-assisted interpretation of land cover change and determine the degree to which relationships can be gleaned from the imagery in dryland areas. Finally, I will challenge the general assumptions laid down by

South African policy makers regarding the intended effects of land reform versus reality.

Data analysis provided findings on three general fronts: 1) statistical findings derived from the interview data; 2) spatial findings derived from the satellite and GIS data; 3) and findings derived from qualitative interview. The challenge of this chapter is to weave the findings of these three analyses together in order to provide a meaningful story. Rather than provide a "cut-and-dry" prove/disprove or support/reject discussion, I prefer here to tell the story of land use change, land reform, and livelihood systems, using the evidence presented in the last chapter to support the main themes.

What, then, are the main findings? The data analysis of livelihood systems showed:

- A relatively representative sample population (income, age, gender, marital status)
- High levels of labor migration (34%), but not as high as in other areas of South Africa.
- Most respondents farm, but derive little income from it, even though male CPA members sell more crops than before joining the association.
- Just under half of CPA members have experienced food shortages, but report this happening less since they joined the association. However, they are more dependent on shops, indicating that shop-bought food has become a more important coping mechanism.

- Only 20% of inhabitants of the control farm reported a food insecure situation since 1980, and in this respect, are better off than their counterparts on the CPAs where a similar percentage of respondents in a much shorter period (since 1996).
- The level of dependence on shop-bought food as a coping strategy is exceptionally high (54%) and households in this study are considered to be *structurally dependent* on shops. CPA members have a broader suite of coping mechanisms than do their counterparts on the control farm.
- Other coping mechanisms are similar to those found in the literature, but much fewer in number and more limited in scope to the point that serious concerns are raised over the ability of households to cope in extreme situations.
- CPA members have a broader income strategy than inhabitants of the control farm. The majority perceives no change in their income as compared to the period before joining the CPA.
- A remarkable dependence on entitlements was found on the control farm while CPA members are actively engaged in petty commodity trade.
- Far fewer people on the control farm raise cattle than do CPA members, largely due to differential access to suitable grazing land.
- Land use authority on the control farm is typical of rural South Africa with half of the population subscribing chiefly authority while the other

half adhere to other sources of authority including themselves and the local state agents.

- Land use change was minimal on the CPA farms themselves, but change was occurring in the areas where association members reside just outside the officially transferred farmland.
- Land use change was negligible on the control farm, representing a stable farming system (corroborated by fewer incidents of food shortage among residents).
- General disorganization prevails on the majority of CPAs.
- CPAs are generally under or improperly capitalized, suffer from a lack of skilled farmers, do not obtain adequate extension, and membership participation is poor, at best.
- Women are far more likely to be poor than are men.
- Women are more willing to plant crops other than maize than are men. Accordingly, men were more likely than women to report that farming gave them most or some of their income. Given that maize is also a primary cash-earning crop, this is not surprising.
- Joining the CPA increased men's ability to sell crops, while the opposite was true for women.
- Women were nearly twice as reliant on entitlements than men. Given the labor migration pattern this is expected.
- Men have far more access to credit.

Significant relationships were presented in the last chapter. What do these relationships mean? Given that the statistic used does not indicate directionality, I will interpret the relationships based on qualitative data and descriptive statistics. Table Six on page 90 summarizes the main relationships.

First, gender influenced several variables. Age and gender were related largely because the population is generally older, but older women were even more pronounced than one would expect in a random sample of the total rural population. The principal of self-selection of CPA members and the clear state directives at gender equity explain this relationship. Older women stated that they "had more time" to participate in such activity. Age and income are related and a review of the descriptive statistics indicated that the direction of the relationship is expected. Older participants have fewer income options and tend to be poorer.

Food security since joining the CPA [CHGCPA] was shown to be related to gender. In the summary of findings I noted that men were more able to sell their crops than women do since joining the CPA but had a narrower range of crops that they farmed. Male reliance on a single crop, maize, has restricted the options they may pursue to strengthen their food security. Thus it is not surprising to see the relationship. In this instance I suggest that the relationship reflects the fact that men are more likely than women to rely on shops. Women, by widening their crop options, are less likely to have to sell maize to the shops for milling, for instance. In times of maize failure, women have other crops on

which they can rely. This is corroborated by the statistical relationship between gender and change in the amount of crops sold since joining the CPA [CRPSELL]. Here the explanation lies in the fact that men sell their crops more often than women do since joining the CPA. Further corroboration comes from the fact that a statistical relationship exists between instances of food shortage [EXPSOME] and gender. Women reported experiencing more food shortages than men did. However, this is understandable because men's ability to procure food at the shops is related to their differential access to credit. In short, due to the structural dependence of rural households on shop-bought food, women's broader cropping options do not ensure their food security. Food security is ensured not by the range of crops farmed rather it is access to credit at shops that provides security.

Statistical relationships of variables to age showed that older people tended to be poorer on the control farm. Most elderly people rely on pensions as their main source of income on the control farm and tend to rely on hired labor for assistance in farming. Neither of these relationships are surprising or lend much explanatory power to the analysis of farming systems but rather confirm that the control farm is similar in these respects to other areas in rural South Africa.

Income had the fewest *statistical* relationships in the data set. Relationships were found only between income and age, income and the hiring of labor [LABOR2], and income and time spent on various income generating activities [MOST]. As noted above older people tend to be poorer, and those with more

income at their disposal are more likely to hire laborers. Income is affected by activities an individual pursues in order to garner an income. In this instance, it is hypothesized that poorer individuals will rely on entitlements while wealthier ones may pursue agriculture or be involved in paid labor.

5.2 Evaluation of the Impacts of CPAs on Member's Livelihoods

One of the key research questions centers on the effect of a land reform event on livelihoods and land use change. Did the introduction of the Communal Property Association land reform alter, stabilize, strengthen, weaken, or have no effect on livelihood systems and changes in land use?

Some differences were found between CPAs and the control farm (see Table 8, page 104). To simplify this discussion I refer to "place" meaning whether a respondent was a member of the CPA or the Control Farm. Age was shown to have a relationship to place. This is largely due to the fact that people were more clustered into fewer of the age cohorts on the control farm. Coping mechanisms are also related to place. On the control farm, coping mechanisms are focused on those that in some way relate to shop-bought food, such as saving money to buy food in shops, or purchasing food on credit from shops. CPA members generally have a broader suite of responses to food shortages, such as relying on neighbors and seeking income from petty commodity trade. Members of the CPAs have experienced more shortages since joining the CPA, thus would have developed

more coping mechanisms than people on the control farm who have experienced fewer shortages.

Farming is more prevalent on the control farm than at CPAs ([PLACE] vs. [FARM]). This is not surprising given findings mentioned above regarding the broader suite of income strategies pursued by members of CPAs and the clear lack of land use change. Interestingly, the level of income is related to place. However, no clear indication of directionality is indicated in the data. It would appear that CPAs have a more even distribution of incomes while on the control farm incomes clustered around the levels <R100 a month and R400-600 a month. A significant number of unemployed persons were found on the CPA. This 'downward' skew of the income on CPAs could also be leading to the relationship. The data does not clearly indicate that one group of people is more or less wealthy than the other, but rather that income distribution among participants is more even in the CPAs than on the control farm. There are far more poor people on CPAs. This last statement should not be thought of as causal. Membership in a CPA does not *cause* poverty, rather it is more likely that it simply reflects the constituency base. CPAs have self-selecting membership based on the once-off R15000 social grant. More poor people are likely to band together to purchase a farm than are wealthy people. Wealthy people in most cases have other, non-farm, sources of income that they view as more profitable, therefore will not join CPAs in large numbers. Lack of return to the investment of time and money can also dampen income levels.

The data suggests a small degree of improvement in livelihoods after joining the CPA, but the benefit accrued to men disproportionately. This is quite striking as CPAs were purposely designed with gender equity in mind. No significant positive change was detected in income or the mix of income generating activities. Men showed less likelihood to experience food shortages than prior to joining the association. Income strategies are more diverse among CPA members than on the control farm, but participation in the CPA is not clearly the cause. It must be remembered here that the CPAs are nearer the larger cities of the province that may provide members with other income generating activities. In fact among CPA participants one of the key income activities was petty commodity trade, which is much more possible near large population than in "deep" rural areas such as the control farm.

As indicated in other studies, the range of coping mechanisms to food shortages is limited. The dependence on shop-bought food is so high as to strongly suggest that rural Africans are *structurally* dependent on shops for their food. This structural dependence can be directly attributed to the apartheid state's social engineering that sought to create cheap rural labor pools. Further, rural blacks' lifeline could be immediately disrupted in the event of rural mass action. A rural African farming class could threaten both the state's interests in maintaining order and capital's interests in maintaining a labor pool dependent on wage labor. The two are not unrelated. Capital and the apartheid state worked hand-in-hand to produce just such conditions. In fact, without a

structural dependence on shops, rural Africans would not need to engage in the labor market to the same degree and wages would necessarily rise. Ensuring African dependence on shop-bought food guaranteed their participation in the cash-labor economy.

The evidence regarding the impact of Communal Property Associations on the livelihoods of its members is that the programs tend to broaden coping mechanisms to food shortages and *have begun* to lead to broader income strategies. Based on the literature, it is also highly likely that the central government has ended the program (and support to it) too early. I have found no clear and decisive evidence to conclude that the CPA program has yet been a successful transforming mechanism in rural South Africa, however, long-term trends have had insufficient time to materialize. The CPAs included in this study have not yet contributed to members' livelihoods in a manner significant to render them thus far successful. Members expend time, money, and energy and receive very little in return. Agricultural transformation leading to rural poverty alleviation envisioned by the planners of post-apartheid South Africa have simply not produced results. In frustration the central government has abandoned rather than reorganized the CPA program.

5.3 Analysis of Satellite Imagery

Research question two will be addressed in this section: 1) How well did change show up in the image versus what was told by the interviewed, and 2) Are there patterns that emerged in the imagery across CPAs that could be related to social process?

5.3.1 Verifying the Interviews

On the first question, the answers provided by interviewees and the findings derived from satellite imagery analysis were the same. On all of the CPAs, members were clear that little change had happened on the redistributed lands. An apparent conversion from farmland to grazing land on the control farm indicated on the survey instrument was identified as erroneous by the imagery and was clarified with follow-up questions. What is important here is that the analysis of satellite imagery helped to illustrate certain phenomena and evoke questions on others. The best example of this was the farmland to grazing land discrepancy on the control farm. The interview data would never have been clarified had it not been for the imagery telling a different story. The large degree of change indicated by the participants was not corroborated by the imagery. The question asked was "have you ever grazed cattle on land that you used to farm". The intention of this question was to query for land use conversion. The meaning

of the question translated but the lack of a time qualifier led respondents to answer "yes". When crops were harvested cattle were often allowed to graze the stubble. The expected drastic change in land use did not appear on the imagery leading to a re-evaluation of the question and follow-up group discussions.

The imagery was also useful in identifying changes that respondents were unable to recall or of which they had no knowledge. By showing the imagery to key informants, persons with the necessary knowledge could be contacted. The imagery helped people understand the spatial extent of their land and relate their farms to surrounding areas. The imagery also helped verify conflicting claims to land use changes. When respondents disagreed over the scope or spatiality of change, images could be shown to them and an agreement over change could be established.

5.3.2 "People and Pixels" or "People or Pixels"?

Discerning social process from satellite images of vegetative cover is fraught with difficulties. Alienating a specific landscape change and relating it to social change in reliable and reproducible ways presents a formidable challenge. With these cautions, however, some general statements can be made regarding land use change and social process in this study. Attempting to model change in this study, given the context, would be erroneous, as the events leading to (a lack of) change on CPAs is known - an unsuccessful land reform event occurred. Modeling is necessary only in instances where information is incomplete and

general observations must be drawn from a small sample area and projected onto a larger spatial scale. This is not necessary in the Northern Province, as we know how and why change has failed to occur on CPAs. Where modeling might be useful is in the identification of possible land use changes on non-state sponsored land transfers, such as land invasions or private market transactions. Land use change in these instances are not well documented and in the case of land invasions, rarely documented at all. Further, it has been shown here that the real impact of land reform on land use change is in areas surrounding CPAs where the membership resides.

Identifying the social driving forces of land use change, particularly changes that occur when land is transferred from white to black ownership, requires a temporal analysis that includes a pre-1994 scene and the most current scene available and basic information on the population structure and political-geographic setting.

Once the basic information has been gathered some hypotheses can be made as to where change would most likely be occurring. These findings apply not only to transferred lands, but also to land use change in general.

1. Border areas of the former homelands were observed to be more likely to experience change. All of the CPAs in this study were formerly white areas near former homeland borders. Monyamane and Mahlambandlovu were adjacent to the actual border between the Transvaal and Lebowa homeland.

2. Change from white to African land derived from analysis of the CPA lands can be evidenced by extensification. Structural impediments have prevented intensive use of transferred lands.
3. Areas with pronounced expansion of rural townships tend to produce a land use change nearby. The driving force of change in this case is the expansion of the township or in the case of CPAs the transfer of ownership precipitated the settlement change. Further investigation will need to be conducted on the ground to determine causality.

Social driving forces derived from the survey instrument were discussed in the previous chapter, but how well can social process be determined from an image? A one-to-one correspondence was impossible to achieve, but I observed several trends regarding social process and images. First, white farmers and African farmers leave very different spatial footprints on the landscape. White farmers almost always plant their fields in large rectilinear blocks, either rectangles or squares. Circles are a relic of center pivot irrigation systems. This pattern is similar to farming patterns in both Europe and North America as white South African farmers imported both technology and farming practices from the north. African farmers, however, rarely plant their field in large or rectilinear blocks and have had very little access to center-pivot irrigation systems due to their prohibitive cost. African cropland is fragmented into very small parcels, usually following contours, and often near rural settlements.

Given these patterns, one can infer several social driving forces based on observed change. At this stage I am unable to provide empirical justifications for these inferences beyond what was observed in the areas immediately outside the CPAs. I was unable to pursue specific tests on these social driving forces and can only relate the general trends I observed while in close contact with these areas. I observed the following: 1) economic pressure is leading many white farmers to sell or subdivide their farms; 2) a change from clear rectilinear and crop circles to an African-style pattern indicates social change, possibly land transfer; and 3) areas where African farmland has been abandoned or extensified results from out-migration leading to a lack of labor to farm, as shown in the Rondebosch CPA example.

5.4 Summary

I have presented the findings of this study in this chapter related to the specific research questions. I have shown that for the first research question - how have livelihoods responded to land reform - the answer to be "less than expected" (by both my own hypotheses and by policy-makers in Pretoria). I demonstrated that although less than expected, livelihood changes were differentiated by gender and income strategies were broader on the CPA than on the control farm. The range of coping mechanisms to food shortages appeared to be somewhat broadened by participation in the CPA, however, members of the

CPA remained structurally dependent on store-bought food (and subsequently shop credit).

The second research question focused on the social driving forces of land use change derived from analysis of satellite remote sensing. I specifically sought to utilize the imagery to produce direct statements on social driving forces, but was unable to make a one-to-one correspondence between a land cover change, the underlying land use change, and the social force driving the change. I was able to make broader statements on forces driving land use change, but could not produce an empirically based validation of such statements.

In the next chapter I address the third research question. I construct a narrative describing the intersection of the various forces that have contributed to the unfinished nature of transformation on the Communal Property Associations.

Chapter Six

Narrative: The Unfinished Transformation- Impediments to Livelihood Enhancement and Land Use Change

6.1 Introduction

The story of how livelihoods, land use change, and land reform intersected on the Communal Property Associations will be told in this chapter. The goal here is to integrate the themes raised in the review of literature and the findings presented in the last chapter to understand how such an intersection created the current socio-economic circumstances on the CPAs. This chapter, then, will both contextualize the findings and situate the research in the broader literature, drawing together the multiple explanations for the unfinished transformation into one narrative.

The CPA program was designed to empower rural historically disadvantaged Africans to run productive farms that would strengthen members' livelihoods by changing land uses. The transfer of land was the first step in the empowerment process. However, it was not meant to be the last. The analysis of land cover and use change showed that the actual farmland transferred has undergone few changes to a more productive state. In fact, simultaneous intensification and extensification is occurring in the study areas,

intensification off the transferred land and extensification on the transferred land. At Mahlambandlovu, Monyamane, Muyingiseri, and Rondebosch CPAs no actual crop farming has occurred. Baroka CPA, the smallest, is the exception. Land is being used as productively as under the former white owner. In areas outside the CPAs, where the bulk of the membership lives, land use and cover changes are widespread. Land uses are increasingly being converted from agricultural to residential uses and areas that were formerly farmland are becoming grasslands. I will first present the evidence that leads me to conclude that the CPAs have failed to make significant progress. I will then present the six primary reasons for the lack of progress with empirical support drawn from the livelihoods and resettlement literature. This section is devoted to analysis at the household/farm scale. Next, I will show that the evidence obtained from the CPAs represents short-term trends rather than transitions or long-term trends. Explanations for the lack of progress will be placed in a regional context followed by a general assessment of the successes of and challenges to land reform in South Africa.

In order to justify a judgement on the progress of CPAs, I address here the question - are the CPAs at the point of development or maturation we would expect them to be compared to case studies from the literature? Although in existence for between four and six years, the CPAs in this study appear *to have stalled in the initial phase.* When comparing the available evidence from the literature from the evidence garnered from the CPAs, one would have expected

much more change to take place. This expectation is supported in the literature from the following evidence.

First, the livelihoods of CPA members have not enjoyed significant enhancement. The most relevant literature reviews *resettlement.* In these instances a dramatic change occurs, participants are both physically moved to a new and often unfamiliar area and livelihoods are completely uprooted. In most cases, livelihoods recover and transition ends from two to seven years after the initial change. However, this study examines change *where no resettlement has occurred.* Projects were undertaken near the residences of the beneficiaries. Participants *did not have to abandon their former livelihoods.* The cooperatives literature, however, describe projects that were much more similar to the CPAs but had very little actual assessment of the impact of cooperatives on *livelihood systems.* While lessons learned from cooperatives could be applied to the structure of the CPAs, very little could be said about livelihoods.

Thus the CPA could be thought of as a livelihood-enhancing strategy, or alternately as an additional choice from the already broad array of options which participants could select to purse a livelihood (e.g. petty commodity trade, migration, formal or informal employment). Thus, the options that provided the least enhancement to their livelihoods would eventually be excluded, in effect, a livelihood maximizing exercise. The early exit of many CPA participants showed that they felt the advantage of participating in the CPA to their livelihood system was *significantly less than their other livelihood options.* The process of livelihood

transformation has stalled. Members' livelihoods are not being transformed in ways that ensure active membership participation and reproduction of the CPA.

Second, no empirical evidence of intensifying land use on the redistributed land comprising *any* of the CPAs is evident. If land use change were occurring that indicated a shift to more productive use of the transferred lands that would equate to income generation for CPA members, I could argue that success might be forthcoming. However, in the absence of such evidence it is difficult, at least, to argue that the CPAs have affected changes in land use in a way that contributes to current livelihoods or that in some way may provide future benefits. The empirical evidence, derived both from interview schedules and the satellite analysis, simply does not support such a claim.

Third, if the South African government were undertaking observable and empirically identifiable rural economic reform that would create a supportive environment for such projects, where members would realize the ability to secure labor, capital, and a market for their goods, I would be justified in arguing that the trend on CPAs is not of stagnation but of transformation. Again the empirical evidence does not lend credence to such a statement. Transformation in rural South Africa is has been slow and uneven and the CPAs in the Northern Province are no exception.

6.2 Impediments at the Household and Farm Scale

What has caused the under-utilization of CPA land and the failure to deliver livelihood improvement? Across the CPAs members point to several common issues that cause this lack of activity. The findings of this study are remarkably similar to several studies that focused on the impacts of resettlement and the results of cooperative agricultural projects. As detailed in the Review of the Literature, the themes from those studies are replicated here and include: difficulty managing land, rapid social change, lack of a reliable relationship with government officials, overlapping claims to local authority, and lack of labor due to out-migration (Oyedipe, 1983; Diaw, 1990; Pankhurst, 1992; Voh, 1980; Koenig, 1987; Cernea and Guggenheim, 1993; and Colson, 1971). These issues cut across scales and are discussed below in a household / farm project context. It is important to note here that the agency charged with land reform has, itself, identified many of the same hindrances I detail below, including "[problems with] inputs and services, financial issues, and infrastructural issues" (DLA, 1999,21). Zimmerman (2000), although without empirical observations, argued many of the same points when detailing the barriers to participation of the poor. He noted the barriers as a high level of risk, high up-front costs, lack of skills and education, the lack of rural services such as water, and the difficulties of moving over long distances (Zimmerman, 2000, p.1455).

Reason 1: General Disorganization (Social Disruption)

First and foremost, members feel unprepared to organize, maintain, and develop their CPA as an *economic unit*. The farm as unit of production has failed to materialize largely due to a lack of managerial skills. The membership and leadership of CPAs were not chosen specifically for their expertise in farming, and many simply lack the necessary skills to run a farm as a business. Training on all farms was reported to be minimal. In the case of the Baroka CPA the membership has benefited from the fact that the chairperson was trained at an agricultural technikon in the Eastern Cape. The other CPAs have not been as fortunate.

Members of the all of the CPAs recognized at least some degree of post-transfer government support, however, the support programs did not provide the skills necessary to maintain long-term production. The members of individual CPAs must also bear responsibility for the general disorganization. Membership participation is weak at best. For instance, two work-days were scheduled at the Mahlambandlovu CPA that I attended for purposes of observation. Of the 396 members barely eighty showed up on the first occasion and only fifty attended on the second. The secretary allowed me to peruse her records and she noted that members were also required to make cash contributions. Her records indicated large numbers of people who had neither

attended nor contributed. She explained that upon inception of the CPA many people believed that the government was "coming to hand out cash". Expecting some sort of direct transfer, many people signed up for the CPA "and had no idea what they were really doing"[iv]. After the first two years, they saw no return to their participation and abandoned the CPA.

Members of the Monyamane CPA's agricultural production committee reported widespread failure to participate in even basic CPA functions. The low level of participation was discussed at several informal meetings. When queried about lack of participation members responded with a range of reasons from "we are very old and cannot work well" to "no-one shows up and then we must do all the work" to issues regarding lack of transportation, failure for their concerns to be addressed, and general apathy. Most telling is that on one CPA a number of members that were so completely disgusted that they requested a secretary accompanying me on a visit to "strike their names" from the membership list. Many issues regarding the issues of poor attendance and poor organization are in large part due to the age structure of members and members perception that the CPA has become "a waste of time".

The literature on cooperatives supports these findings regarding the lack of membership participation as a key obstacle. Kimario (1992) noted that a lack of support from members was a fundamental problem in Tanzanian cooperatives. Adeyeye (1991) found similar problems in Nigeria as did Bager (1980) on Kenyan cooperatives.

Diaw (1990), Oyedipe (1983), Voh (1980), and Colson (1971) all found a high degree of social disruption and general disorganization after resettlement. Long-standing social roles change dramatically and power is not always concentrated in the same hands after the transition. In fact, Pankhurst found that "former wealth was not always a means to success" (Pankhurst, 1992, 156). In the change to new production arrangements, such as the introduction of a CPA, new rural elites emerge and old ones are swept away. The unpredictable nature of such transitions leave people vulnerable and often unwilling to contribute to a project that may or may not benefit them. As Cernea and Guggenheim (1993) found new social factions form and others fade away (241). These factions do not always cooperate with each other, leading to schisms and disorganization.

Reason Two: Too Many People (Farm Size)

Farm size is a focal point of much of the agricultural economics and alternative development literature. Traditionally, agricultural economists argued that larger farms create a more favorable economy of scale, are more efficient and profitable, and stimulate rural development. This accepted knowledge shifted as noted by Staatz and Eicher:

> Empirical evidence from the late 1960s and early 1970s revealed that the economies of size in tropical agriculture were more limited than had been previously believed and that small farms often achieved greater output *and* employment per hectare than did large-scale farming (19).

Binswanger and Elgin recount the main reason for this advantage- the use of less hired labor on small farms. Small farms use less hired and more familial labor, the latter being more efficient and cheaper. Further, family members share the risks (318). Many of the perceived advantages and economies of scale of large farms were shown either not to be necessarily beneficial or largely inconsequential on small farms. Regarding mechanization, larger farms maintain an advantage in that "average costs decrease as the size of holding increase" (319), however "small owners can rent out their land rather than sell it -and still keep the advantage of owning land to raise credit" (319). Binswanger and Elgin maintain that ownership can be independent from operation - small farmers can join together to match the economy of scale of large farms, thus, reducing mechanization inefficiencies.

Large farms have traditionally been considered advantageous in terms of technology and management as well. The authors argue here that:

> Some management skills can be rented. If technology becomes too complex, farmers can hire private extension officers by the hour or the day to advise them...another solution to the management problem is contract farming, where large firms provide technical advice, finance, and marketing service to small farmers (321).

Van Zyl contextualizes the debate for South Africa emphasizing two points:

1) the productivity differential favoring small farms over large farms increases with the differences in size, implying that it is largest where inequalities are the greatest, and

2) the highest output per unit areas is often not achieved by the smallest farm size category, but by the second smallest...suggesting that the smallest farms may be the most severely credit constrained (266).

The author reinforces these statements with empirical evidence showing small-scale black agriculture out-performing large agriculture in South Africa. The evidence points to the fact that "small farmers may use land much more intensively than do large farmers" (274).

Regarding this study, the question arises - Are the large CPAs too large? The findings of this study show that very little intensive use of the land could be found on any *but* the smallest CPA. The above literature can inform this study as large white-owned farms were transferred to large groups of blacks. Farm size did not decrease, and in the case of Mahlambandlovu and Monyamane CPAs it actually increased. Van Zyl (1996) showed the inefficiency of large white-owned farms in South Africa. Transferring these farms to large groups of blacks does not abrogate the farm size problem.

What, then, are the specific problems facing the large CPAs? First, any decision that must be undertaken on the CPA must consider a large number of members with widely differing opinions. For instance a land use change that might result in increased crop production would require the consultation of a large group of people, some of whom want to plant maize while other want to raise more cattle. How can a coordinating committee take into account the land needs of 396 different members on a 2159 ha farm? The solution under the CPA

programs is the central committee would decide on land use approved by the members. However, members who, for instance, do not have cattle have no incentive to participate. If a group of older women wish to plant tree crops but are outvoted by men who want to plant maize, the women will (and have) simply stop taking an active role.

Second, simple tasks, such a communicating a meeting, become administratively difficult and complex when membership numbers rise into the hundreds. The secretary of one of the CPAs illustrated several communication problems the committee faced due to the large membership number. Announcing and garnering participation at crucial meetings is almost impossible. The telephone is almost completely absent from the homes of members. To communicate a forthcoming meeting the secretary must either travel to all the population centers or must rely on word-of-mouth.

Third, the constitution of the CPA requires distribution of the profits among *all* members. However, profits are not always realized. When cattle, for instance, are sold, most of the income goes to inputs and running costs leaving very little profit. Difficulties arise over how the small profit will be distributed. Many members argued that profits should accrue only to those *active* participants. According the CPA constitutions it cannot. That in itself is a lethal disincentive to *any activity at all.* In practice, however, those that contribute are those that reap the rewards.

Reason Three: Lack of Labor and Skills

Out-migration is widespread in all of South Africa's former homeland areas. May (1996) refers to statistics which show the largest source of income in rural areas of KwaZulu-Natal derived from wage labor or remittances from wage labor (in Lipton, *et al.*, p.21, 1996). While acknowledging that other sources of income are important, such as agriculture and petty commodification, clear emphasis is placed on the role of labor migration. May notes that "migration for employment remains an important aspect of many rural people's lives, as does the reliance of rural households on a share of the migrant's income in the form of a remittance " (May, 1996,p.14).

In the Northern Province, Baber (1996) found in a sample of two villages that nearly 70% of households "include at least one migrant" (280). He maintains that these migrants represent a valuable pool of largely inaccessible labor and skills- inaccessible, that is, in the rural areas. Kirsten (1996) and Ngqaleni and Makhura (1996) present similar pictures of labor and skills loss due to migration. Low (1986) interprets the impacts of migration on the household:

> We have seen that the opportunity for some members to earn relatively high incomes in off-farm employment can result in labour shortages at the farm-household level, which lead to low levels of labour input per hectare (126).

Mini (1994) corroborates the statements of both the above authors and the findings of this study writing "the shortage of labour at critical periods of

peasant farming activities was attributed to the migrant labour system, which deprives these villages of young adult males" (276).

As evidenced in the statistical analyses in this study, many people rely on hired labor to perform even the most basic functions of agrarian production. Labor exchange is not uncommon in other parts of Africa during certain points in the crop cycle. For instance, at planting and harvesting time in sub-Saharan Africa, labor becomes scarce and exchanges of labor become commonplace. The normal shortage periods in rural South Africa are highlighted by the fact that at both the CPA and control farm nearly one-third of households have one or more members involved in the labor market in Gauteng. Many members of the Monyamane and Mahlambandlovu CPA households are involved in the Pietersburg labor market as well. This drain of labor impacts the younger and middle age groups disproportionately. Those people with the most energy to engage in agrarian production are absent.

A common myth throughout South Africa is the belief that "all Africans can farm" or "the blacks can farm" (as evidenced in the qualitative and quantitative interviews undertaken for this study). This racial stereotype ignores the long-term de-skilling of blacks that occurred under apartheid. Farm laborers never received explanation behind the instructions they were given on large white farms. They gained very few skills on white farms least of which was how to *manage* a farm as an *economic unit.* Extension into the former homelands was erratic and poorly coordinated. With large numbers of people, mainly men, off in

Johannesburg, extension was targeted at a very small portion of the remaining *male* population. This is not surprising as homeland resources for such activity was severely limited. It was in the best interests of the apartheid state to keep Africans out of agriculture. Africans able to reproduce their livelihoods based on productive and profitable agrarian systems would necessarily undermine the labor market, a labor market that constantly petitioned the apartheid state to keep wages very low.

Reason Four: Continuing Gender Bias

Gender bias in rural South Africa is manifest as unequal access to land, capital, and social services. The Reconstruction and Development Programme (RSA, 1994) specifically addresses the plight of women:

> Women face specific disabilities in obtaining land. The land redistribution programme must therefore target women. Institutions, practices, and laws that discriminate against women's access to land must be reviewed and brought into line with national policy.

But is gender equity necessary for a CPA to be successful? Gender equity is often advocated on liberationist grounds, i.e. liberating women from the yoke of oppression. Although this is clearly a valid reason to argue for gender equity, might there be other grounds to argue that gender bias in rural South Africa should be eliminated? Ngqualeni and Makhura (1996) show the high degree of female involvement in agriculture (70% of agricultural labor is female) in the Northern Province. Mini (1994) found a similarly high proportion in the Eastern

Cape (75%) and Walker notes that "land represents an opportunity for women to meet a variety of needs, including those which are socially identified as primarily their responsibility" (71). Women's limited access to land in the form of gardens can be a mixed blessing, however. Middleton argues:

> While the cultivation of food crops, particularly vegetables, may feed families and ease the demands on family budgets, this would not be without its contradictions. Firstly, food cultivation food cultivation for subsistence purposes was the responsibility of women. Thus the cultivation of gardens and field would have the effect of increasing the already heavy workload of women. Secondly, food cultivation is physically exacting, time-consuming work...Thirdly the absence of water supplies, farming equipment, and ...other resources could result in food cultivation becoming an additional burden (81).

Reform of policies promoting, directly or indirectly, gender bias and promotion of those that attempt redress would allow women larger participation in agricultural projects. Many women are now tied to subsistence production (vis-à-vis the "garden") and are unable to meaningfully contribute to and reap from the operation of CPAs. Further, their time allocation to subsistence production effectively traps them into poverty. They have very little time to contribute to CPAs (an alternative and additional income generating strategy) and are socially marginalized (through limited access to credit) when they do participate. Men benefit from CPAs precisely because they have been freed from subsistence production. Women have not been able to consolidate enough power within the CPAs (or more accurately their own households) to change this situation. Thus, a highly skilled and agriculturally knowledgeable portion of the

rural population is effectively blocked from or has limited involvement in projects that may stimulate feedbacks in the rural economy. Women's full participation in CPAs would unlock a vast reservoir of knowledge and skills, something sorely lacking in rural areas. Women's limited access to credit, land, and labor is a *hindrance* to rural development, as Mini points out

> the likelihood of the female-headed households improving farm output and farm income is limited, first, by the labour deficiency which tends to limit the size of cultivated areas and secondly by their lack of capital in the form of stock and cash (277).

Gender equity has been a key goal of the land reform program since its inception in 1994 and 1995. This study has shown that fewer benefits have accrued to women. Men still have better access to credit and benefit from their participation in the CPA while women actually suffer. Women were found to be poorer in several respects. In this study three factors were found to contribute to female poverty:

1. A high degree of dependence on insecure entitlements.
2. Unequal division of labor and land use; a division that limits women's flexibility and income options.
3. Unequal access to credit.

Discussions with women were conducted after initial data analysis showed that large numbers of women felt their incomes did not improve, and statistical tests indicated that these feelings were not unfounded. Women generally felt alienated from the core decisions made at the CPA. In two cases, the dominant

activity on the CPA was cattle ranching. Women felt that once the decision had been made to raise cattle, the men gained an "upper-hand" in the administration of the CPA. Anything that was discussed regarding the CPA was always done in the context of the cattle. Many women became angered over the perception that men had so much control over the CPA. They complained that they were not allowed to plant tree crops that would have provided them with an income (women usually sell fruit along side the road in and around Pietersburg and Tzaneen).

Finding continuing gender bias was not unexpected, but it was surprising to find just how disgruntled some women were regarding their involvement in the CPA. According to the provincial administration records female-headed households constituted the following percentages of households on CPAs:

Mahlambandlovu = 41%
Monyamane = 22%
Muyingiseri = 77%
Baroka = 48 %
Rondebosch = 25%

This would appear to give women considerable more input into the running of the organization. It must be noted here that not all women were displeased with their CPA. The most widespread unhappiness was evidenced at Mahlambandlovu CPA. The female members of Baroka CPA were the most pleased with the overall situation. It would be erroneous here to suggest that *all* women or *all* poor women were unhappy across *all* CPAs. Women do not share a unified outlook on their situation or their farms. In this respect, this study

reinforces findings from many prior studies in that women participating in the CPA program are not a homogenous group and as such several separate gender relationships exist. For example, poor women involved in the CPA have different relationships, both with each other and with men, than wealthy women. Poor women often provide the labor to liberate wealthier women to participate in the CPA. Wealthier women were more able to access resources (such as capital and other women's labor) that allowed them to pursue involvement in the CPA. This led wealthier women to a very different relationship with men. Gyllstrom highlighted this problems in his review of Kenyan cooperatives, noting that there was a "bias to advantage the privileged strata of smallholders" (Gyllstrom, 1991, p.273).At Mahlambandlovu CPA, follow-up fieldwork in January 2001 showed that a group of relatively wealthier women had persisted in convincing the governing committee to apply for agricultural training support. These women were able to pursue such an activity due to the fact that they:

1) had money to pay for transportation to and from the farm on a weekly basis;
2) were able to access other's labor (largely familial, but in several cases hired) which allowed them to devote time to the agricultural training sessions;
3) were able to convince several of the men in charge and a voting block of men that they (the women) were already skilled at farming and the men themselves would benefit from output from the CPA farm.

This division of labor empowers certain groups of men and women while simultaneously disenfranchising others. In many cases *poor* men and *poor* women have more in common than do poor *women* and wealthier *women*. Issues of power and class temper gender relations. The central finding in this respect is that it is the range of gender *relations* that is key to understanding differences among and between men and women, rather than gender *roles* and these relations are crucial in understanding the successes and failures of the CPAs. This finding is supported in the literature on gender and development and post-modern assessment of gender. Moser (1993), Young (1993), Joekes, *et.al.* (1996), and Marchand and Parpart (1995) all recognize the importance of examining gender differences.

Reason Five: Improper, Incomplete, or Under-utilized Capital Investment

The problem of under-investment in rural agriculture in South Africa is neither recent nor unnoticed. A large volume of literature attests to the systemic bias against black agriculture (Lipton, 1996; Cross, *et.al.* 1988; deVilliers and Critchley, 1997; van Rooyen, *et.al.* 1998). Golino, *et.al.* (1996) summarizes the situation:

> In the former homeland areas, input supply and credit were mostly non-existent. Where these were provided, it was mostly through parastatal institutions, generally biased against female and small farmers. In addition, a large proportion of agricultural production in these areas came from state farming where input supply was arranged through public sector institutions (501).

The authors remark that successful reform programs will have to integrate strong capital and skills training regimes or else the under-skilled and under-capitalized rural farming class will not be able to effectively utilize transferred lands. Thobane (1997) concurs with this assessment noting that under apartheid:

> Some of the services that were subsidized included irrigation, credit, fertilizers, and marketing. The lion's share of such privileges went to the rich or large-scale [white] farmers partly because they were the biggest producers and partly because they were able to manipulate the bureaucracy and to form alliance with the politically powerful in urban areas (102).

Thobane expresses the problem of service delivery, particularly in that many of the African farmers are "poorly organized and largely inarticulate" (103). He further remarks that lack of capital and skills extension is a primary obstacle blocking rural transformation. The sheer volume of need is scarcely met within the current extension system, he notes, and a realignment of priorities is needed to address the legacy of "separate development", especially in the former homelands.

Members of all of the CPAs complained of lack of capital to undertake farming. They complained that start-up costs, operating costs, and equipment, fertilizer, and marketing tools were not at their disposal. Uniformly across the CPAs, members recognized the need for capital in order to farm for profit. With the exception of the Mahlambandlovu CPA, which was exceedingly well capitalized, the CPAs generally did not have the equipment at hand needed for farming or raising cattle. This is not to suggest that the government had never

capitalized these farms. All the CPAs benefited from some sort of investment, however, in many cases the capital was either not maintained or had been destroyed in some way. A group of women at the Monyamane CPA related the following story regarding their diesel water pump:

> " the men went away to town with the money we had collected for petrol [diesel]. We had taken a long time to get that money. We went to each person's house and explained to them why they must contribute. Many people here are very poor and it was difficult to get money from them, but they gave to us. When the men came back from town they brought with them the very small containers of petrol [gesturing to the small two litre jugs]. They had spent most of the money on beer. They brought back more beer than petrol. We were very angry with them but they told us to go away. Now no-one will contribute. When we ask them [other CPA members] now they tell us to go the shebeen ourselves and leave them alone"[v].

This state of affairs is not exclusive to Monyamane or to the antics of mischievous men. The Rondebosch CPA suffered from the floods that struck northern South Africa from December 2000 to February 2001. Respondents told the story of the loss of one of their most precious capital investments, their water pump:

> "as you can see over there, our water pump has been destroyed by the [Letaba] river. The government helped us put that in and now we have no way of getting water to next years crops. The river has washed away the road and we can't even get over there to fix it"

Members at Mahlambandlovu CPA told a different story of problems with capital, specifically their farming equipment:

> "here we have beautiful implements, in good condition, but we are unable to use them. We have a bakkie [truck] and two tractors with all the

implements. This land that they have given us is unsuitable for farming. We wait for the Bultfontein farm, then we will be able to use these things".

Baroka CPA is the exception to this general story of the improper or undercapitalized CPA. The members had developed a small irrigation system for their fields that worked properly and was the pride of the farm. The farm had a few implements, but most work was conducted manually. Baroka CPA was the only CPA with actual crop production *and* cattle production. The cooperatives literature presents similar findings from case studies across Africa. Several authors noted that cooperatives lacked capital and access to credit, thus stifling their development (Gyllstrom, 1991; Adeyeye, 1991; Kimario, 1992; Holmen, 1990).

Reason Six: Skewed Age Distribution

One of the most common complaints, particularly on the Mahlambandlovu and Rondebosch CPAs and the Platklip Farm was the youth are scarcely around to provide labor. Older respondents on CPAs voiced serious concerns regarding the future of the CPA with so many youth seemingly unconcerned with the projects. The age statistics presented in the last chapter showed that on the CPAs the median age was in the 40-50 age cohort with significant numbers in the 50-60 age cohort. Two official and complete membership lists were obtained that included each member's age. The total number of cases was 512 and the mean age was 46 confirming that the sample data is accurate.

This represents an older population than was expected. The effects of such an age skew on production are far-reaching. Older members were much less able to contribute labor in meaningful ways. Often older men would literally hire a young person to go to "work days" at the Mahlambandlovu CPA so the men's contribution to required labor would not go unfulfilled.

Diaw (1990) writes of a similar situation in Ghana. All of the younger members of the project farm had left and the remaining participants complained that they were too old. The high proportion of older members at CPAs raises further questions regarding future viability. If farms are struggling now, how will they be able to survive in ten years when the bulk of the membership will either be deceased or completely incapable of rendering any service to the association? Unless steps are taken to encourage the participation of younger people the CPAs will face mounting problems and more uncertainty.

6.3 Trends or Transitions?

Given that most of the CPAs have been in existence for less than seven years, are the six points listed above symptomatic of short-term trends, long-term trends, or simply the result of transition? As I demonstrated in the Review of the Literature (see page 62), several authors estimated that resettled communities recovered within one to five years. Given that the development of the CPAs have been slow, but not nearly as traumatic as a resettlement, I am inclined to view the

current situation on the CPAs as symptomatic of short-term trends. I have no empirical evidence to suggest that the findings presented here are long-term patterns. Nor do I have empirical evidence that the transitions are complete. What I have shown is that a transition has occurred and the initial change has been incorporated into the livelihood systems of participants. I have shown that the livelihood systems of respondents from the CPAs are remarkably similar to those in the control group, and that very little evidence exists that livelihoods benefited directly from the introduction of the CPA. However, to project this into the future would be erroneous, locking the CPAs into this given time period of analysis and denying that dynamic changes could occur in five or ten years. What can be said is that given the existing conditions, the processes facilitating livelihood enhancement in the CPA program have stalled.

One finding, however, does have implications for long-term trends. The participants on CPAs were found to be quite old. Very few young people participated actively in the programs. This calls into serious question the ability of the membership to build and develop the CPA into the future. What will happen in ten years when the bulk of the population is simply too old to contribute? The long-term outlook for the CPAs is unclear due to the aged nature of the membership.

The data have demonstrated that after four to six years the potential of the CPAs has not been realized, but does the literature suggest this is unusual? If the

CPA program had been fully supported, what could we have expected to see (versus what we see now)?

First, what are some of the conditions that might ensure success? Findley (1988) sets out the "structural conditions" that led to success in Latin American reform and resettlement programs:

> 1.Appropriate crops were selected, for which demand and marketing facilities existed.
> 2.The cooperative provided an effective organization to facilitate commercialization. In particular, it provided inputs in a timely fashion.
> 3. Credit to settlers was based on potential yields, which enabled settlers to shift from low-return food crops to high-return cash crops.
> 4. Settlers were a fairly homogenous group, drawn predominantly from nearby areas. This resulted in less dislocation and more continuity and cooperation between settlers.
> 5. The project stressed colonist leadership and did not demonstrate paternalism. (p. 301).

She further notes constraints including "attempts to supplement incomes through off-farm work had led to significant decline in production and land of community organization had crippled the potential of the settlement to respond collectively to its problems" (p. 302). These same constraints were found to plague the CPAs investigated in this study. Two complaints among the settlers in Findley's Latin American case study are the exact same the findings of this study, namely " improved access to transportation and credit have been identified repeatedly as critical to the colonists" (p. 306). In order to combat the structural constraints facing the settlers, Findley recommends:

1. improvements in the internal terms of trade
2. improvement in transport services
3. produced-oriented credit
4. adoption of mixed cropping systems
5. generation of off-farm employment [but not in the pioneer phase]; and
6. expanded health and education services (307).

Henriques (1988) reviewed Brazilian settlement schemes and comes to many of the same conclusions as Findley, with similar implications for South Africa. Most notably she shows that "the implementation of a colonization policy has not significantly enhanced people's well being" (338) due to the fact that "credit and technical assistance did not reach more than one-third of the settlers". In the Andean highlands of Peru, Carpio (1988) found that several structural failures inhibited the progress of settlement schemes, specifically the lack of overall organization, credit, and marketing facilities.

Empirical evidence on the progress of the CPAs in South Africa is derived from the Department of Land Affairs 1999 *Annual Quality of Life Report.* This report details the slow pace of progress of the CPAs and notes:

> The data available indicates that beneficiaries still earn their livelihoods from conventional sources, such as pensions, remittances, wages, and to a less extent subsistence agriculture. Land reform projects have not began [sic] to change the livelihood activities of communities (21).

The authors point out that overall progress has been slow and that the changes envisioned have not materialized. They note that some activity has occurred but "there is potential for growth" (21).

Evidence from elsewhere also gives an indication of what could be expected given more facilitating conditions. Initial success was obtained under the Federal Land Development Authority Project in Malaysia started in 1955. Bahrin (1988) shows a steady increase in settler incomes after the fourth year. Initially incomes fell, but by the third year they had surpassed the pre-settlement level. The FELDA resettlement scheme was endowed with significant financial, institutional, and technical resources to carry out its tasks, in fact, far more than South Africa's land reform program. For instance, Bahrin notes the following personnel resources were devoted to each settlement scheme:

1 manager
1 assistant manager
4 field supervisors
8 field assistants
3 settler development assistants
2 clerks
2 secretaries
1 driver
1 office boy
(Bahrin, 1988, p.107)

In addition, applicants to resettle were evaluated to determine their likelihood of success: " the people to be awarded the most points were those who were landless, around 35 years of age, with a large number of dependents, and physically fit" (97). This is in stark contrast to the self-selection method undertaken in South Africa.

Limited progress in projects undertaken to transform rural society (e.g. resettlement, land reform) is a shared problem, however. Other nations have

experienced similar problems regarding the lack of a facilitating environment for change. Chole and Mulat (1988) describing Ethiopian resettlement explained "the settlement programs are too costly and face serious problems of mismanagement and low land and labor productivity. The inability to allow sufficient time to prepare, plan, and implement settlement programs is a cause of waste and high costs" (182).

Somalian resettlement programs ran into similar difficulties. Ragsdale and Ali (1988) cite a program report explaining lack of progress in the Settlement Development Agency / Coastal Development Project :

> Project implementation and evaluation, and particularly annual budgeting, were adversely affected by the lack of documents...and of disciplined recording, reporting, and monitoring procedures... Sub-sectoral programmes appear to lack underlying definition of long range objectives and strategies of the interrelated roles of their projects (SDR 1979c: 106-7 *cited in* Ragsdale and Ali, 1988, p.219).

This literature illustrates some of the factors that both encourage and discourage success in resettlement projects. Primary enabling conditions included access to credit, strong organization, provision of transportation, and technical assistance. The absence of these conditions in one form or another has led to less successful projects.

6.4 Impediments at the Regional Scale

Land reformers failed to recognize that basic structural inequalities in South African society had not been addressed at the time land reform was initiated. Reformers desired to transform rural society *using* land reform as a device for change rather than by addressing the difficult questions of tenure, authority, gender inequality and unequal access to capital in rural society *first*. Land reform was a 'magic bullet' that would stimulate the economy and alleviate rural poverty. The notion that any one stimulus can redress hundreds of years of unequal development needs to be re-examined. The next six sections address the structural inequalities, biases, or inefficiencies in the rural South African economy inherited from the apartheid state that block or in some manner skew the development of the rural regional economy necessary for such projects successful. The literature on successful projects showed that not only were the projects' internal dynamics critical, but a facilitating local and regional climate was also necessary for success (Bahrin, 1988; Findley, 1988). In South Africa, the following issues impinge upon CPA success:

Tenure Relations

Tenure reform has occurred, albeit in small steps. The tenure system is confusing and does not provide for widespread security. Women still experience

a high degree of insecurity, especially in tenure. Authority over tenure needs to be clarified and codified in the former homelands, including the issuing of titles (Cross, 1988). Rather than freezing existing tenure systems into place, as has occurred, tenure has to be addressed within the context of rural democracy building.

Insecurity resulting from the 'placelessness' brought on by the lack of legal tenure leads to a host of problems for the household and in this case the CPAs as well. Households have to spend vast amounts of time trying to maintain their tenuous hold over the land that they occupy, often confronting competing claims on their plot. Moving from plot to plot incurs expense of time and money, precious resources that could be invested in the CPA. Differentiation between tenured and non-tenured members necessarily advantages those with security property rights. They have more time and/or money to devote to the CPA causing cleavages to develop. Reforming the tenure system to provide stability in rural areas would have the effect of freeing up households' time and money, which in turn, could be invested in the CPA. Subsistence agriculture is a time consuming task. Constantly relocating or the fear of expulsion distorts the functioning of this system. Households have to concentrate more resources into an already burdening system.

Overlapping and Multiple Claims to Local Authority

Wresting control of rural areas away from the chiefs has proven to be a difficult task for the new state. The inherited system of "traditional authority" is neither traditional nor has universal legitimate authority in rural areas. The current realities of traditional authority were created by and suited the apartheid state, and as such reflected its interests (Cross, 1988). The strangulation of democracy at the local level in rural areas must be addressed. In reference to the CPAs, authority lies clearly with the central committee in all but one CPA. In the Monyamane CPA, the confusion over the legitimate authority must be clarified.

South Africa's system of competing authorities denies real democracy a chance in rural areas. Where inhabitants demand a "traditional" chief system, strict controls have been placed over the administration. Where possible local councils (a similarly democratically elected body) should seek to broaden their mandates. In any case, overlapping and multiple claims to authority must be addressed and one clear and legitimate body must rule. Recent steps to strengthen the local councils are encouraging and must continue. Resistance from chiefs has proven difficult to surmount, however, the transition to democracy in rural areas will not be complete until all citizens have a voice in their affairs at the national, provincial, *and* local levels.

The membership of CPAs have to function in two roles, one on the CPA where authority is clear, and the other in their places of residence where

6.4 Impediments at the Regional Scale

Land reformers failed to recognize that basic structural inequalities in South African society had not been addressed at the time land reform was initiated. Reformers desired to transform rural society *using* land reform as a device for change rather than by addressing the difficult questions of tenure, authority, gender inequality and unequal access to capital in rural society *first*. Land reform was a 'magic bullet' that would stimulate the economy and alleviate rural poverty. The notion that any one stimulus can redress hundreds of years of unequal development needs to be re-examined. The next six sections address the structural inequalities, biases, or inefficiencies in the rural South African economy inherited from the apartheid state that block or in some manner skew the development of the rural regional economy necessary for such projects successful. The literature on successful projects showed that not only were the projects' internal dynamics critical, but a facilitating local and regional climate was also necessary for success (Bahrin, 1988; Findley, 1988). In South Africa, the following issues impinge upon CPA success:

Tenure Relations

Tenure reform has occurred, albeit in small steps. The tenure system is confusing and does not provide for widespread security. Women still experience

authority is not always clear. The CPAs represent an alternative source of authority and as such threaten local chiefs. In fact, several chiefs were afraid that the CPA would draw away participants labor and tribute.

Gender Inequities

Redressing gender bias has been one of the central initiatives in the quest to transform South African society. Employment reform, access to health care, and equal status under the law have all been affected since 1994, however, rural women have yet to feel the full force of these reforms. Women still suffer unequal access to the credit and labor markets and continue to receive disproportionately lower wages than their male counterparts. Most glaringly women still must rely on a male relative in cases involving access to land.

Since large numbers of women are involved in the CPAs, addressing gender inequities could strengthen the associations. Women would be able to contribute in more meaningful ways if they had security of tenure in their places of residence and a higher degree of food security. As shown in the Review of the Literature, women are the primary agricultural producers in the Northern Province. Gender inequity dampens production and weakens the development of livelihood systems.

Limited and Unequal Access to Capital

The availability of capital in the rural economy is still restricted, with banks weary of investing in black agriculture. Credit is extended at shops for food and furniture, but rarely for agricultural needs. In contrast to the general situation in the rural areas, the Department of Land Affairs has been active in extending low cost loans for the CPAs. Until more credit becomes available, people will still find entry into agriculture prohibitive.

Credit here refers not to that lent to the CPA itself, rather to households and individuals. It is also important to note that agriculture tends to be the primary focus of credit reform in rural areas (Eicher and Staatz,1998). I maintain that credit extended for school fees, transportation (in the form of subsidies to transport providers), and microenterprises can also have significant feedbacks in the rural economy. Of course, credit for agriculture is in dire need in the Northern Province, but given the lower levels of returns to agriculture there than in other places, credit extension in these other areas will also stimulate the rural economy. The extension of credit may either free up the time for, or may directly facilitate participation in the CPA.

A Skewed Labor Market and the Continuing Urban Bias

South Africa's labor market is still geared toward providing cheap labor to the major industrial centers (Lipton, 1996). Efforts to raise labor wages in rural

areas are met with vociferous resistance from organized (commercial) agriculture and World Bank-oriented government economists in Pretoria. Labor unions have had little impact in these areas. As long as Gauteng looks enticing as a labor option, the rural areas will continue to suffer from lack of labor.

Urban bias persists in South Africa (Lipton, 1996). Urban areas receive the larger portion of investment and consume the bulk of tax revenues. For example, roads, schools, and clinics are far more accessible and far better funded in the urban centers than in the rural areas. Service delivery in the rural areas in the first six years of independence has been abysmal. Housing, land reform, and water provision have all fallen short of their service delivery targets, especially in the rural areas. Sanitation reform has been most successful.

The African National Congress (ANC) is a party of urban blacks and as such has neglected its rural brothers (Weiner and Levin, 1997). The issue of land reform has been placed on the back burner. The rhetoric of the pre-independence ANC on land reform has failed to translate into action. Fault for the failure of land reform clearly rests with the ANC, which has since placed emphasis on urban issues, such as labor and transportation reform.

6.5 Comparing Results

When faced with, and compared to, the performance of cooperatives in Africa, the question can be raised, did the CPAs perform any better? Using Okuneye's indicators of effectiveness, the answer has to be "not much". Okuneye judged cooperatives on four criteria, namely:

1. Viability over time
2. Facilitation of the provision of services
3. Promotion of egalitarianism
4. An increase in agricultural earnings

(Okuneye, 1985, p.6)

On the first indicator, judgment is early but all of the available data points to the fact that the CPAs have faltered, or at least stalled, bringing into sharp question the ability of the organizations to withstand the test of time. On the second indicator, CPAs have faired somewhat better as they have provided much needed capital and operating costs and in that respect have created a *facilitating environment* for the provision of services, but have not actually done much to affect a *sustained* higher level of service provision. The analysis of the data in this study by gender showed that the CPAs strive to be more egalitarian, but have serious issues to face. Finally, there is no evidence that agricultural earnings have increased at all. On this indicator, the CPAs have completely failed.

6.6 The Social Forces Hindering Land Use Change

The six reasons for the lack of livelihood transformation on Communal Property Associations listed above constitutes not only livelihood constraints but also block land use change that would otherwise occur. Take for example the case of the Mahlambandlovu CPA. When the white farmer sold the farm to the association he also sold them the complete inventory of his farming capital from tractors to implements. The farmer had planted maize crops on that land in previous years and left the farm in a condition where it could be readily utilized. Given that the association that bought the farm consisted of 396 members, an assumption of land intensification is reasonable. These people were drawn from the area near the farm, they knew the environment, their livelihoods were not disrupted, and the vast majority expressed both the need and the desire to farm crops. Further, they possessed some knowledge of agriculture, as the majority had long been subsistence farmers. Why then did so little change (and so little change toward intensification) take place? .

Not only are the above reasons impediments to livelihood transformation, but they also stymie land use change. The literature on land use change focuses on forces that promote or cause change, without investigating cases where social forces inhibit change. The oversight is due to the fact that land use change studies have a tendency to be *data led*. Investigation of the processes of land use change occurs *only after such changes have been clearly identified* usually in some

type of remotely sensed imagery. Forces that block change would rarely be identified, because no *a priori* land use change would ever be detected on the imagery, or at least not enough to prompt investigations over other areas where more change had occurred. For instance, this study would have *never investigated the Communal Property Associations* had it been a data driven project. There is far more conclusive evidence of land use change outside the CPAs. I am arguing here that the "other" side of "driving force of land use change" has been ignored - the social forces that block potential change. I have followed this line of reasoning precisely because these blocking forces directly relate to the social system in which they are embedded - they feedback to livelihood systems which can drive land use change (or not).

This is the primary reason I have attempted to link these literatures together. I show here that the same forces that effect livelihoods also effect land use change and the two are intricately connected, but not always in the manner the literature has demonstrated.

6.7 Accomplishments of Land Reform

Despite the failure of land reform to affect widespread change in rural areas, the land reform program has had several successes. First, gender equity programs have been implemented for the first time in many rural areas. The fact that so many women have been included in what, seven years ago, would have

been considered a man's domain is notable. Second, land *has* been redistributed and more *will be* redistributed in the coming years. Although the amount of land redistributed is paltry, lessons learned in these first steps will help in the crafting of future programs. People are being returned to the land that has for so long been alienated from them. Third, the publicity around land reform (and lack thereof) in South Africa has created a vigorous debate. Credit should be given to the Department of Land Affairs for generating publicity and keeping the issue of land reform alive.

6.8 Synthesis: The CPA, the Landscape, and the Geography of Livelihoods

In this analysis, the CPA has been isolated from the surrounding landscape, both physical and human, in order to discern its efficacy in delivering change. Boundaries of the CPA separate it on the imagery from its surrounding area and CPA members were surveyed separately. To equate the entire physical and human landscape in the assessment of the CPAs would have been both a misnomer and would have undermined the core of this study. It was necessary from an analytical point of view to set up the dichotomy between the CPAs and their surrounding landscapes. However, at this point it is important to place the CPAs back into both their physical and human landscapes. The CPAs represent a bridge between different scales of analysis. They link the livelihood systems of

households with the broader regional patterns - here referred to as the geography of livelihoods. They also directly impact the physical landscape -they are not set aside and devoid from interaction. Again, they provide a bridge across scales - subsistence production via the household is shown to impact broader land use patterns, specifically the land use extensification on the CPAs.

The CPA has affected an array of disarticulated impacts on both livelihoods and land use change. The CPA is only part of a suite of livelihood strategies, not the central livelihood strategy as envisioned by planners and members. Yet, it has begun to show signs of contributing to the strengthening of rural livelihoods. The CPAs have affected extensive land use changes. Yet the surrounding areas have experienced widespread intensification. This disarticulation of space is symptomatic of the impact of the CPA on both the physical and human landscape. While no member claimed to make a living solely from their activities on the CPA, many members' livelihoods were strengthened by participation. On the land that could have been expected to undergo rapid intensification, the transferred CPA lands, extensification occurred. Yet, the neighboring land experienced intensification. The full impact of the CPAs on the physical and human landscapes has yet to be realized. The differential impacts are due largely to the fact that the CPAs have failed to become central, organized, and substantive contributors to livelihoods and the local rural economy.

The land use change maps presented in this dissertation belie a geography of livelihoods. The spatial manifestation of the disarticulated impact of the CPA

on members' livelihoods is represented on the map. Intensification has occurred in areas where members live, yet none where they (are supposed to) work - the CPA. Livelihood strategies focus on utilizing the available resources within the local space economy. Subsistence farming still occurs outside the CPAs. Members expected that production for profit would occur on the CPAs, thus minimizing the risk to livelihoods involved with allotting substantial time to the CPA. This tendency toward risk-aversion is not uncommon (Zimmerman, 2000). Given the risk averse nature of subsistence farmers, the geography of livelihoods evident in the landscape is not exceptional.

The dynamic between the household and the CPA as units of production fuels the above noted disarticulation. Individuals face pressure between their responsibilities to the household versus those to the CPA. When the pressure mounted and a decision had to be made, this study has shown that most individuals chose their household over the CPA as the mode of production and reproduction, as it was perceived as far more effective in sustaining their livelihood.

These disparate and seemingly disarticulated forces shaping land managers' / household decisions across both scale and space, impacted by political, environmental, social, and economic forces speak to the theoretical framework in which the study is set - namely, political ecology. When examined in the context of a political ecology approach the disarticulation manifest in the landscape is clearly a result of the forces competing for the interests of the

household - some households respond to the CPA while others have abandoned it. Certain households have "scaled up" believing that in collective action lies greater livelihood security. Political and economic forces (primarily vested in the state) have influenced those households to focus many of their productive resources on the CPA. Being risk averse, however, these same households have weighed the *potential* of the CPA against its *inability* to provide material benefits and have decided to retain their local gardens and fields. In this respect, CPA members are operating across scale - retaining their own gardens and fields (household scale) while at the same time participating in the larger farming activity of the CPA (local /regional scale). In the context of a political ecology approach toward understanding the dynamics of this case study it is important to note that households have not chosen to make only *one* land use decision, but *multiple land use decisions* with multiple impacts across space and on several local level scales. The seeming disarticulation in the landscape is a result of the multiple land use decisions.

6.9 Summary

I have shown here that land reform which aimed to change land use patterns and alleviate rural poverty has, of yet, accomplished neither. Evidence was drawn from statistics that showed little change in livelihoods and satellite

images that showed even fewer changes to more productive land uses on transferred lands.

I have omitted in this chapter a discussion of the social driving forces of land use change. I have focused on the Communal Property Associations and as noted in chapter four and five, not enough land use change occurred *on the CPAs* for me to undertake any analysis on which I could base scientifically defendable statements. On several of the CPAs, *no* land use change occurred. Therefore, it is impossible to explore the social driving forces of change where no change or very little change is evident. In effect, I presented in this chapter the social *hindering* forces of land use change.

I have shown six reasons for the lack of change, both in livelihood systems and land use - general disorganization (social disruption), the large farm sizes, lack of labor and skilled members, gender bias, capitalization problems, and the age structure of the membership. I presented evidence that the development of the CPAs has stalled. The transforming potential of the CPA program has only begun to affect change in livelihoods and land use. I then discussed the issue of time, specifically whether or not the CPAs had matured enough to conduct an analysis. I next raised the issue of expectations of progress, drawing on case studies to gauge what could be expected from the CPAs at this stage in their development vis-à-vis other projects from around the world. Finally, I highlighted the successes and failures of the land reform program, specifically addressing reasons the CPAs have faced such difficulty in a *regional* context.

Chapter Seven

Conclusion

I have shown in this study the failure of land reform to substantially alter both livelihood systems and land use among the study sites in the Northern Province, South Africa. Specific questions were raised in this dissertation relating to the impact of land reform- did it deliver, what was the scope of change, did it impact livelihoods in a substantive way? I will now review the assumptions and findings of this study, the contribution to science and the literature, and will conclude with a discussion of the limitations of the study and implications for future research.

Land reform has not delivered the results expected by either government planners or project beneficiaries. However, expectations can far outpace realities. Immediate post-liberation South Africa was deluged in a flurry of promises, high-hopes, and ambitious service delivery figures. I assumed in this study that:

1) The introduction of a land reform project into a rural, poor area would have the effect of *raising incomes* and *strengthening* livelihood systems
2) Projects have not been abandoned and, given the degree of government support and general enthusiasm among the population for land reform, the level of activity surrounding the farms is high.

3) Significant changes in land use change on transferred lands would have occurred. Given the high degree of land pressure and the need to strengthen and broaden livelihoods in rural areas, members of Communal Property Associations would have actively mobilized and fully utilized the new land resource opportunities.

The findings of this study include:

1) A lack of clear and compelling evidence that the land reform projects directly and unambiguously *increased* incomes and *strengthened* livelihood systems. I did find, however, an indication that livelihoods on land reform project farms are improving slightly -it is probable that some *limited* contributions to livelihood strengthening has occurred due to participation in CPAs.
2) Projects have not been abandoned, however, the level of activity (production or other use) on the farms was much lower than expected. In many cases there was *no* activity on the transferred farmland.
3) Land use on the transferred lands is largely extensive rather than intensive. It was found that the bulk of land use intensification has occurred on land near to CPAs. This was attributed to the fact that the membership of CPAs are not allowed to reside on the transferred farms themselves and are drawn to participate from nearby communities. No

one-to-one correspondence was found to indicate the CPA was the driving force of the change in the bordering areas.

7.1 *Contribution to Theory and Method*

This dissertation informs the literature and theory specifically regarding issues of livelihoods, land reform, land use change, and integration of social theory and geographic information technologies.

Livelihoods

An understanding of livelihoods systems is essential to this study for several reasons. First, large numbers of people suffered severe economic hardships as a result of the apartheid system. The current government strives for social transformation, yet for this social transformation to occur an understanding of the dynamics of livelihoods is essential.

Second, the vast majority of rural South African households are still dependent on local environmentally based methods of securing an income, namely agriculture and livestock husbandry. To understand how land reform might effect livelihoods, the livelihoods themselves must first be understood in their local environmental context.

Livelihoods were shown in this dissertation to be similar to those in other areas of Africa and South Africa. In the study areas, people rely on remittances, pensions, and petty commodity production for subsistence. This dissertation thus provides further evidence to the trends identified in the literature on

livelihoods that show increasing dependence on entitlements (Baber, 1996; Bernstein, 1992; May, 1996).

The dissertation contributed to theory building by providing additional empirical evidence on the scope of livelihood systems in rural South Africa. Understanding of the range of livelihood options and degree of change in such systems has been strengthened by the findings presented herein. Specifically, this study showed that rural households have options from agriculture to petty commodity production to formal employment to participation in CPAs as livelihood choices. Scientifically, the findings presented in chapter four and five support basic theoretical arguments (Watts, 1981; Bryceson, 1997; Campbell, 1990; Chambers, 1992; Vogel, 1993). Further, livelihood systems approaches have been broadened by the integration in this dissertation of land use change with livelihoods. Investigation of land use change was shown to be compatible with simultaneous investigation of livelihoods, where similar forces shape both.

Land Use Change

Land use change has been used here as an indicator of the progress of land reform. Measurement of change caused by land reform can be readily detected in the changes in land use in this study. Transferred land was intended to be used by the communities for agricultural production and livestock husbandry and government planners anticipated that land use would intensify. Identifying the

scope of land use change provides empirical evidence as to what happened on the ground.

This dissertation has generated a range of ideas regarding land use change. It has contributed to theory on land use change by raising the issue of "no land use change" versus "land use change". What has been shown is the need to investigate the "other side" of land use change - the forces that *block* land use change. The literature is inundated with examples of "social driving forces" but no mention of what might be preventing change that would otherwise occur. Why is 'no land use change' just as important as 'land use change'? Models predict what we don't know based on statistical likelihood of the replication of what we do know. One key flaw with models, particularly land use change models, is that "unexpected" forces or changes occur, thus invalidating the results. Could these "unexpected' forces be the blocked land use changes becoming unblocked?

This dissertation has shown that that knowledge on the social forces driving land use change can not be broadened and expanded without identification of the obstacles those forces must overcome to be manifest in the landscape. For this case study, those obstacles included social traditions that alienated women from full participation in the land reform program, a skewed labor market, contradictory tenure relations, and a lack of labor and skills on CPAs. The point is that land use change in this respect doesn't just happen - several forces determine which communities/households/individuals overcome

these forces and which ones do not. There is a suite of social, political, environmental, and economic factors that *either* facilitate *or* block change. Understanding this difference is the real theoretical challenge and this dissertation has begun to address this question. Land use change is conceptualized in this dissertation from a broad perspective, incorporating many elements of the global change literature with the political ecology and feminist political ecology literatures, thus contributing to each. The investigation of land use change has shown simultaneous intensification and extensification occurring in these landscapes. As such it challenges the notion of broad, overarching driving forces driving change in a reproducible and predictable manner.

Land Reform

Land reform forms the heart of this study. This dissertation provides measurement of the progress of land reform. The thrust of social transformation of rural areas in post-apartheid South Africa has been undertaken through the implementation of land reform projects. Thus, to gauge the state of rural South Africa, one must investigate the progress of land reform projects.

The impact of land reform on both livelihoods and land use change in the study areas was shown to be less than anticipated by project members and planners. This dissertation has informed the literature on land reform by clearly highlighting the failure of the Communal Property Association program to provide meaningful livelihood-enhancing change.

The assumptions set out in the literature that capital injection will lead to transformation were shown to be erroneous by this study. In this respect, the dissertation rejects some of the assumptions set out in land reform theory and literature, namely that 1) redistribution results in increased incomes for participants, 2) land reform is an impetus to local economic change, and 3) redistributed farm units become self sustaining and the involvement of government will become limited over time (Eicher and Staatz, 1998; Van Rooyen, 1998; Van Zyl, 1996).

Further, this study informed the literature on cooperatives and resettlement and many of the conclusions of this study are supported in that literature (Gyllstrom, 1991; Adeyeye, 1991; Kimario, 1992; Holmen, 1990). The six constraints facing the Communal Property Associations in South Africa are ones that have been encountered across Africa in the past. This study was able to show that the organizational structure of the CPAs is inherently flawed. By comparing the structure of cooperative farms with the CPAs and then comparing the results, it is clear that the CPA functions and performs as a cooperative, with the same limitations. As with many cooperatives, the CPA has failed to create the level of material benefits necessary to ensure its own survival.

Contributions to Theory

Several contributions to theory and methods were made by this study. First, this dissertation undertook to integrate both literatures / theory and methods

from several sources. In the exploration of methods, it was found that the combination of traditional social science methods, such as interview schedules and informal interviews, and remote sensing /GIS provided both opportunities and challenges.

What were the main contributions of the integration exercise? Regarding livelihoods and land use change, one methodological approach is not broad enough to capture the relationship presented here. Norgaard (1989) maintains that methodological pluralism can advance understanding in science. By integrating methodological approaches, this dissertation has answered some questions and raised others regarding how a one-to-one relationship could be made between pixels on a satellite image and specific social processes, thus providing opportunities for future research.

The methodological integration here contributed to the understanding of the difficulties faced when attempting to mix social theory and geographic technologies. The complex nature of social systems, often cited in the land use and land cover change literature as problematic to modelers and modeling, can be understood at the household and community level through investigation of the relationship between livelihood systems' *spatial, temporal, and scalar* manifestations.

As reflected in the publication "Our Common Journey" (NRC,2000), livelihoods are a key component in the understanding of global change, but the intersection of the two topics is not well understood. The role and impact of

livelihoods still remain clouded from a global change perspective. This study contributed understanding of how to begin to address livelihoods *together with* and *as a key component of* land use change. The linking in this study of livelihood change with land use change showed that the feedbacks between the two are dynamic, yet difficult to untangle. An action taken to change livelihoods often results in a land use change, either an intensification or extensification. For example, when some of the female members of the CPAs found that they could hire other women to garden for them at their home plot, they were able to affect land use changes at the CPA farm itself. When CPA members found that they had to send off their children and relatives to work elsewhere, the resulting lack of labor led to less activity on the CPA farm. These findings suggest that livelihoods and land use change should not stand alone in the literature and in theory. The common area between the two will provide fertile ground to researchers interested in both the social forces driving land use change and the interaction of livelihood system with the local environment.

This dissertation has contributed to the political ecology framework by incorporating gender, focusing on scale issues, and relating the process of livelihood change to changes in the physical environment and the subsequent feedbacks. Political ecology was used as a broad framework for analysis but also included key concepts from the global change framework, post-modernism, and feminist political ecology.

Rocheleau (1996) noted that gender was an important component of political ecology along with class, power relations, and issues of scale. This dissertation supported Rocheleau's notion of a feminist political ecology , specifically the importance of the intersection of gender and ecology in understanding livelihoods. Gender relations influenced CPA performance, enabling some to participate while blocking others.

A second contribution to science and the literature centers on scale. Lessons from the land use and cover change literature are particularly relevant. For instance, a case study - by - case study approach, common in the livelihoods literature, does not evoke thinking and critical response on the broader patterns of change (Meyer and Turner, 1994). This dissertation showed the importance of cross-scale analysis. Here, the CPA was a mechanism by which households bridged their own production to production at a broader, community scale. The relationships between the household and the community scale of production were detailed in this study, e.g. women's sequestering of labor at home as a means of participating in the CPA. Locating the CPA within the landscape and relating individual action to broader patterns via the CPA, this dissertation highlighted the dynamic nature of people-environment interaction across scales (Blaikie, 1994). It showed how household actions and agents could affect landscape change through group action.

Regional linkages in scale were found, but only in the sense that regional forces impacted the CPAs (chapter six). The contribution of the CPAs to the

economy of the Northern Province and their place in the regional employment and livelihood patterns was not shown. This dissertation was also not able to place the CPAs in the national and international scale. There is no indication of how the study CPAs might account for total national land use change or if the CPAs have some ability to impact the national economy. In these respects, the study faces the same constraints as previous studies described by Meyer and Turner.

Further, this geography of livelihoods and findings on scale issues contribute to the study of structure and agency (Giddens, 1984). This study was informed by structuration theory as presented in the sociology and anthropology literatures. Those disciplines outlined how individuals and groups in society deal with structural obstacles, such as institutions and the state, that restrict their ability to express their agency. It was shown here that structure in society and in the CPA program itself inhibited the actions of agents. Agents (members of the CPA in this case) expressed their agency in the area called "environs" - those places outside the CPA. The CPA as a structure designed to affect change is too rigid and too closely linked to the state to be a viable instrument of change. This finding is supported in the cooperatives literature (particularly Gyllstrom, 1991). Agents, even when exercising their power through mass action, were unable to surmount the inequities in the rural economy and inefficiencies with the CPA. These inequities and inefficiencies stood as structural barriers to effective action on the part of agents to fully utilize the potential of the CPA.

These findings on structure and agency inform the sociological and anthropological literature and theory from a spatial perspective. This study demonstrates that both structure and agency are expressed in the landscape. The impediments to social transformation presented in the last chapter have spatial manifestations, e.g. the lack of change seen in this study. Structural forces such as the Gauteng labor market and laws regarding tenure blocked agents and groups of agents (the CPAs) from acting on their wishes to transform their land. Structuration theory, in this sense, has spatial component.

7.2 *Limitations of this Study and Future Research*

As a baseline study, this dissertation has inherent limitations built into it as a result of the research design. These limitations will clearly affect future investigation into this topic. First, livelihoods in this study were less clearly differentiated between pre- and post- CPA involvement than was anticipated. There were far too few "before and after" questions asked and there were few actual quantifications of income. This will limit future comparisons of the data from this study, specifically investigations will not be able to show precise income changes.

Second, the results of integrating satellite remote sensing analysis and social survey techniques with the intent to understand the "social driving forces of land use change" were ambiguous. Social driving forces were not explicitly referenced to instances of landscape change, thus inhibiting future studies in

their ability to map the driving forces of change based on this data. It was difficult to identify the specific driving forces of land use change and then relate them back to an image. Further, there was very little methodological experimentation in the land cover analysis, particularly regarding satellite image processing. In future, exploration of other methods of classifying dryland images (such as green-up indices and other NDVI based procedures) might prove insightful.

Future studies will be limited by the design of this study that overemphasized the role of agriculture in both livelihoods and the dynamics of land use change. In many places, this dissertation has fallen into the same trap as many other authors- arguing that unless agricultural production improves a project in Africa is a failure. The impacts of the CPA on non-agricultural components of rural life and livelihoods was not fully investigated. Other schemes were successful because agriculture was the central component of the livelihood system. This is not the case in South Africa because non-farm income is of such great importance, so agriculture-led projects might not be expected to produce a similar result. Similarly, a clear time sequencing for the recovery of livelihoods after the transition into the CPA was not presented. The study showed that the transition on CPAs continues and future studies will need to consider this dynamism as they build upon the findings of this dissertation.

7.3 *Summary*

This study undertook to investigate the impact of a land reform event on the livelihoods of rural participants and any subsequent change in land cover and use. The literature on livelihoods, land use change, land reform, gender relations, and resettlement were reviewed to provide insight to the research questions. These questions focused on how livelihood systems responded to a land reform change, whether or not the social driving forces of land use change is clearly evident in satellite imagery, and whether or not land reform in South Africa result in a land use and/or livelihood change. Recurrent themes included the impacts of gender relations and issues of scale.

This study contributed to the livelihoods literature by re-confirming the importance of remittances, pensions, and petty commodity production in the mix of economic activities. The finding that land use change can be blocked contributed to the land use change literature as well as showing that land reform did not meet its intended goals of land use intensification and subsequent livelihood enhancement. Some assumptions in the land reform literature were challenged, specifically those asserting improvements in household and regional economies as a result of reform.

The exercise of methodological integration provided insight into the difficulties of bringing together social theory and geographic information technologies. Specifically, linking explicit livelihood activity with land use change was shown to be difficult but possible. The fact that both livelihood

change and land use change are often effected by the same forces informs both literatures as to the need to examine the topics simultaneously rather than separately.

Findings of the study included a lack of clear and compelling evidence that: the land reform projects directly and unambiguously *increased* incomes and *strengthened* livelihood systems; that projects have not been abandoned, however, the level of activity (production or other use) on the farms was much lower than expected; and very few changes have occurred in land use on the transferred lands. Limitations included the underutilization of available geographic methods and the convenient sidestepping of complex issues of scale and gender relations.

This is not the final chapter on land reform in South Africa. Although the focus has shifted, reform will still occur. The real question is – how long will the rural disenfranchised majority wait for land reform? Clearly, change has been too narrow and taken too long. One danger facing South Africa is the same one that faces other nations and is now crippling Zimbabwe – the overt politicization of land reform for the maintenance of ruling party power. The conditions in South Africa are very similar to those in Zimbabwe after 1980, namely a large number of land hungry people confronted with slow and ineffective delivery.

How long will South Africa wait?

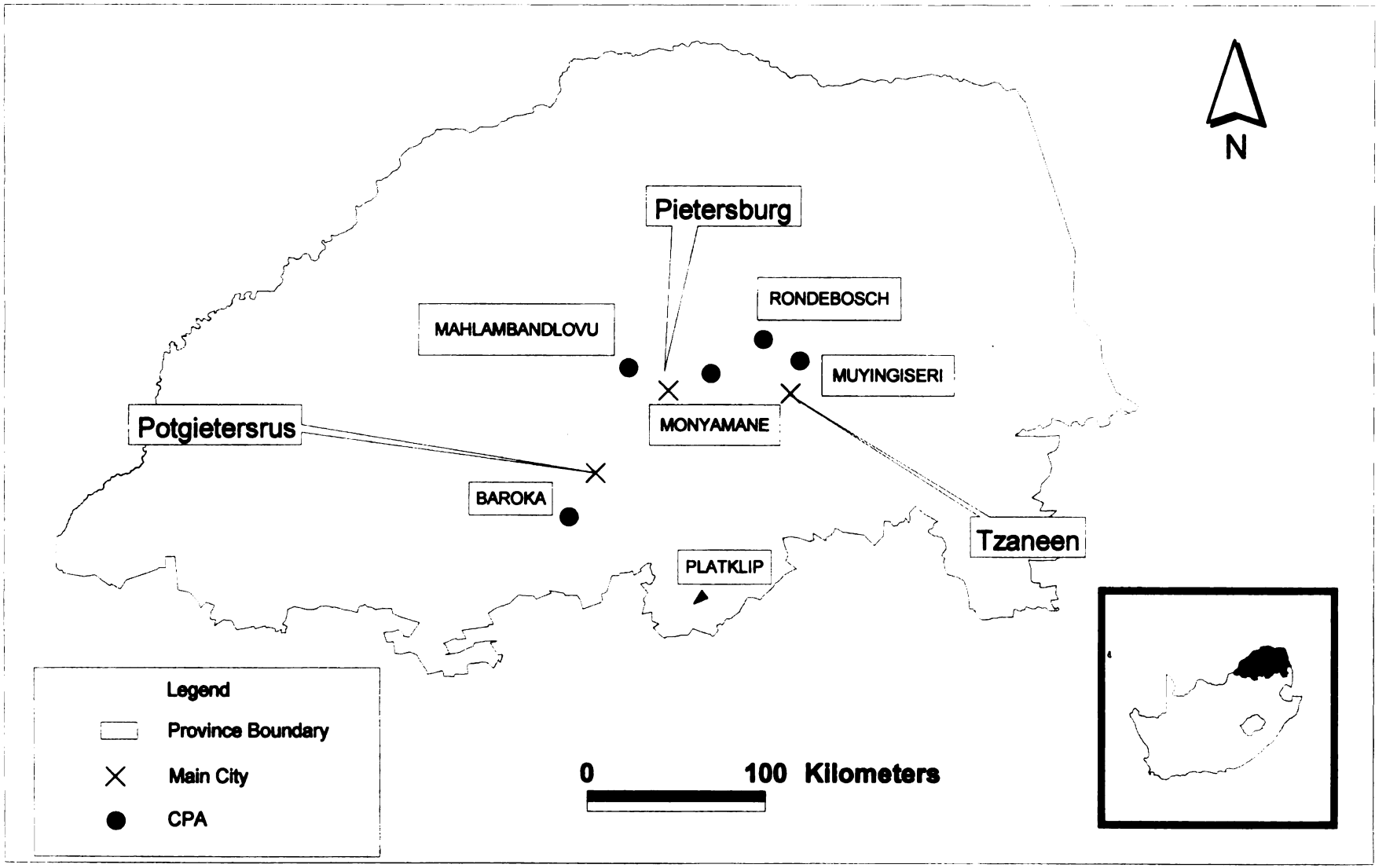

Figure 1: Location of Study Sites in the Northern Province

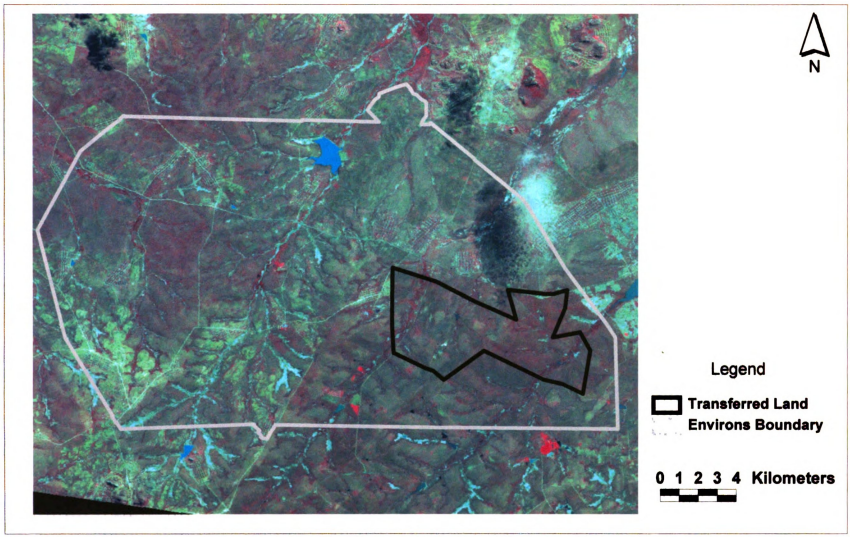

Figure 2: False Color Image of Mahlambandlovu CPA and Environs 2000

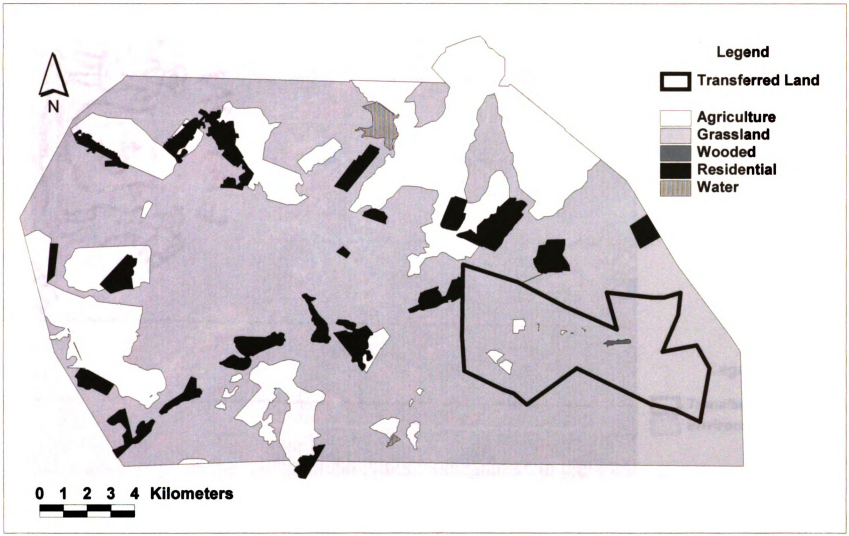

Figure 3: Land Use and Cover 2000 - Mahlambandlovu CPA and Environs

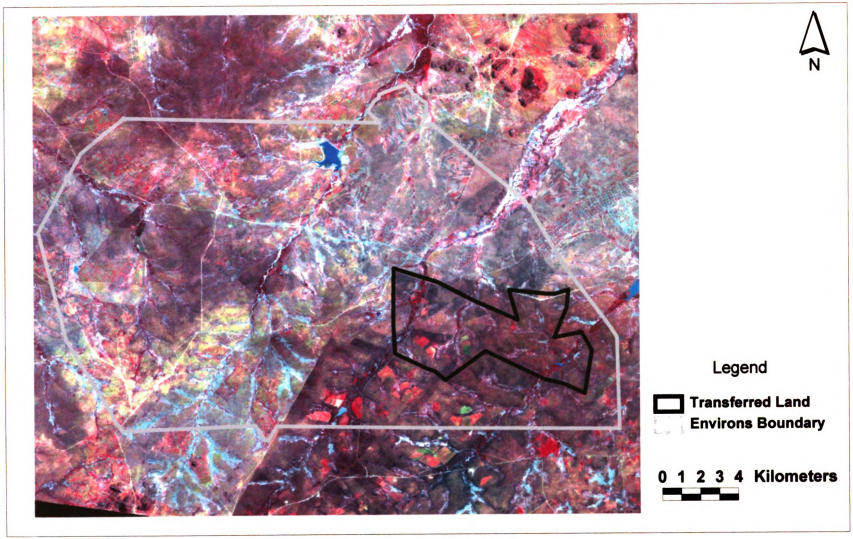

Figure 4: False Color Image of Mahlambandlovu CPA and Environs 1989

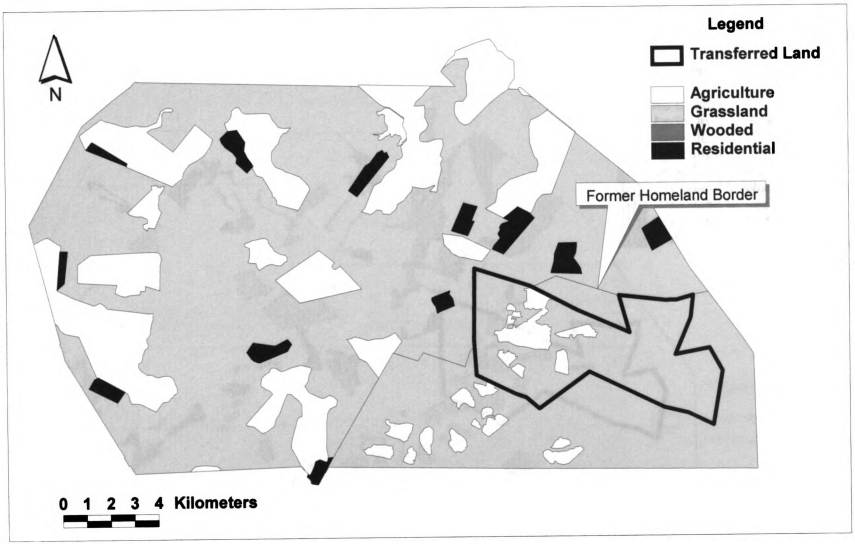

Figure 5: Land Use and Cover Change 1989 - Mahlambandlovu CPA and Environs

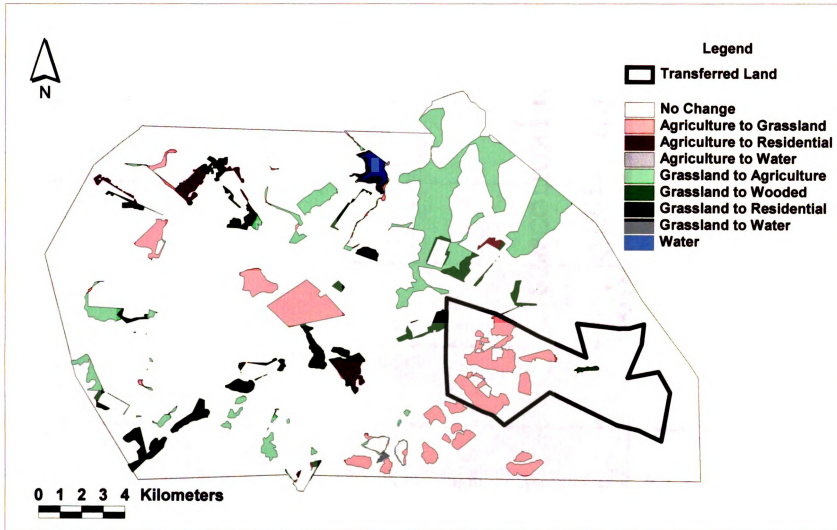

Figure 6: Land Use and Cover Change 1989-2000 - Mahlambandlovu CPA and Environs

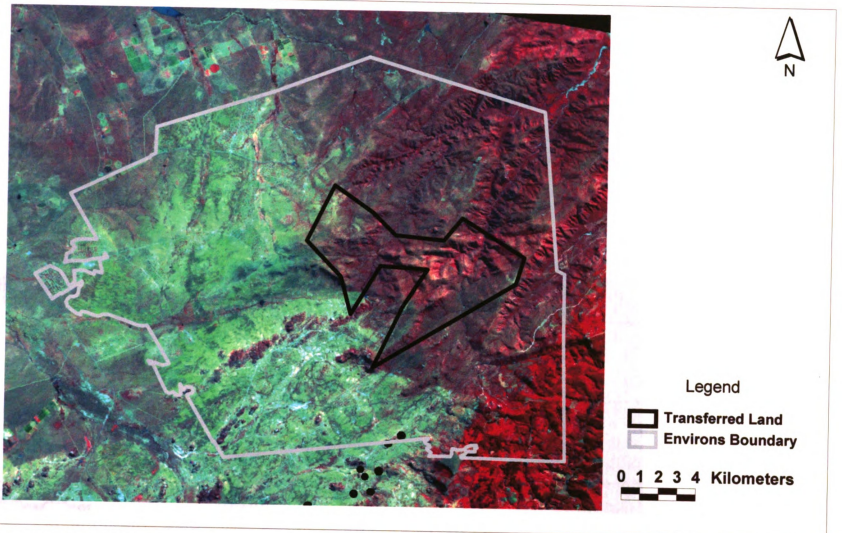

Figure 7: False Color Image of Monyamane CPA and Environs 2000

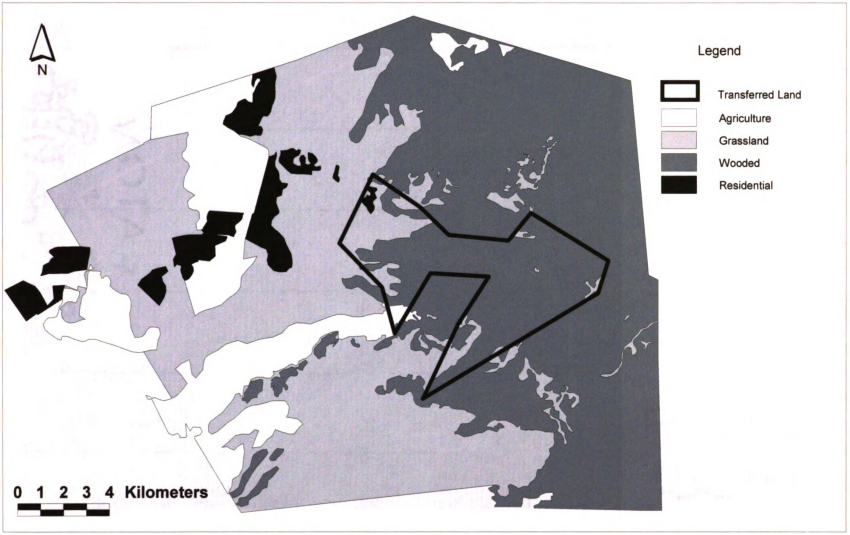

Figure 8: Land Use and Cover 2000 - Monyamane CPA and Environs

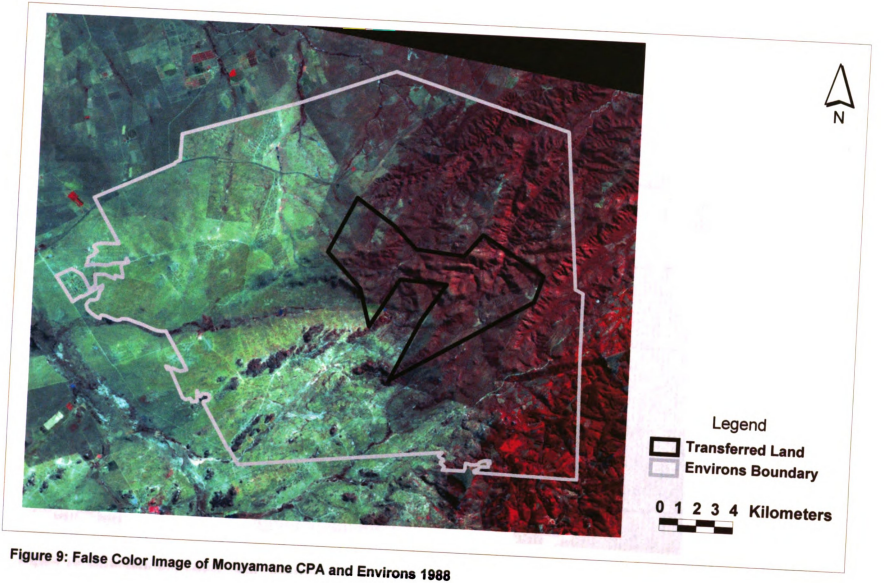

Figure 9: False Color Image of Monyamane CPA and Environs 1988

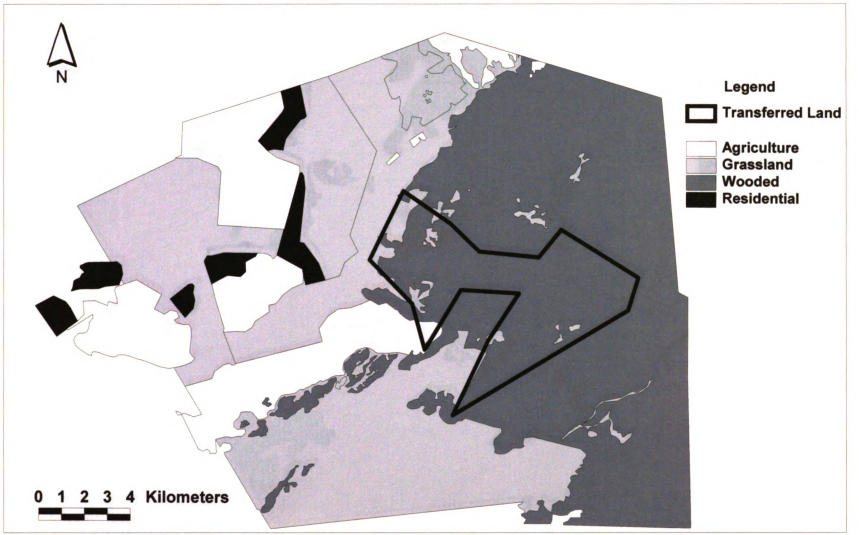

Figure 10: Land Use and Cover 1988 - Monyamane CPA and Environs

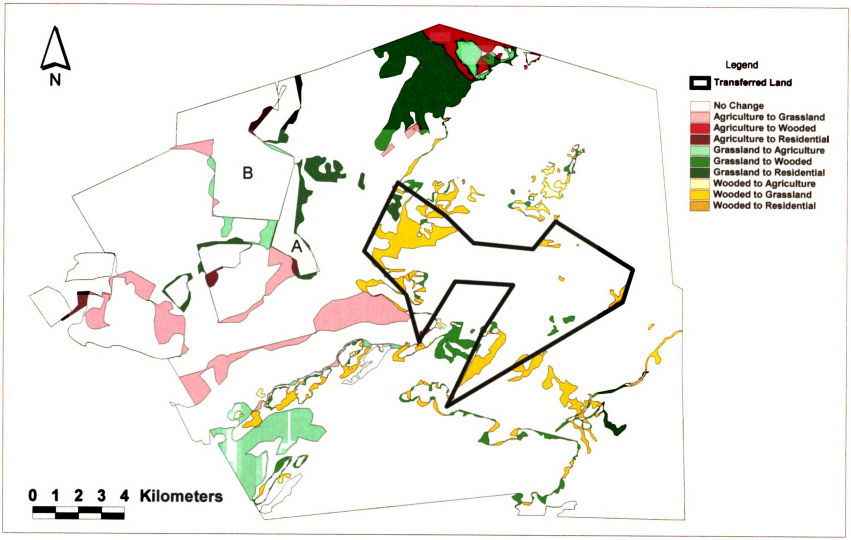

Figure 11: Land Use Change 1988-2000 - Monyamane CPA and Environs

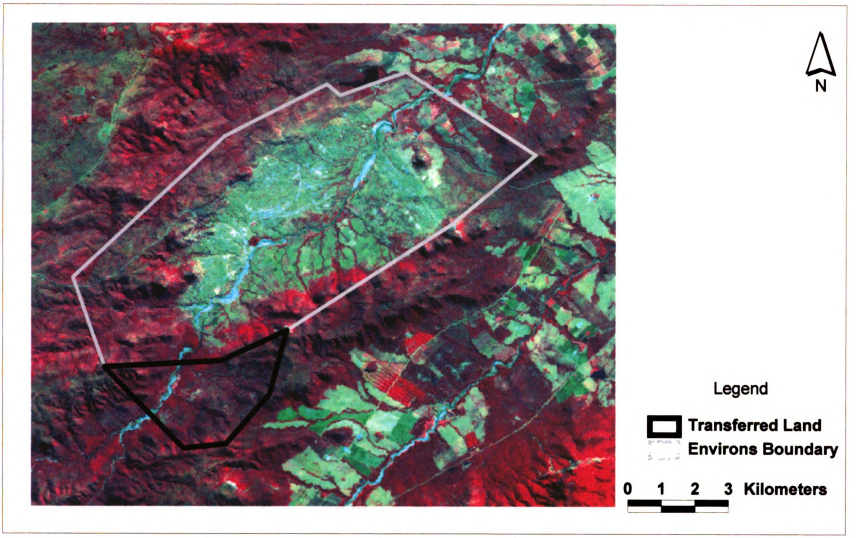

Figure 12: False Color Image of Rondebosch CPA and Environs 2000

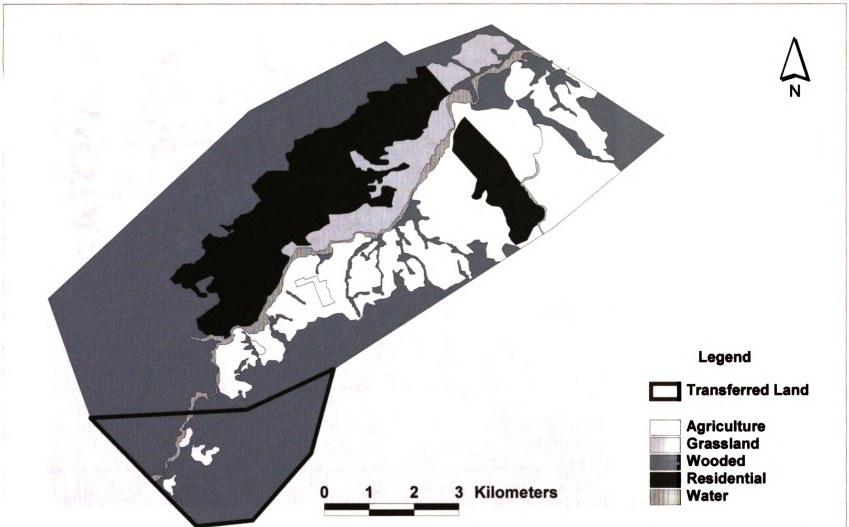

Figure 13: Land Use and Cover 2000 - Rondebosch CPA and Environs

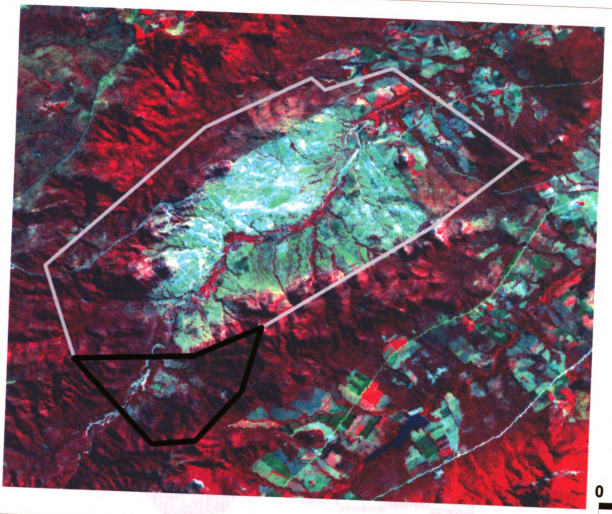

Figure 14: False Color Image of Rondebosch CPA and Environs 1989

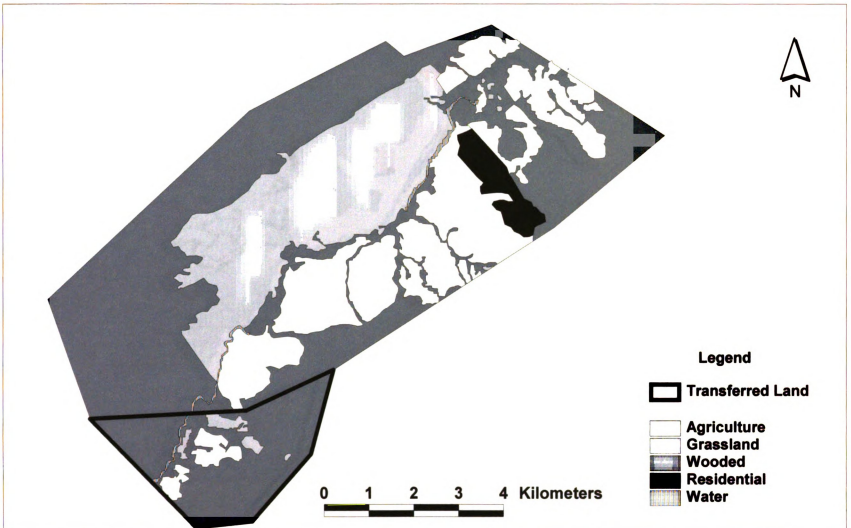

Figure 15: Land Use and Cover 1989 - Rondebosch CPA and Environs

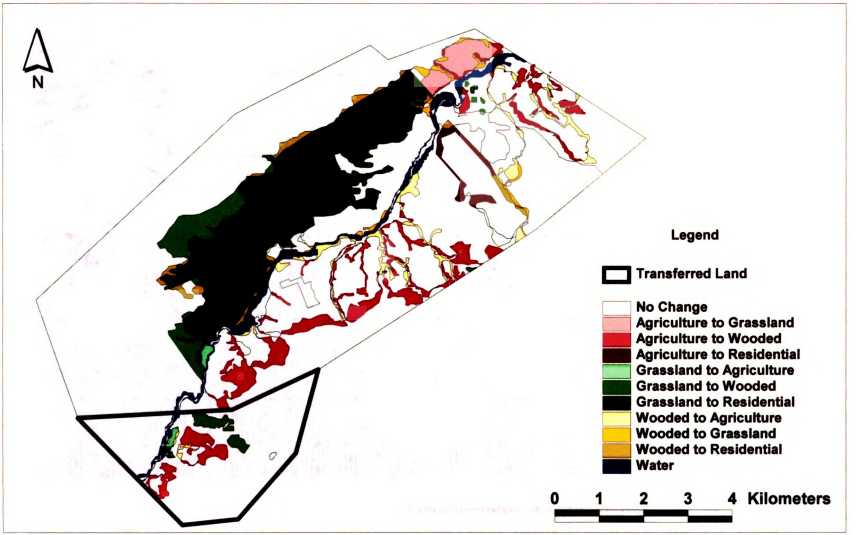

Figure 16: Land Use and Cover Change 1989-2000 - Rondebosch CPA and Environs

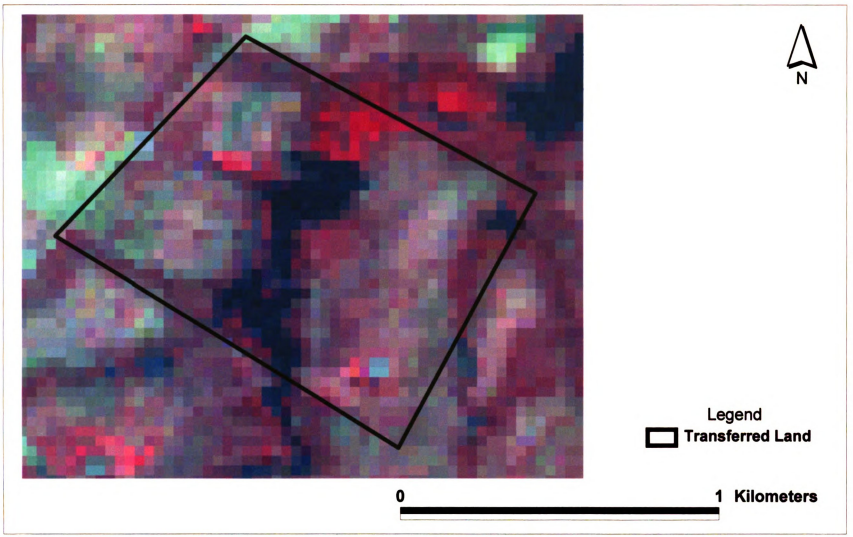

Figure 17: False Color Image of Muyingiseri CPA 2000

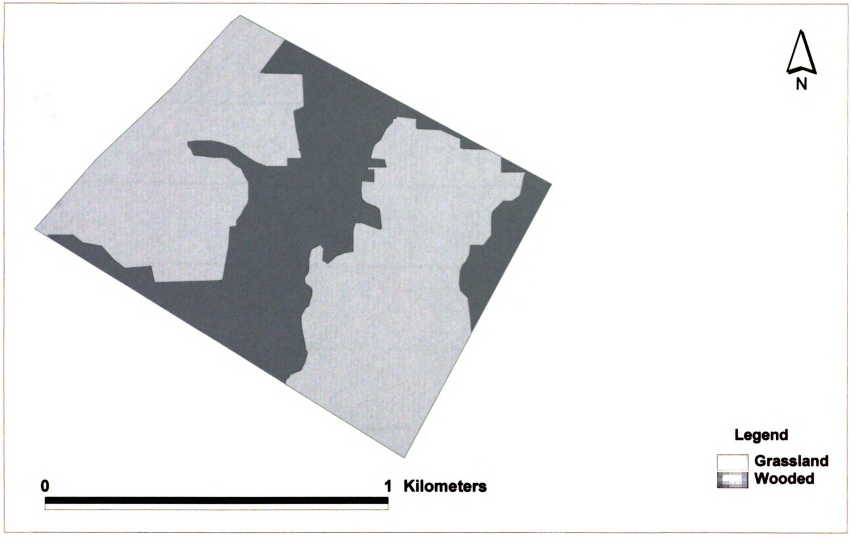

Figure 18: Land Use and Cover 2000 - Muyingiseri CPA

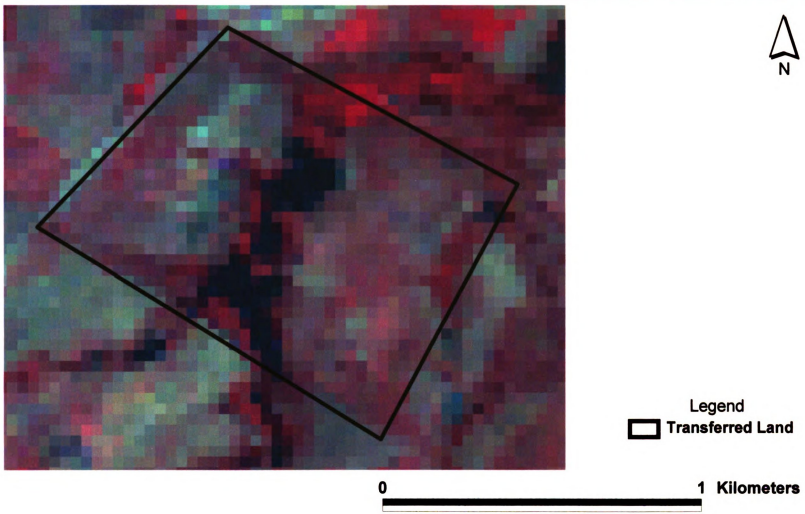

Figure 19: False Color Image of Muyingiseri CPA 1988

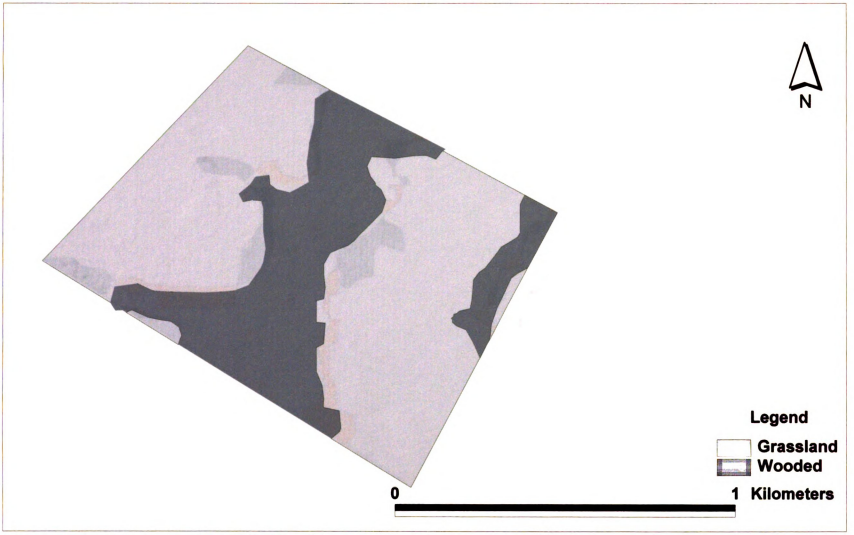

Figure 20: Land Use and Cover 1988 - Muyingiseri CPA

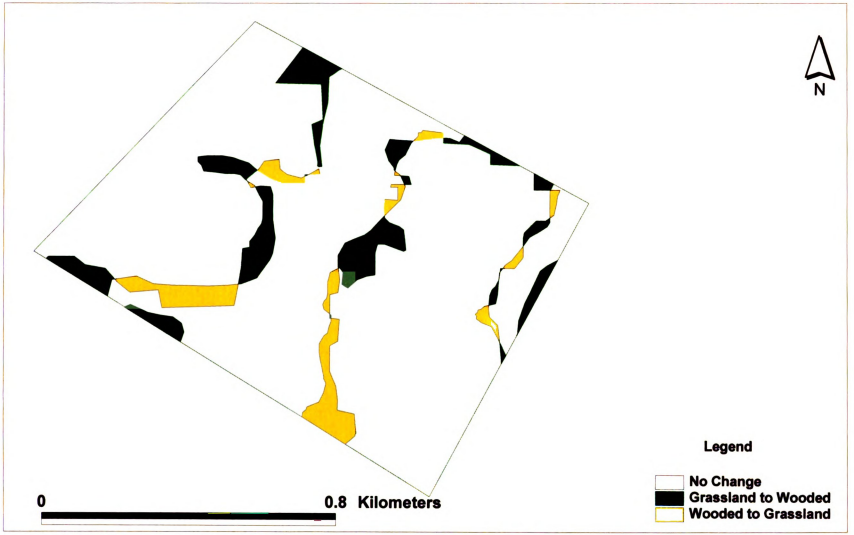

Figure 21: Land Use and Cover Change 1988-2000 - Muyingisery CPA

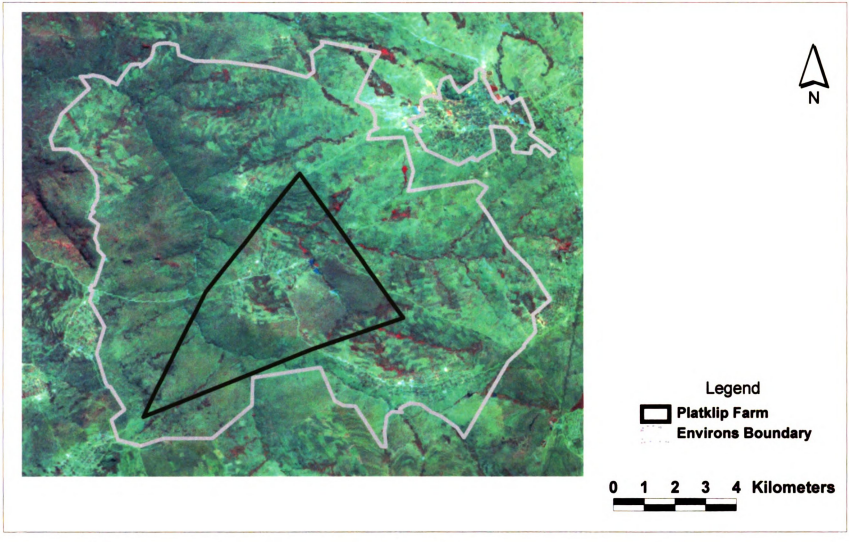

Figure 22: False Color Image of Control Farm and Environs 2000

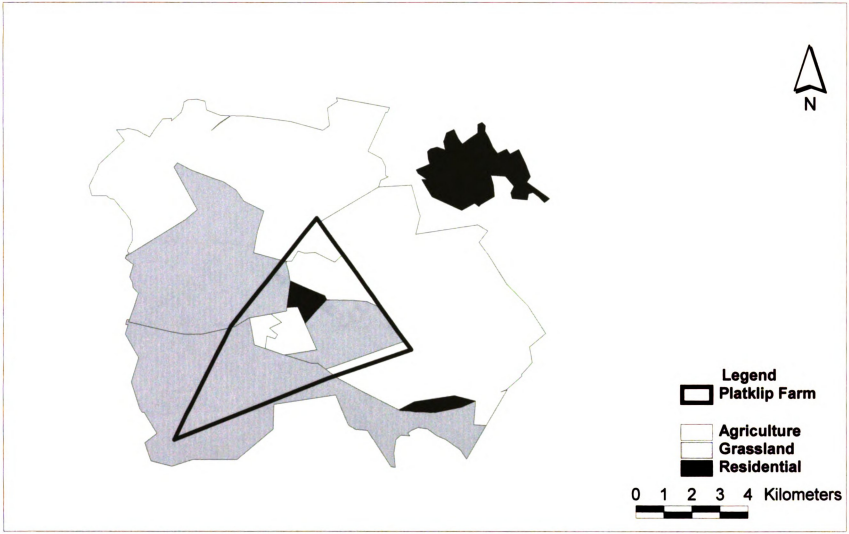

Figure 23: Land Use and Cover 2000 - Platklip Control Farm and Environs

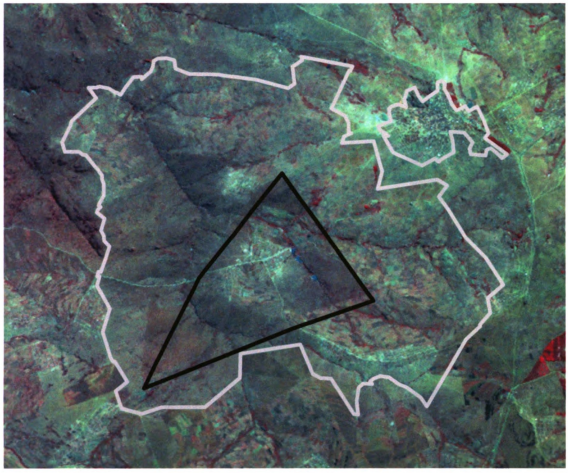

Figure 24: False Color Image of Control Farm and Environs 1988

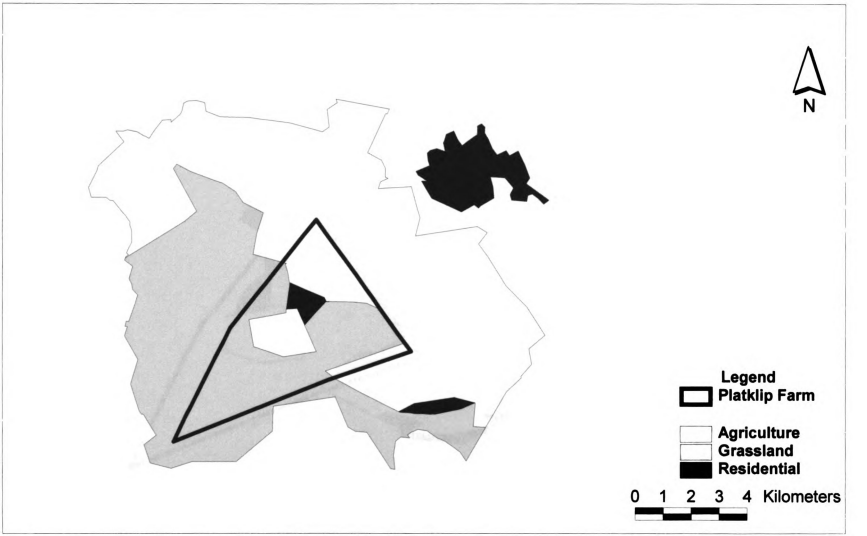

Figure 25: Land Use and Cover 1988 - Platklip Control Farm and Environs

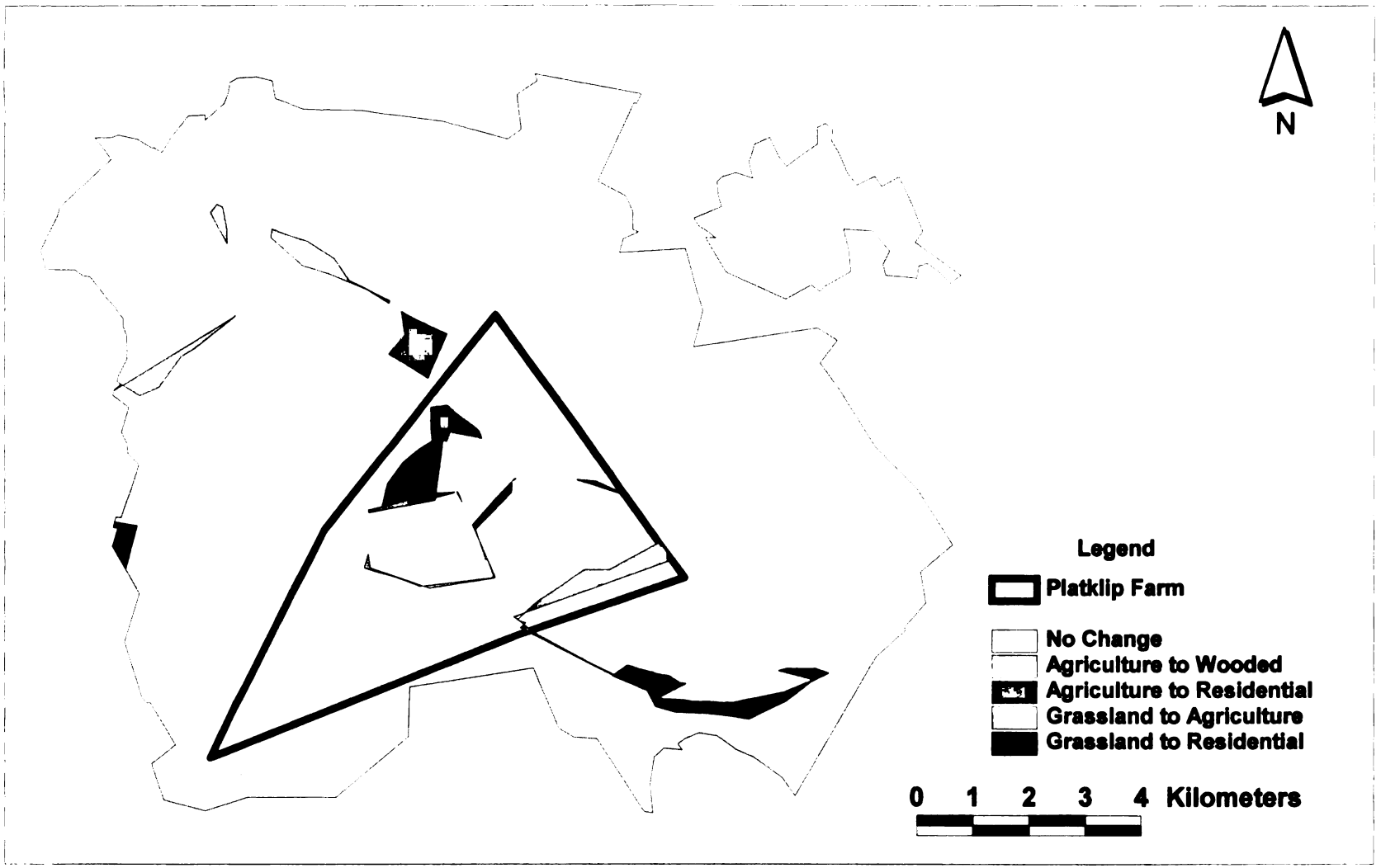

Figure 26: Land Use and Cover Change 1988-2000 - Platklip Control Farm and Environs

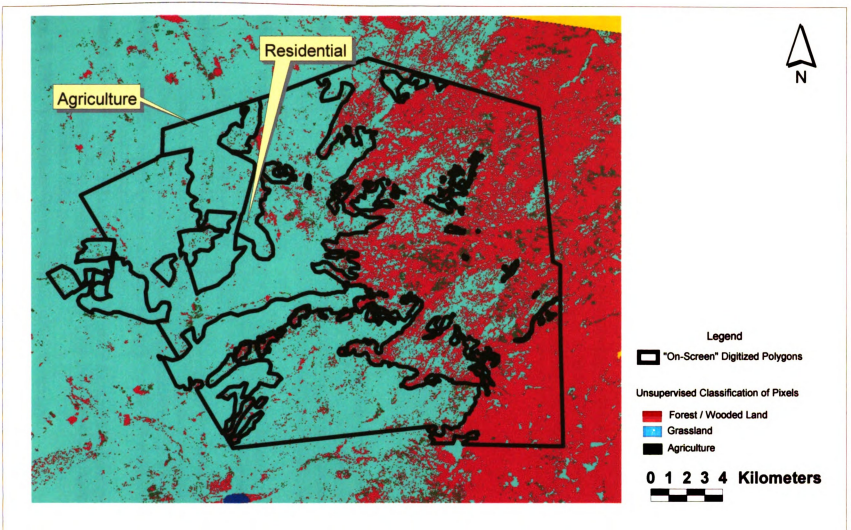

Figure 27: Difference between On-Screen Digitizing and Unsupervised Classification

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