

USING GEOGRAPHICAL INFORMATION SYSTEMS FOR MAPPING COMMERCIAL FARMERS' PERCEPTIONS ON LAND REFORM IN MPUMALANGA, RSA.

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Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

ABSTRACT

Traditional top-down decision-making models have become unpopular since public institutions have been demanding more democracy at local level. New approaches and techniques have focused on how the majority of people can be involved in a bottom-up approach to development and decision making. Techniques, such as Participatory Rural Appraisals (PRAs), have identified people's concerns regarding the use of natural resources centred on land issues. Land is essentially a subject of public concern. Land as a spatial phenomenon controlled politically and used by all for survival and other purposes needs to be assessed in an integrated and time-spatial way for better planning and decision making.

Geographical Information Systems (GISs) have often been used by statutory "experts" in evaluating, analysing and mapping of land and land-related features. GISs have a lot of potential in being applied as decision-making tools. If this is the case, how can public perceptions and politics be presented and mapped in a GIS to improve and democratise decision making even further? The study has investigated new methods of representing people's perspectives at grassroots level in a non-traditional way.

A sub-region of the Lowveld, situated in the Mpumalanga province, has been selected because of the various kinds of land owners in the region. The Kruger National Park lies to the east of the study area, from where some black communities claim to have been removed. To the west of that is one of the districts of the former homeland KaNgwane, namely Nsikazi, and west of that two areas of intensive large-scale commercial fruit and vegetable production in the Nelspruit-White River and Kiepersol-Hazyview areas. Towards the escarpment north-west of these lie large commercial exotic forest plantations, owned mainly by Safcol and Mondi. Given the high demand and need for land from the over-populated Nsikazi district, the process of land reform is a matter of great concern.

White male commercial farmers in both regions where commercial farming is active were interviewed about their knowledge and perceptions of land reform. Various themes were presented to the farmers to comment on, namely the history of forced removals, land use, land potential, hydrology and where land reform should take place. Interviews were taped in Afrikaans, transcribed and translated to English. "Mental maps" were drawn on tracing

paper overlaid on topographical maps of the Land Surveyor General, Mowbray. These were digitised and managed in ArcInfo, and displayed and analysed in ArcView, from where output maps were produced.

The results of this technique proved to be very useful and can certainly broaden the use of GISs in decision making and public participation. However, GISs alone cannot be seen as the solution to better development and better decision-making. Public participation is of the utmost value in facilitating and initiating these processes. Land use planning needs to be the responsibility and concern of all land users and owners at a local level, where GISs can be applied as a tool to provide easier and more effective analysis and results for the implementation of initiatives.

OPSOMMING

Tradisionele bo-na-onder besluitnemingsmodelle het in die laaste paar dekades baie ongewild geraak met die totstandkoming van instellings wat die publiek se mening hoog ag en demokrasie op grondvlak probeer bevorder. Nuwe benaderings en tegnieke poog nou om die publiek se mening in 'n onder-na-bo benadering tot ontwikkeling en besluitneming te integreer. Grondhervorming is basies die erns van die publiek, meer so as die staat. Grond is 'n ruimtelike verskynsel wat politieke beheer word maar deur die meerderheid gebruik word vir oorlewing asook ander doeleindes. Dit behoort op 'n tyd-ruimtelike basis op 'n geïntegreerde wyse vir beter beplanning en besluitneming ondersoek te word.

Geografiese Inligtingstelsels (GISs) word hoofsaaklik deur statutêre "kenners" gebruik in die evaluering, analise en kartering van grond en verbandhoudende verskynsels. Dit beskik verder oor die potensiaal om in besluitnemingsprosesse gebruik te word. Die vraag ontstaan egter hoe die publiek se menings en politieke strukture met 'n GIS verteenwoordig en gekarteer kan word ter verbetering van besluitneming op 'n meer demokratiese wyse. Die studie het nuwe metodes ondersoek waarvolgens mense op grondvlak se persepsies op nie-tradisionele maniere verteenwoordig en ondersoek kan word.

'n Sub-streek van die Laeveld wat geleë is in die Mpumalanga provinsie, is geselekteer vanweë die verskeidenheid grondeienaars wat daar voorkom. Die Kruger Nasionale Park is geleë in die oostelike deel van die studiegebied vanwaar sekere swart gemeenskappe gedurende die Apartheidsregime verskuif is. Direk wes hiervan lê die voormalige tuisland KaNgwane se Nsikazi distrik en wes daarvan twee areas, naamlik Nelspruit-Witrivier en Kiepersol-Hazyview, waar die kommersiële boerdery van vrugte en groente op groot skaal beoefen word. In die noordwestelike gedeeltes van die studiegebied kom grootskaalse uitheemse bosbouplantasies voor wat aan Safcol en Mondi behoort. Met die stygende aanvraag na grond vir residensiële- en landbougebruik in die streek, veral vanuit die Nsikazi distrik, is grondhervorming en die toepassing daarvan, 'n probleem, indien nie 'n bedreiging, vir die meeste grondeienaars.

Onderhoude is met blanke manlike kommersiële boere, in albei die kommersiële streke gevoer om hul menings en kennis van grondhervorming te ondersoek. Verskeie temas is

as besprekingspunte gestel, naamlik die geskiedenis van gedwonge verskuiwings, grondgebruik, grondpotensiaal, water hulpbronne en waar hul meen grondhervorming sou moes plaasvind. Onderhoude was in Afrikaans opgeneem, getranskribeer en in Engels vertaal. "Kognitiewe kaarte" was op deursigtige papier geteken wat oor 'n reeks topografiese kaarte van die gebied gelê is. Die resultate is versyfer en in ArcInfo gemanipuleer en daarna in ArcView ontleed en vir verslaglewering gekarteer.

Die resultate van die tegniek belooft om vir beide besluitnemers en die publiek as deelnemers in die proses baie bruikbaar te wees. Dit verbreed ook die gebruik en toepassing van GIS's en die sisteem se vermoëns. GIS's kan egter nie alleenlik aangewend word om ontwikkeling en besluitneming vir die publiek beter of meer aanvaarbaar te maak nie. Alle mense se deelname is van die uiterste belang en waarde in die inisiëring, fasilitering en implementering van strategieë en projekte. Grondgebruiksbeplanning moet die verantwoordelikheid van almal word wat grond op plaaslike vlak gebruik of besit, nie net van die wat deur 'n probleem of program, soos grondhervorming, geraak word nie. 'n GIS kan aangewend word om die prosesse van ontwikkeling en besluitneming te vergemaklik deur analyses vinniger en op 'n meer effektiewe manier te ondersoek vir beter en meer demokratiese besluitneming.

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"The landscape as it is, is the monument apartheid has left us."

(Mr Steven Hearne, Mpumalanga, 1998)

¹ "CiGIS seeks to broaden the use of digital spatial data-handling technologies with the objective of increasing the number and diversity of people who participate in spatial decision-making" (Weiner & Harris 1999:7).

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ACRONYMS

ANC	African National Congress
ARC	Agricultural Research Council
CiGIS	Community-Integrated Geographical Information Systems
CSIR	Council for Scientific and Industrial Research
DLA	Department of Land Affairs
DWAF	Department of Water Affairs and Forestry
GIMS	Geographical Information Management Systems
GIS	A Geographical Information System
GISs	Geographical Information Systems
HSRC	Human Sciences Research Council
ISCW	Institute for Soil Climate and Water
KNP	Kruger National Park
LAPC	Land and Agricultural Policy Centre
MAR	Mean Annual Rainfall
MSL	Minimum Subsistence Level
PLI	Public Land Inventory
PR	Participatory Research
PRA	Participatory Rural Appraisal
PTP	Post-transfer Projects
RDP	Reconstruction and Development Programme
RRA	Rapid Rural Appraisal
RSA	Republic of South Africa
SA	South Africa
SADF	South African Defence Force
SADT	South African Development Trust
SAFCOL	South African Forestry Corporation Ltd.
SAP	South Africa Police
SAPS	South African Police Service
SLAG	Settlement and Land Acquisition Grant
TLC	Transitional Local Council
USA	United States of America
WVU	West Virginia University

CHAPTER 1: SOCIAL RESEARCH AND GEOGRAPHICAL INFORMATION SYSTEMS

1.1 A BOTTOM UP APPROACH TO DECISION-MAKING

In a traditional top-down approach to decision-making the analysis of data related to political, economic and social issues are normally done by so-called “experts” (Chambers 1997). These are people who have studied a field or discipline and now occupy a position on a higher level of a bureaucratic organisation. Through their use of technology and education the masses are deprived of participation in decision-making due to their lack of skills or access to these resources. The public is presented with numbers or statistics in reports of decision-makers and confronted by decisions taken. This often leads to protest against decisions taken in a top-down fashion, resulting in compromises or compensation.

These conflicts have moved decision-makers towards acknowledging the voice of the masses. The shift began, for example, with the new-populist ideology and alternative research methods such as rapid rural appraisals (RRA) and participatory rural appraisals (PRA) in the 1970s (Levin & Weiner 1997; also see Pretty 1995). Through this movement the conventional top-down model was replaced by a bottom-up approach and “development from below” strategies (Morris 1998). Various techniques were explored to access the information people possess at grassroots level. Oral histories, mental mapping and interviews brought in the views of the local experts, and researchers gained insight into what people’s perceptions on issues such as land were, their concerns, and how some of their perceptions shape(d) the landscape in certain ways (Chambers 1997; Mather 1996; Morris 1998; Pretty 1995). Resistance at ground level to nationally developed and formulated policies, programmes and strategies were better understood and the urgent necessity of including these on most levels of decision-making was realised.

Robert Chambers is one of the advocates of a *bottom-up* approach (Chambers 1997). He believes an element of the mid-1990s for the achievement of wellbeing, equity and sustainability is “facilitating participation, with approaches which are bottom up with processes of learning, rather than top-down with blueprints” (Chambers 1997:11). Participation will enhance greater understanding of the multiple rural realities, which isn’t

the case with conventional questionnaire surveys. Surveys “entail interpersonal relationships of power, distort peripheral realities and fit them into centrally pre-set frameworks” of professionals (Chambers 1997:93). He values RRA and PRA as being democratic, empowering and inclusive (Chambers 1997:151) and says that it entails two main types of exploration namely thematic or general (Chambers 1997:125). Maps are described as a spatial dimension of expressing and analysing complex realities (Chambers 1997:135) and he proposes new ways of interaction between researchers, professionals or people with high status, and those with low status, for accommodating change.

Participation and the presentation of multiple realities, perceptions and needs of people are, however, extremely problematic. The production of voluminous reports of either a descriptive or statistical nature is difficult to review for both the decision-makers and the public who have restricted access to these reports, or cannot understand the scientific jargon and feel intimidated or antagonised by it (Khan 1998). Furthermore, decision-making on issues with time and spatial components is limited when the data are reported only in written or statistical format and this can often lead to inappropriate or incorrect decisions by the decision-makers. To improve decision-making and enhance more open communication both ways, approaches need to incorporate spatial and temporal dimensions and represent them to the decision-makers and the public in a clear and simple way.

1.2 LAND AND DECISION-MAKING

The political structures engaged in decision-making and planning with regard to land have mostly adopted a top-down approach. A hierarchy is established in that land is allocated to different governing bodies, with policies that regulate and divide ownership of land. Planning can, however, only occur on a local level with the assessment of resources available and the needs of those living within a certain area or district. Yet land policy is dependent on a national governmental structure. In the large bureaucracy of government it is difficult to adopt policies and laws continually to meet local needs, and hence local planning is limited by policies from above.

Land ownership and governing structures are dynamic over time. Certain paradigms prompt structures to follow particular patterns; the most recent of these in South Africa is

the movement towards full democracy. Even though the ideal of democratisation was to acknowledge the individual and his/her rights, land was used to benefit minorities at the top of the hierarchy in terms of power and status, and indirectly to control the masses by restricting their access to or depriving them of land and land rights. Democracy therefore becomes imbalanced or selective through the top-down approach, which is still evident in governments all over the world.

A growing population over the world and simultaneous increase in the need for land pressures governments to review land rights and ownership, especially in those countries which were previously under colonial rule. As land is a "a symbol of authority and a source of political power" (World Bank 1975:9), the change of political power at the top will lead to new structures in land ownership. "Land reform is concerned with changing the institutional structure governing man's relationship with the land" (World Bank 1975:3). It "involves intervention in the prevailing pattern of land-ownership, control and usage in order to change the structure of holdings, improve land productivity and broaden the distribution of benefits" (World Bank 1975:5).

1.3 LAND IN SOUTH AFRICA

South Africa's history of land possession has taken a different path from the rest of Africa where land reform of colonial structures took place during or soon after, the Year of Africa. In 1948 the Afrikaner National Party came into power and implemented the idea of separate development for each racial group. The apartheid system deprived and dispossessed non-whites of land in order to achieve the aims of separate development. Full democracy was first introduced with the general elections of 1994, when the African National Congress (ANC), which had been opposed to the former apartheid government, gained the majority vote. The Reconstruction and Development Programme (RDP) of the ANC set out the goals of the new government, which included the upliftment of communities out of poverty and addressing the inequalities of the past, such as unequal access to land (ANC 1994).

Dispossession of land in South Africa occurred over a period of "300 years under settler and colonial rule and then for another 40 years under the apartheid government" (DLA 1999:103). The Land Acts of 1913 and 1936 dispossessed African communities of their

land and land rights (Levin & Weiner 1997). The South African Development Trust (SADT) was created to govern the so-called Black homelands, including the Transkei, Ciskei, Venda, Bophuthatswana, Qwa Qwa, KwaZulu, KaNgwane, Lebowa, Gazankulu; according to the RSA yearbook of 1996 (South Africa 1996) this land consisted of over 61 983 hectares. During the period of 1960 to 1984 the South African Police (SAP) and South African Defence Force (SADF) were employed in the removal of "black spots" (Levin & Weiner 1997) whereby approximately 3,5 million people were moved to the homelands (DLA 1997b). The 1990s, under De Klerk's rule, saw the privatisation and integration of 2 million hectares of land from former homelands into the broader South Africa (originally 1 127 299km²). In the past 1,2 million black households were allocated to 17 million hectares of land (De Wet 1997). According to the NLC the need for land was estimated in 1998 to be 1,76 million black households in need of 23,6 million ha of agricultural land (Landbouweekblad 1998 22Mei p88). Now the need for land must be immense.

"Despite newly won political freedoms, approximately one-half of South Africa's 43 million people – and two-thirds of its African population – still live in deep poverty" (Levin & Weiner 1997:5). In 1989 52,7% of Black people were estimated as living below the Minimum Subsistence Level (MSL); more than 60% of these people lived in the homelands (Levin & Weiner 1997:31). South Africa's unemployment rates have been estimated in the last decade as between 40 and 50 percent, and it is the rural poor who have suffered most in the current unstable economy. A survey done by the Land and Agricultural Policy Centre (LAPC) found that 74 to 85 percent of communities interviewed needed land for pasturage, agricultural production, and residential and business sites (Levin & Weiner 1997). It is therefore essential to give people access to land as a way of alleviating poverty and unemployment.

Literature on "the land question in South Africa" (De Klerk 1991; Matlhape & Münz 1991) has so far centred around various categories, with the main focus on agrarian land reform (Matlhape & Münz 1991; Van Zyl, Kirsten & Binswanger 1996), policies and legislature (De Klerk 1991; Matlhape & Münz 1991; Minnaar 1991), the laws that induced inequality (Matlhape & Münz 1991; Minnaar 1991), tribal community land ownership (De Klerk 1991) and gender issues revolving around women and agriculture or within a tribal system (Marcus in De Klerk 1991; Matlhape & Münz 1991; Meer 1997). White commercial farmers usually fell into the category of agrarian literature with an economic and business analysis

of production per capita and contribution to wealth and income. Statistical reports on land reform is continually published by the Department of Land Affairs (DLA) and case studies in land reform within the period of the pilot land reform programmes and thereafter, has focused on non-whites as beneficiaries or potential beneficiaries and their struggles in obtaining land.

Participation in the land reform and decision-making processes has been called on since the start of the decade. Claassens and Dolny call for community participation in the South African land question in the formulation of new policies and finding better techniques of co-operation (Matlhape & Münz 1991) as well as Cooper in De Klerk (1991). Claassens specifically expresses the need to know who lives where, what is their relationship to land and perception of land rights in assessing the land problem in South Africa. Von Blanckenburg (1994) has in his study in Zimbabwe in 1991 and 1993 investigated commercial farmers' attitude to the governments' land reform programme and asked them to propose alternatives for the equalisation of land distribution. The research was done by a questionnaire survey with no exploration of the spatial dimension of respondents' perceptions. In comparing Zimbabwe to South Africa, Cloete (In Minnaar 1994:99) said that one of the lessons to be learned from Zimbabwe is "... the involvement of the local and regional communities and effective community participation [which] are important in order to maximise participatory planning and minimise resistance... ."

1.4 PERCEPTIONS OF LAND

Beliefs and perceptions shape cultural interactions and hierarchies. With his "development from within strategy", Dr Fraser Taylor argues that the interactions between man and nature is dependent on the social relationships within a community as well as their "indigenous knowledge of localities" within a defined territory (Levin & Weiner 1997:12). But he points out that "land has different meaning for different people ..." (Levin & Weiner 1997:98). It is exactly these social factors that are difficult to denominate in reams of statistics that emerge in huge written reports or books on various cultures.

Interactions are based on perceptions derived from various sources of information which might include historical events, cultural and traditional belief patterns, ways of survival or even possibly the need to attain status and power in a community. Different perceptions on

the meaning of land and how it should be used can lead to conflict. This is particularly evident between certain groups in South Africa: those who view Western capitalism and modernisation as means of survival, and those who favour a non-Western, non-capitalist "traditional" approach to land and living. A similar situation was studied by Hugo (1995) who found the main conflict surrounding Zimbabwe's land reform debate at local level being that of land communal versus individual land ownership. Conflict arises over the way land should be used and they can only be settled by enforcing laws and policies, or by acceptance of differences and/or compromises.

Conflicting beliefs on land use is most evident in rural agriculture where practice is divided into two categories. Large-scale commercial farming of export crops with high capital turnovers is traditionally viewed as successful and as an optimal utilisation of land which is to the benefit of the country as a whole. Subsistence farming was associated with poor Third World countries and viewed as an inferior practice (Netting 1977:58). A discrepancy arose due to this belief; the former government subsidised commercial farming and eradicated subsistence farming, leaving 55 000 commercial farmers (97% white) with 102 million hectares of land, as opposed to 17 million hectares of land for 1,2 million black households to live and farm on (De Wet 1997, see also Sweyiya in Matlhape & Münz 1991:129).

Balancing this imbalance can only be initiated through laws and policy. Making land accessible via policies and law, however, does not change belief systems. Resistance to governing structures might flame up. But it is a very important step to challenge old belief systems and give those in need the opportunity to provide for their own needs and the right to make a living in the way they believe is best. Planning on local level is very important to assist in sufficient and practical land reform. Statistical reports can now prove to be inadequate as they lack the means of incorporating the spatial dimension of land, which is essential in decisions to be taken for current and future land-related issues. Spatial analysis and maps produced from such analysis can be highly beneficial to the planner or decision-maker operating at local level as well as the communities within a particular area.

1.5 GEOGRAPHICAL INFORMATION SYSTEMS, LAND AND DECISION-MAKING – THE PROBLEM

Geographical Information Systems (GISs) integrate the spatial dimensions of earth with digital information on features such as land, water and boundaries. This is useful in analysing these features, and although the temporal dimensionality of GISs is still being developed, it is being used increasingly to assist in decision-making. At this stage GISs lack the functionality to depict the needs, demands, perceptions and interactions of the populous in any other way than as yet another database of demographic statistics, associated with boundaries of countries, states or, on local level, of districts and houses in a very generalised way. Bringing a GIS to the people might be impossible, but incorporating data about needs, demands and perceptions of people into a GIS is the challenge.

Conventional assessment of land in a GIS is based on physical characteristics, political boundaries, economical activities and demographical properties related to it. Land potential, use, ownership, topography, and water can be analysed easily on a large scale and an integrated manner. People's perceptions of land cannot be analysed in this way, consequently GISs is still limited to use by the technologist and small groups of decision-makers in a very centralised way. To employ GISs for land reform purposes, it is of the utmost necessity to take people's perceptions of land into account. The value of the assessment of the problem and possible solutions will be increased by doing so and benefit the decision-maker and the communities affected.

In John Pickles' book, "Ground Truth" (Pickles 1995), various readings on the social implications of GISs are given, including its new disciplinary discourse and use as a social practise, the diffusion and empowerment within it's communities and the role of facilitating democracy. Taylor and Johnston (In Pickles 1995) argue that GISs are a direct outgrowth of the quantitative revolution. According to Pickles, prescribe applications are limited and conservative and empowers data gatherers. It questions the use of GISs in other types of geographies such as human geography where the goal is usually the enhancement of mutual understanding and awareness of realities and not the manipulation of people (Pickles 1995:55). Harris, Weiner, Warner & Levin (1995) continues this debate within the context of anti-development discourse and argues that GISs is yet another tool to

manipulate data and data of people which centralises power and decision-making in top-down operations. They introduce the concept of “participatory GISs” and the utilisation of GISs in a bottom-up approach for restructuring and social transformation in post-apartheid South Africa. Some of the objectives of participatory GISs were to enhance community/development planner interaction in a research and policy agenda setting, the integration of local knowledge with exogenous technical expertise and spatial representation of relevant aspects of local knowledge.

The use of GISs in the land reform process is as limited as its use in participatory research in South Africa. From the literature survey it appears that no research has yet been done on white commercial farmers’ views of the land reform process in South Africa. It is therefore the purpose of this study to investigate the possibility and capability of incorporating large-scale commercial farmers’ perceptions on land and land reform in a GIS for decision-making purposes following a bottom-up approach. Weiner & Harris investigated the idea of a “Community-Integrated GIS (CiGIS) for land reform in Mpumalanga” in a more comprehensive research project. Appendix A contains the outline summary of the CiGIS project’s objectives. (For more information on the subject, please refer to the following: Craig, Harris & Weiner 1999; Harris & Weiner 1997; Harris, Weiner, Warner & Levin 1995; Weiner & Harris 1999; Weiner, Warner, Harris & Levin 1994.)

The objectives of this research are to:

1. Investigate the possibility of obtaining spatial information through thematic exploration of perceptions on land reform for the purpose of participation in decision-making;
2. Assess the way in which GISs can assist in presenting and analysing this information;
3. Assess the value of this methodological approach and potential application of GISs in the future within a participative bottom-up approach to decision-making;
4. Identify structural needs and implications of such an approach; and
5. Discuss the current and potential problems of this methodology.

The steps to achieve the objectives of this study are outlined below:

- Identify an area where land reform is a concern of both experts and people at grassroots level;

- Identify and select a group of potential participants from the large-scale commercial farming community to interview;
- Conduct a thorough literature research into land reform: knowing who is affected, where, how, and to what degree;
- Establish a reliable network base in the community; initiating and presenting the research to those who are interested and affected;
- Gather relevant spatial information in the form of digital and non-digital datasets from companies;
- Gather information on the same subjects from the community, and ascertaining their knowledge and perceptions of them;
- Integrate and present both types of information in a GIS;
- Assess the capability of GISs to integrate and present both technical and local experts' data, its possible uses, and how this information can assist in improving decision-making.

Chapter 2 presents a summary of the land reform programme of the new government of national unity, with details on the land reform projects managed so far nationally and focusing on the Mpumalanga province where the case study area is located. Ownership and land reform projects in the study area are given as well as the methods of how participants were selected within the area and the way research was conducted. Chapter 3 focuses on the results of the themes that were explored during the interviews relating to land and land reform issues. Chapter 4 concludes with comments on the methodology, structural needs of participation and the potential problems it entails.

CHAPTER 2: LAND REFORM, PEOPLE'S PERSPECTIVES AND GIS DATA REQUIREMENTS

In this chapter an overview of the land reform programme is given with national and provincial statistics on land reform. The study area is located in Mpumalanga's Lowveld district and land ownership is investigated within this area as well as current land reform projects. The methods of selecting participants from the large-scale commercial farming community and conducting interviews are covered at the end of the chapter.

2.1 LAND REFORM IN SOUTH AFRICA

The following section deals with the issue of land reform at a national level as well as in the Mpumalanga province. The study area is demarcated and discussed in terms of physical and cadastral characteristics, landowners, the commercial farming community and their involvement in land reform.

2.1.1 The land reform programme

Since 1994 the DLA has been active in drafting a policy on land reform as one of the means to contribute towards national reconciliation, growth and development in accordance with the ideals set out in the RDP (DLA 1997a:8). In an attempt to redress the injustices of historical settlement patterns, and to alleviate the endemic poverty and suffering persisting in the RSA, the government's vision was to balance land ownership without disrupting existing economic structures. One of the ideas applicable at rural level, for example, was to balance a mix of farming systems and rural enterprise (livestock, annual and perennial crops as well as farm-forestry) with land uses under a variety of forms of tenure by individuals, companies and communities (DLA 1997b:11). Nationally the strategy was launched with three main programmes in pilot phases. The three programmes that have been active for the past five years are *redistribution*, *restitution* and *tenure reform*.

The *redistribution programme* is based on a market system of supply and demand of land and entails a process whereby the government provides a Settlement and Land Acquisition Grant (SLAG) of R15 000 per household to purchase land for residential and

productive purposes. Potential applicants have to form a legal entity before approaching the DLA for a SLAG. Approximately 13 500 families were targeted in pilot programmes for each province (De Wet 1997). Households with an income less than R1 500 per month qualified for the grant and priorities were set to address the needs of the poor, marginalised and woman-headed households (De Wet 1997:358).

Originally the DLA was not intended to be involved: "Rather than becoming directly involved in land purchase for the land redistribution programme, it will assist via grants of R15 000 per person [and] emphasise the need ... to generate additional funds for those wishing to enter the commercial farming sector" (DLA 1997b:vii). However, seeing that it was acting as mediator between the beneficiaries and was purchasing land from landowners or trusts, as well as being engaged in post-transfer help, its involvement was inevitable. By 1999 the SLAG was increased to R16 000 and 9% of it was channelled into a Planning Grant (DLA 1999:108). Consultants from within the DLA or other private companies assisted in drafting business plans for beneficiaries. Appendix B shows an example of such a plan.

Various forms of land redistribution emerged by 1999, including group settlement with some form of production, commonage schemes, on-farm settlement, share equity schemes and other policy innovations (DLA 1999). The DLA further hopes to establish more linkages between private business and the beneficiaries for financial support, as the R32 million contributed to this programme so far is not sufficient. International donors such as the European Union and Denmark have contributed R31 million (DLA 1999:109). The DLA also intends to move the responsibility of granting the SLAG to the Land Bank. Approximately half a million hectares of land have so far been redistributed to 200 000 beneficiaries (see Appendix C).

The second land reform program is a judicial process called *restitution*, which is aimed at returning or compensating victims of the discriminatory Land Acts, including those dispossessed or forcedly removed since 19 June 1913 (DLA 1997b:vi). Claims were to be submitted to the Commission on Restitution of Land Rights and persons had until 31 December 1998 to lodge their claims. By the cut-off date 54 218 claims had been lodged with the Commission and more were coming in. Twenty percent of the claims were estimated to be rural and the rest urban. Verified claims amounted to 3 915 and 284 were

rejected (DLA 1999:104). The Malekuleke community (10 000 people) managed to settle a claim of 27 700 ha of ancestral land, which now forms part of the Kruger National Park. By the end of 1998, 11 359 households were beneficiaries of 167 534 ha of land (DLA 1999:104).

The *labour tenants programme* is intended to provide protection to labour tenants against unfair eviction of land, and it gives them the right to acquire ownership of either the land they currently occupy and use, or of alternative land. In addition to this *Land Tenure Rights* were to be upgraded to ensure that people are able to choose a tenure form according to their needs (DLA, 1997a:11). These laws are administered by the DLA and work is continuing on other related legislation to ensure the security of all workers and labour tenants (DLA 1999:105).

2.1.2 Land reform projects at national level

The slow progress of land reform is ascribable to various reasons including constraints on government capacity, inadequate systems for implementation of the policies and legislation, insufficient political commitment at provincial level and inadequate assistance in development of the land after transfer due to limited funds. Difficulties in the labour tenant programme were identified as a lack of communication and training in order to inform both landowners and labour tenants of their rights and obligations, a lack of staff at provincial level or district level to facilitate implementation, and a lack of legal aid and support for the tenants to enforce their rights (DLA 1997a:10).

Although there were many difficulties during the trial period, credit must be given to the DLA for initiating new legislation, the creation of a whole new departmental structure and piloting a large number of new projects whereby a cumulative amount of 456 331 hectares of land was designated for land reform in a period of only five years. In 329 projects 37 004 households benefited (DLA 1999:108).

2.1.3 Land ownership

Although the state is facilitating land reform on the national and provincial levels, it is not the sole owner of land in South Africa. It is unclear exactly how much land is owned by

whom, because statistics are either faulty or constantly changing. The 1996 RSA yearbook indicated that state land comprised a total of 788 744 ha and former SADT land 691 407 ha (South Africa 1996:123). Commercial land purchased from insolvent estates amounted to 92 343 ha and land leased to farmers 365 582 ha with 230 357 hectares of land vacant or utilised by tribes (South Africa 1996:123). Commercial farming had also decreased from 100 000 farmers to 60 000 over a period of thirty years prior to 1996. In May 1995 it was estimated that there were 70 000 small farmers and 500 000 subsistence farmers in the country (South Africa 1996:115).

In 1994 the DLA started with a Public Land Inventory (PLI), which covered state land registered in the name of the Minister of Land Affairs, land held in trust by the Minister and land used for public purposes comprising land used by parastatal bodies and local sphere government bodies (DLA 1999). By 1998 the PLI contained a total of 758 860 land parcels in a GIS. Unfortunately this does not contain any information on the private utilisation of land, or even deeds rights to land, as some land parcels have primary mining rights on them, but are leased to and used by farmers or the forestry sector. Even though the GISs produced over a thousand maps for land reform purposes, it is difficult to perceive how land reform can be facilitated without spatial knowledge of what is where and owned by whom.

2.2 LAND REFORM IN THE MPUMALANGA PROVINCE – THE STUDY AREA

The selected case study area falls in the Mpumalanga province of South Africa (see Figure 2.1). The province covers a total area of 84 598 km², which comprises 6,9% of the RSA (*The Mpumalanga Report* 1997). It is one of the provinces with the largest intensive commercial agriculture, where approximately 38 700 ha of land is under irrigation. Forty-two percent of South Africa's high-potential land, and 16% of its medium-potential arable land is located within the province (Vermaak 1998). According to statistics of the Soil and Irrigation Institute, 70% of Mpumalanga's arable resources were not utilised in 1989 (Vink 1998). With a population of over 3 million people, and a population growth-rate over 2.2% per annum, the need for land is constantly increasing. Population density averages at 37,5 persons per km², of which 46% live in the former homeland, which consists only of 10% of Mpumalanga's surface area.

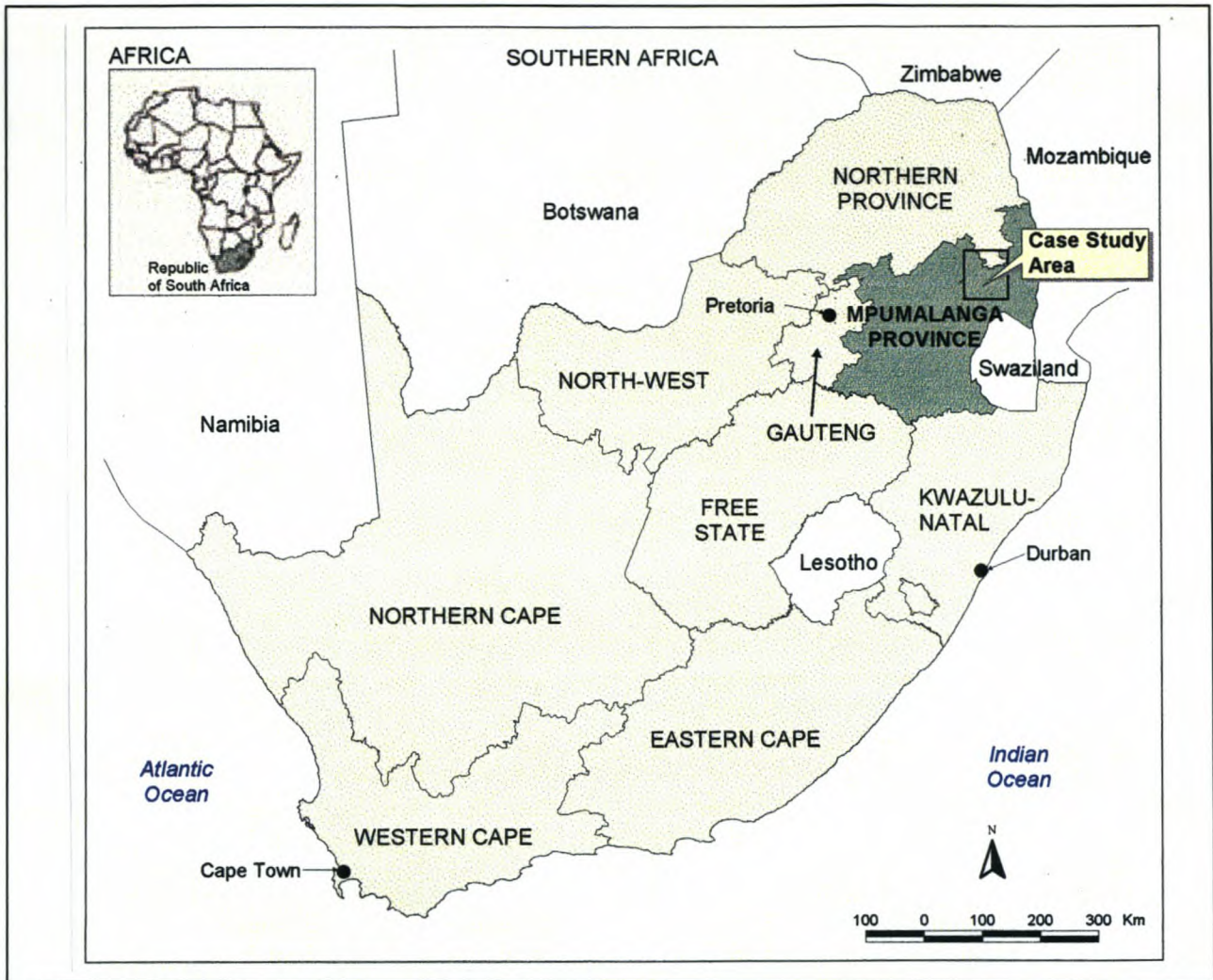


Figure 2.1: Location of case study area

The province is divided into three general regions (see Figure 2.2), namely the Eastvaal, the Highland and the Escarpment (CSIR 1996). The study area selected for this thesis is situated in the latter region, where the elevation drops drastically from the escarpment into the Lowveld, consisting of the White River, Nelspruit and Barberton districts. The study area is located between the $30^{\circ}45'$ and $31^{\circ}30'$ eastern longitudes and $24^{\circ}45'$ and $25^{\circ}30'$ latitudes in the southern hemisphere.

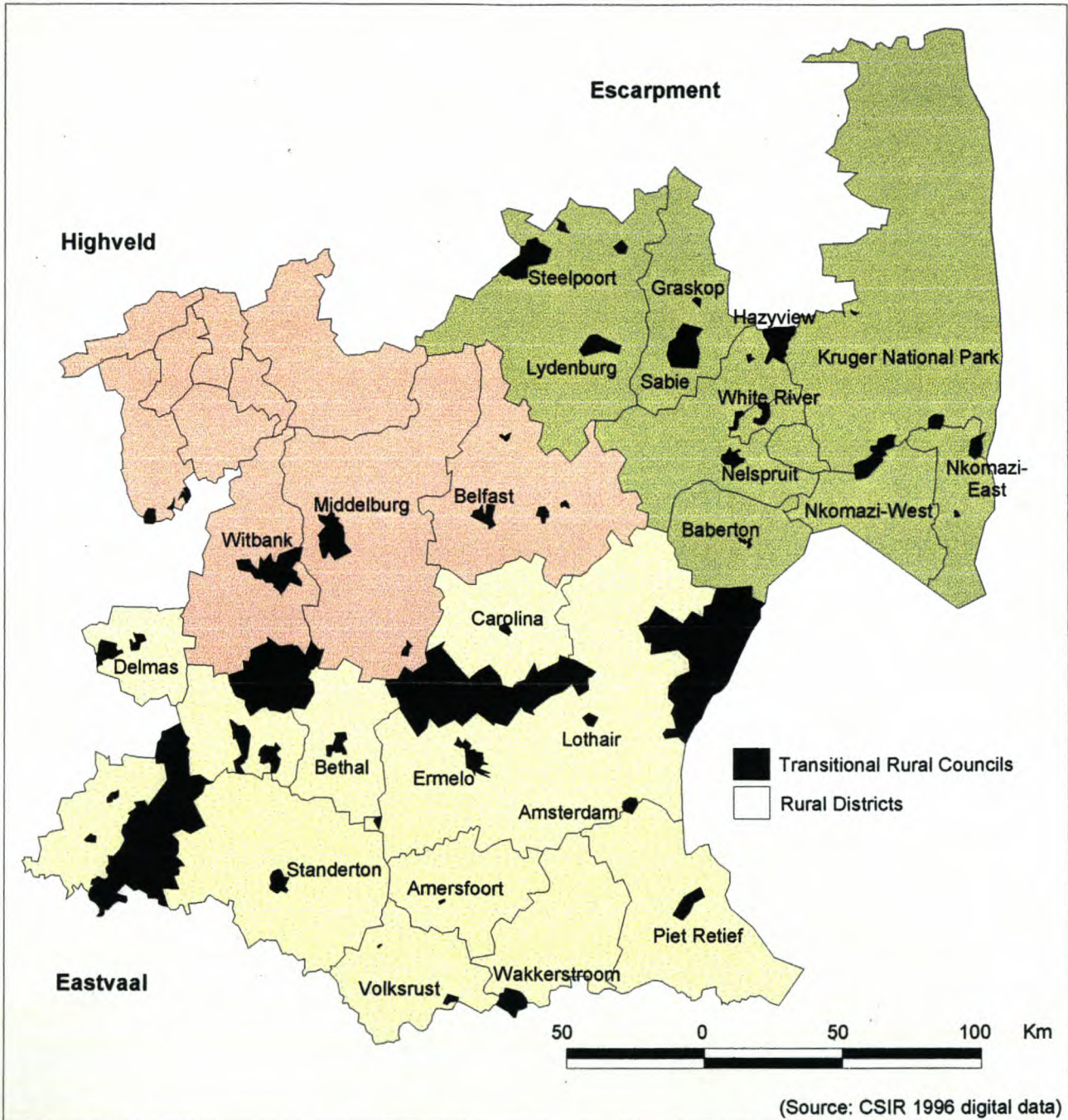


Figure 2.2: Mpumalanga regions and districts

Mpumalanga has dealt with 309 redistribution cases since 1995, 15 restitution cases and 376 tenure cases, of which 146 were registered in 1998 alone (DLA 1999:151). (See Appendix D for further details.) "One of the challenges of land reform is to relieve land pressure without extending environmental degradation over a wider area" (DLA 1997b:vii). Land pressure and need are highest in the former SADT regions of Lebowa, Gazankulu and KaNgwane. These are included in the sub-region as well as other types of land owners such as the state, private large-scale commercial farmers, the Kruger National

Park (KNP) and forestry companies, which are all now under pressure to release land for land reform purposes.

2.2.1 The Lowveld case study area

The area chosen for the case study is mainly located within the Lowveld region of Mpumalanga. The boundaries of the areas were based on a series of topographical maps of the Chief Directorate Surveys and Mapping (DLA) at a scale of 1:50 000, as can be seen in Figure 2.3 below.

Graskop 2430 DD 1986 (2nd edition)	Bosbokrand 2431 CC 1986 (2nd edition)	Newington 2431 CD 1986 (2nd edition)
Sabie 2530 BB 1986 (2nd edition)	Kiepersol 2531 AA 1984 (2nd edition)	Pretoriuskop 2531 AB 1984 (2nd edition)
Nelspruit 2530 BD 1984 (2nd edition)	Witrivier 2531 AC 1984 (2nd edition)	Gutschwa 2531 AD 1984 (2nd edition)

Figure 2.3: Reference maps to case study area

2.2.1.1 Physical description of sub-region

“The Mpumalanga Sub-Region is located in the transitional area between the highveld plateau (>1200 m altitude) and the lowveld (200-600 m altitude), which extends eastwards to South Africa’s border with Mozambique. It is bounded on the west by the Drakensberg escarpment; altitude falls from over 1000 m at Graskop to around 600 m at Hazyview to about 250 m at Skukuza, which is located within the Kruger National Park ... This is accompanied by a sharp decrease in rainfall and increase in temperature, producing a change in climate from sub-humid on the escarpment (mean annual rainfall, 500-700 mm). Rainfall is strongly seasonal, with precipitation concentrated in the December-March

summer months" (Levin & Weiner 1997:75). See Figure 2.4. for a three-dimensional view of the study area.

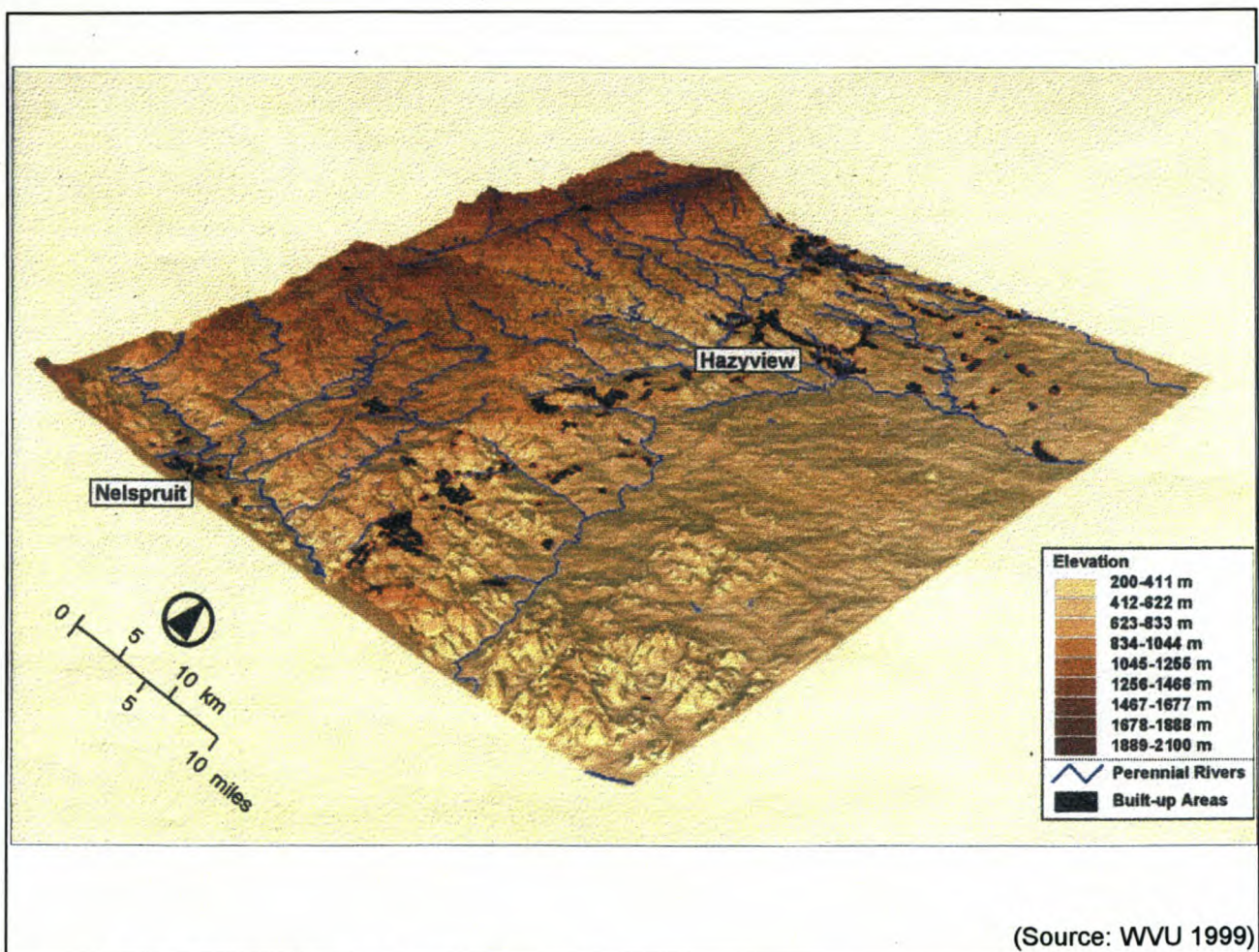


Figure 2.4: Topography of the study area

The Nelspruit and White River districts in the Lowveld, are known for their commercial production of various agricultural crops under irrigation (see Figure 2.5), including subtropical fruit, like citrus, mangoes, macadamia nuts, bananas (Figure 2.6), avocados, litchis, papaws, guavas and grinedillas; other products include tobacco and sugar; there is also a forestry industry (see Figure 2.7) with exotic plantations growing pine, gum and wattles. Industrial plantations were estimated in 1997 to comprise 25 348 ha industrial and 11 929 ha natural forests (DWAF 1997:11).



(Source: WVU 1998)

Figure 2.5: Irrigated lands, Nelspruit district



(Source: WVU 1998)

Figure 2.6: Banana plantations, Hazyview



Figure 2.7: Exotic forest plantations, Sabie

2.2.4.2 Cadastral boundaries and land owners

The Lowveld accommodates a variety of land owners; the main four categories are the KNP in the eastern part, the former KaNgwane homeland district, Nsikazi, to the west of that, private land owners who practise large-scale commercial farming, and to the north-west in the region on the escarpment lie the large forestry plantations mainly operated by Safcol and Mondi. Figure 2.8 indicates the border of the Nsikazi district with the commercially irrigated farms.



Figure 2.8 Border between commercial farms and KaNgwane

Figure 2.9 presents the classification of land according to the PLI database, combined with tribal land data from Cadnet (See Appendix E for metadata on digital databases).

Table 2.1 shows the estimations of hectares of the main land ownership categories for the study area as derived from the cadastral GISs' database of the PLI, integrated with a tribal land dataset of Cadnet, the Maputo Corridor Draft document (Vermaak 1998) and some information from private land owners. Although these estimations are based on an inaccurate and incomplete dataset, they do give an indication of land ownership distribution throughout the study area.

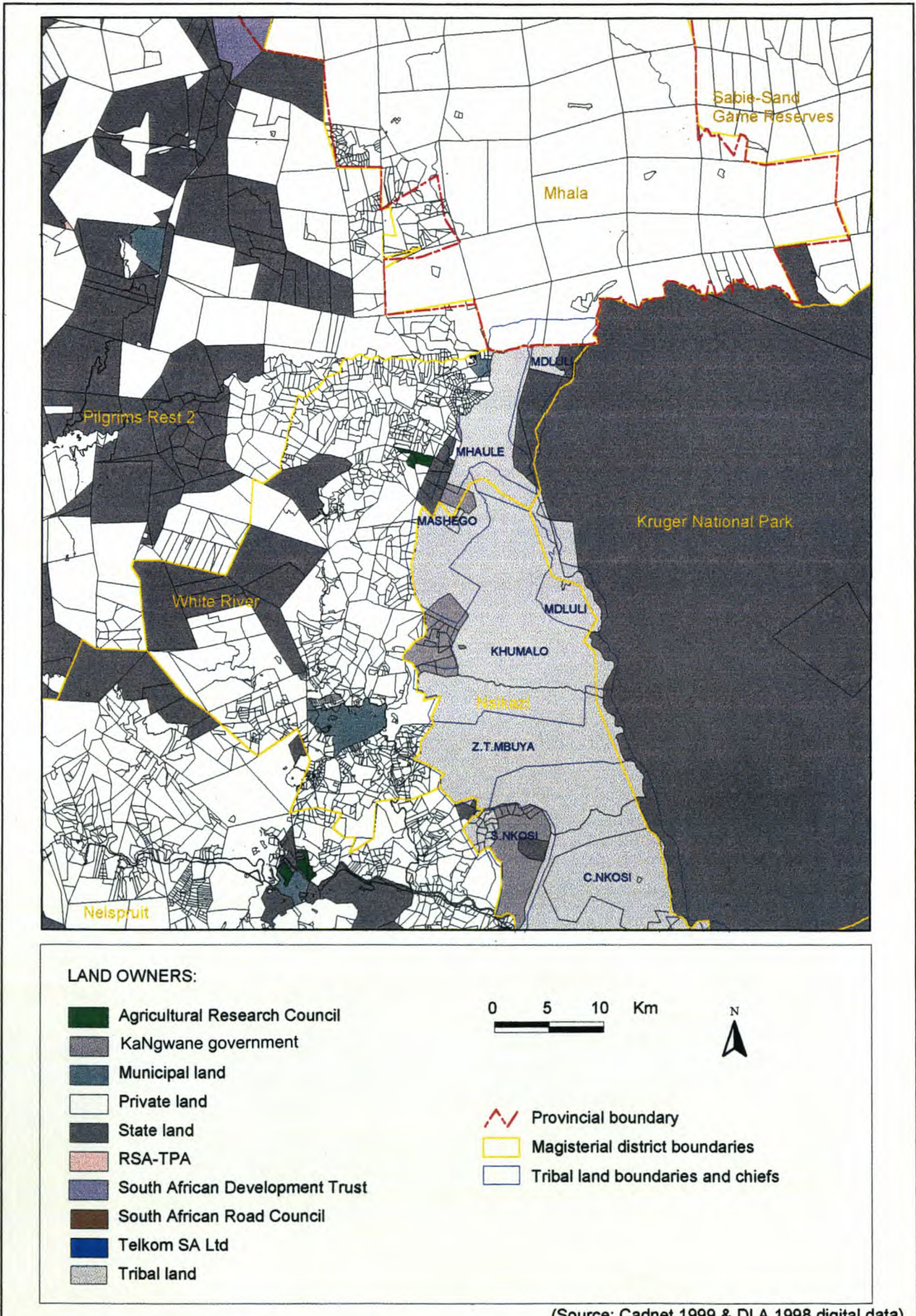
Table 2.1: Land ownership division in the case study area

Land owners:	Area in ha:	Percentage of total ha:
Agricultural Research Commission (ARC)	647,62	0,09
KaNgwane Government	6542,40	0,87
Municipal (TLCs)	3815,61	0,50
Private and other	322822,10	42,69
RSA	356198,63	47,11
RSA-TPA	39,72	0,01
SADT	2097,02	0,28
SA Road Council	12,72	0,00
Telkom	0,41	0,00
Tribal land	63957,30	8,46
TOTAL:	756133,53	100

What is definitely lacking is data on the land holdings of the forestry companies Safcol and Mondi. Although they were approached for datasets, land reform is a very sensitive issue and most land owners are hesitant to provide information on the amount of land that is owned and utilised. Thus the cadastral dataset unfortunately lacks proper divisions of land ownership. The South African government, presented as "RSA" in the table, however, has shares in Safcol and evaluated on the sizes of parcels and their location on the escarpment, more clarity can be obtained as to how much of this is forested land.

2.2.2 Land reform in and around the Lowveld sub-region

Land reform takes different forms in the sub-region of the Lowveld. As previously mentioned, some ancestral land is located within the boundaries of the KNP and possibly also to the west of the Nsikazi region. The private sector of commercial farmers was involved in land redistribution projects such as equity shares and joint ventures and even



(Source: Cadnet 1999 & DLA 1998 digital data)

Figure 2.9: Land ownership and cadastral boundaries in the study area

complete transfer to newly formed trusts of beneficiaries. Labour tenancy applies to the former SADT KaNgwane land and is needed for a large sector of farm labourers working on the commercial farms (DLA 1999:151).

Table 2.2 was derived from the DLA 1998 settlement report as well as from other unofficial documents from the DLA's provincial office in Nelspruit. The first three projects seemed to have been identified earlier than 1998 but they have probably not reached the phase of transfer as did the Hoogland, Legogoto and Masizakhe projects. Information on Sitama Impilo was drawn from the business plan as seen in Appendix B.

Table 2.2: Current land reform projects in the case study area

Project	District	Number of households	Ha of land involved	Number of people	Total land costs (R)
Canaan	Nelspruit	*	*	*	*
Buyelani Majabula	White River	*	*	*	*
Halls and Sons (Mattaffin Redistribution Project)	Nelspruit	*	*	*	*
Hoogland Close Corp.	Nelspruit	5	1	6	10 000
Legogoto	White River	26	16	130	350 000
Masizakhe	White River	80	29	360	1 200 000
Sitama Impilo Farmers Association Redistribution Project (Primkop)	White River	100	80,3	*	1 291 700

* Data not available

The DLA's provincial office noted the following critical issues regarding these land reform projects: pre-planning was poor; there was a lack of participation by provincial government and other role-players; delays in access to planning and support for post-transfer projects (PTP); weak capacity of the DLA and other role-players to provide support to PTP; ineffective legal and management structures of beneficiary communities; lack of communication and co-ordination between role-players in PTP; uncertainty regarding applicable legislative and approval processes for settlement and development plans; lack of effective mechanisms to transfer the balance of SLAG; and insufficient training and capacity-building programmes for beneficiary communities (DLA 1998:17).

A principle laid out in the 1997 annual report of the DLA stated that "(t)he participation of communities and individuals as partners with government and other agents is necessary. Decisions must be taken democratically at local level" (DLA 1997c:12). With the provincial DLA office equipping themselves now with GISs, the question arises of how to apply GISs

and simultaneously involve the communities affected. If it is possible to implement GISs as a tool to depict community perceptions and needs, then what datasets need to be accessible for analysis? The following section will consider only a few themes as a start to consider the means whereby land reform could possibly be managed through GISs.

2.2.3 Selecting themes related to land reform – data requirements

Some datasets are usually used as a frame of reference or for the orientation of the user. These are provincial boundaries, magisterial district boundaries, roads and urban areas (see Appendix E for metadata). In addition to these the physical features of the area can be used for traditional expert analysis including land cover, land types, natural water features and man-made water infrastructure. Cadastral boundaries of land including data on landowners as well as built-up areas were also obtained.

GISs are relatively new to South Africa and very few companies kept data of the area selected. Datasets obtained proved to be problematic in that they were in different formats and projections (lack of national standardisation at that time), sometimes not edgematched, cleaned and edited, and were captured at different scales from old sources prior to 1980 (hence lacking metadata). Old datasets are not necessarily a problem when working with physical resources such as rivers and contours, but man-made infrastructures like dams show an immense increase from the 1970 to 1980 topographical maps when investigated with a GIS at WVU. A huge issue of concern is the built-up areas derived from topographical maps of the 1980s, which were drawn from aerial photographs prior to this date. No map series of the 1990s were available yet whereby more recent built-up areas or land use patterns could be identified. Field trips through Nsikazi showed that there seem to be larger densely settled areas indicating that the maps on land use patterns were probably faulty.

Purchasing data also proved to be problematic and it took almost a year to purchase a base set from various companies. In some instances companies were reluctant to sell the data because of the sensitivity of the subject of land reform, or for other reasons not clear to the team. Databases were sometimes incomplete and inaccurate and consequently difficult to relate to other relevant datasets for analysis. In the case of the land cover data

there was also the problem of differentiating between reflectance curves of tree-crops (e.g. bananas) and trees (e.g. gums) from remote-sensed imagery.

Datasets also lack information on access to resources. Legislation, land and water rights restrict usage of resources to those who can afford to pay for it. Even though resources look quite close and accessible on maps, this may be deceptive for the decision-maker or reader who is unfamiliar with the area and who will therefore think in terms of abundance. Again the politics of the issue were a consideration and it is here that the community's involvement and knowledge were valuable.

A few land-related themes were selected in order to present maps to communities and to enable the team to question them on their knowledge and perceptions of the issue of land reform. The WVU project identified some black communities (see Appendix A) of the land reform projects as well as current large-scale commercial farmers. This study focuses on the discussions and interviews held with the latter group. The intention was to interview people on their knowledge of forced removals, issues relating to land such as land potential, land use and water, and then to enquire what they would consider appropriate areas for land reform. The interviews were taped with the consent of the farmers; topographical maps layered with tracing paper were used to draw on. Although not proper "mental maps" according to PR standards, as the maps force the interviewee to think in terms of a traditional map's frame of reference, the maps produced from these exercises will be referred to as "mental maps".

Some additional information emerged from discussions, which were extremely useful, but due to the constraints on this thesis only those selected above, with one more on the history of black locations, will be discussed in the next chapter. The next section will elaborate on the selection of commercial farmers in the case study area.

2.2.4 Selecting representatives from the community – the interviewees

According to the Land Bank approximately 26 large-scale commercial farmers were active in the Nelspruit district and 30 in White River up to 31/07/1998. Large-scale commercial farming in South Africa is predominantly white-owned (De Wet 1997:355). The interviewees were to be selected from these active white commercial farmers. Selecting

participants according to traditional spatial representative sampling methods was not possible as some owners own more land than others. These methods also ignore the existence of power structures within communities through which social research must filter to access participants.

A variety of factors were considered in order to establish a reliable network of possible participants. Firstly, the location of commercial farming occurs mainly in two regions within the study area, namely the Nelspruit-White River area in the south and the Kiepersol-Hazyview area to the north. A possibility was to select participants on the size of their farms, but unfortunately information on who owns land is difficult to access in advance. Type of farming in terms of crops is also not reliable as farmers change crops seasonally and according to market trends. Their involvement with land reform or the extent to which they are affected by it might restrict them to only one type of perception on the issues and not the whole range. Another issue that featured during the research is the position of the "farmer" in commercial agricultural ventures. The farm owner who holds the deeds, the managers and the shareholders of a trust are all involved in the farm and all are called "farmers", which is basically a description of an occupation.

Social research, however, takes a completely different approach to selecting representatives. Participants could be selected by walking down a road and knocking on doors, which in a South African context might be impossible due to fencing and distance. Opportunity sampling, whereby farmers are met by networking through contacts, was the best option for this type of research. Mr Fred Cronjé, an active farmer in the Nelspruit district who is well known for his conservation activities in the district and who received the Conserva Award of the Department of Environmental Affairs and Tourism in 1997, helped in identifying farmers in the Lowveld who might participate in the research. They were considered to be role-players and leaders in the community representing farmers on committees in the Lowveld and were large-scale commercial farmers. Participants were selected from the following existing unions and co-operations in Lowveld:

- Citrus Co-operation (Karino);
- Land Affairs Steering Committee;
- Lowveld district agricultural union;
- Lowveld Co-operation (private), (LTK);

- Lowveld Tobacco Co-operation;
- Mpumalanga Agricultural Advisory Council;
- Transitional Rural Council;
- Transvaal Agricultural Union.

The farmers identified (see Figure 2.10 for locations) were contacted by letter and phoned to set up personal appointments during which individual interviews and mental mapping were to be conducted. Of the 10 farmers selected, only 6 were willing to participate. One was not willing to participate due to the subject of the study and the others claimed not to have time as the fieldwork was scheduled for July 1998 during the harvesting of citrus fruit. One of the farmers interviewed refused to do the mental mapping exercises, did not want his name mentioned or listed and even limited the interview, which was not to be taped, to half an hour. Three more farmers were identified in discussions during fieldwork and a total of nine farmers eventually took part in the study. They were:

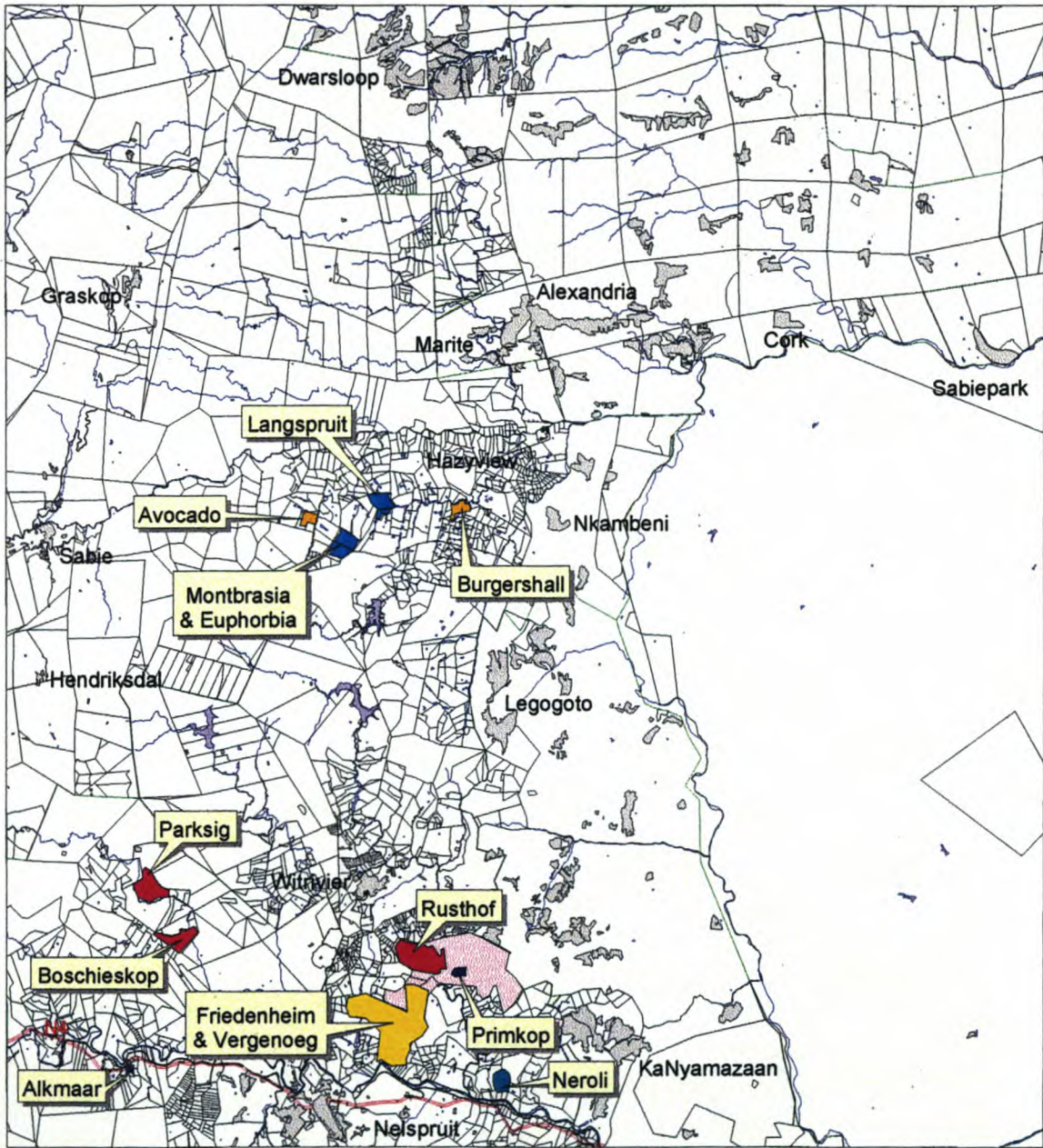
- Mr Fred Cronjé: Agricultural Union; Southern Lowveld Agricultural Union; Farmers Union; Rural Council; Steering Committee for Land Affairs; Agricultural Committee.
- Mr Steven Hearne: Was on agricultural credit committee (committee dispersed); trustee on various trusts (4); founder of Community Development Society; Chairperson of Burpac; Chairperson of Kiepersol Farmers union; Southern Lowveld farmers union; Board of Da Gama Oils; Advice committee of Agricultural College; Committee of nature reserve "Balule".
- Mr Jan Marais: Founding member of the Lowveld Tobacco Growers Society; Farmers Union; director of LKBB (Lowveld Co-operation Farmers Ltd.); director on Tobacco Bursary; director of Tobacco RSA.
- Mr Louis Marais and Mr Barney Pieterse, commercial farm managers.
- Mr Stefan Scheepers: Lecturer at Mpumalanga Lowveld Agricultural College in farm management.
- Mr Wilhelm Schmidt: Chairperson Districts' Agricultural Union.
- Mr Braam Raubenheimer: 1971-76 Deputy Minister of the former Bantu Affairs; 1966-84 member of parliament; Lowveld district Agricultural Union; former president of Transvaal Agricultural Union; Vice-Chairperson of Lowveld Co-operation; Lowveld Tobacco Co-operation.
- Mr Andeon Visagie: Board of Tobacco Coop; directions of Karino Citrus Coop; Management Board of High School. Mr Andeon Visagie was not available for the

interview himself, due to illness. His farm manager, Mr Hennie Olwagen, was interviewed. Mr Visagie passed away soon after our field visit.

2.2.5 Degree of involvement of farmers in land reform

An advisory committee of land reform exists on provincial level consisting of some officials of the DLA; Mr Fred Cronjé is involved as a representative of the White Farmers Union, and a black farmer, Papa Nkosi, from the Black Farmers Union. Appendix G contains various letters written by Mr Cronjé on behalf of the commercial farmers on the subject of land reform. This is the only direct and official involvement of commercial farmers in land reform aside from the possible equity scheme of Halls and Sons. Halls and Sons is one of the oldest land owners in the Nelspruit district, and although the current manager, Mr James Mill was very willing to be interviewed, he did not have time during the two weeks that fieldwork was scheduled to take place.

Indirectly, commercial farmers are forced to be involved in land reform. Living within a distance of between 5 to 40 km from the Nsikazi district where the need for land is immense, they are under more pressure to make land available for land reform purposes. Farm attacks increased after 1994 and it was found that 77% of the victims were white and 40% of them over 60 years of age (*Die Burger* 1998a). Reasons for the attacks were said to be unemployment, poverty, a culture of violence, increasing access to guns and socio-economic problems prevailing in the country (*Die Burger* 1998b and 1998c). The year 1998 saw a 70% increase in the murder of farmers (*The Cape Times* 1998a and 1998b) and although most people described this as politically motivated, the police said that there are no evidence to support this view (*The Cape Times* 1998a; SAPS 1998). One of the farmers interviewed compared the situation to what happened during the Mau Mau uprising in a district in Kenya, where the objective was to eliminate the old colonial structures to make land available for Africans (see Berman 1997). Some did comment that it might be a vendetta, but would not say against/by whom. Situations can worsen as in the case of Zimbabwe, where villagers started invading white-owned farms, because delay in the land reform process by the government (Mandizvidza 1999).



FARMERS:

- Mr Fred Cronjé
- Mr Steven Hearne
- Mr Jan Marais
- Mr Hennie Olwagan
- Mr Louis Marais & Mr Barney Pieterse
- Mr Braam Raubenheimer
- Mr Stefan Scheepers
- Mr Wilhelm Schmidt

5 0 5 10 15 Km

FEATURES:

- Magisterial district boundaries
- Built-up areas
- Perennial rivers
- Dams
- National Road (N4)
- Cadastral boundaries

(Source: DLA 1998 & GIMS 1998 digital data and Farmers 1998 pers. int.)

Figure 2.10: Location of interviewees in the study area

Violence against the relatives/families of the white commercial farm owners also increased in the period 1995-1996. Their animals were also the targets of violence, for example, the hooves of cattle were amputated while the animal was still alive and it was left to die (*Pers. com.* with interviewees). Cattle farming have since been phased out because of such acts. Retaliation also occurred; some land reform beneficiaries reported that white farmers destroy their dams and let the water flow out. Although conflict has ceased since that tense period, it cannot be taken for granted that tensions might not rise again.

Furthermore, most of the farm workers are permanent residents of the Nsikazi district or commute on a daily or seasonal basis. Tenure reform and legislation regarding labour are a major source of concern to the farm owners, who fear increased residential uses on their premises (*Pers. com.* with interviewees). Throughout the country farmers have threatened labourers with evictions and some have even refused to bury the deceased on their land, fearing that the land will be claimed later.

Commercial farmers' perceptions of land, land use and other matters, are therefore of the utmost importance in understanding their involvement in or resistance to land reform. As Levin & Weiner (1997:52) states: "Social differentiation is a relational and historical process". Understanding what the reality of the landscape entails for them will help in understanding their actions and possible resistance to decision-making. They are also a valuable source of knowledge on farming practices and conditions which can be shared with new landowners entering the farming sector. More involvement, communication and co-operation between farmers and other land reform participants can be beneficial to the process and reduce misunderstandings, conflict and prejudice on both sides.

2.2.6 Incorporating local information into GISs

Interviews were recorded in Afrikaans and translated into English. The mental maps (see Figure 2.11 for an example) were referenced to the topographical maps used during the exercises and digitised with the facilities of ArcInfo's ArcEdit software module. ArcInfo was used for the main processing of datasets such as projection to the Lo system (still used at the time that the study was conducted) with a central meridian of 31° east. ArcView was used to analyse data and produce maps and reports from the data sets. WVU opts to customise ArcView for display as a multi-media GIS accessible on the Internet for larger

groups of people¹. For now, this study will only focus on the possible methods and uses of integrating perceptions into a GIS.

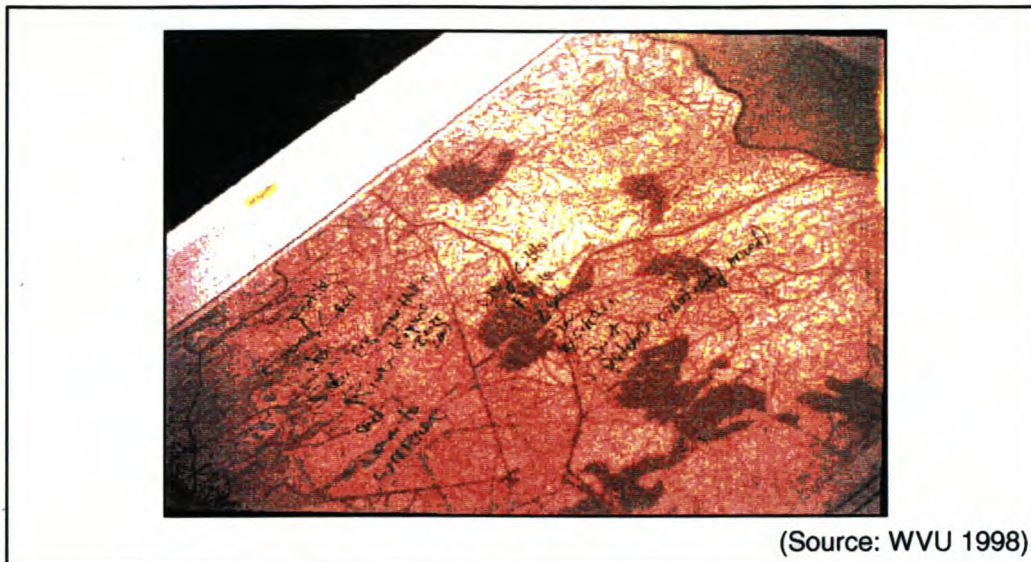


Figure 2.11: Example of a mental map

Presenting textual information on interviews or comments made on the mental maps was one of the major problems encountered. Although ArcView does have the capability of making hotlinks, managing a huge number of links can become cumbersome. The user needs to have direct access to comments made on a particular subject when viewing the map, preferably with the use of the information tool. For the purposes of this thesis and presentation of the results to others, maps were produced with text boxes containing selected relevant comments made by participants. The following chapter will present the results of these maps together with discussions on the themes from the recorded interviews.

¹ "A multi-media GIS will enable representation of landscape power and politics to be incorporated into GIS data collection and spatial analysis" (Weiner & Harris 1999:7).

CHAPTER 3: MENTAL MAPPING OF LOCAL KNOWLEDGE RELATED TO LAND REFORM

The following chapter deals with three land reform themes, namely the history of black locations, forced removals and where land reform should take place. Three land-related themes, namely land use, land potential and water resources, were also discussed. Interviewees were asked what they know of the themes, or what were their perceptions were. Interviews were recorded and relevant quotes are given in the first part of the discussion of each theme, followed by a compiled mental map of participant's views and finally some preliminary results. All information on the participants and the maps they used, are available in Appendix F.

3.1 HISTORY OF BLACK LOCATIONS

Three farmers, between the ages of 50 and 80 years, commented on the history of black locations. They were Mr Braam Raubenheimer, Mr Jan Marais and Mr Stefan Scheepers. Some farmers had not lived in the region since their birth or did not wish to comment on the subject.

3.1.1 Quotes from interviews relating to black settlements

"... old Braam told you probably that in 1930 there were no black people here. There was only one black place here at Daantjie. But there were no black workers here. They must have come from Nyasaland, Rhodesia. There were *no* black people here."

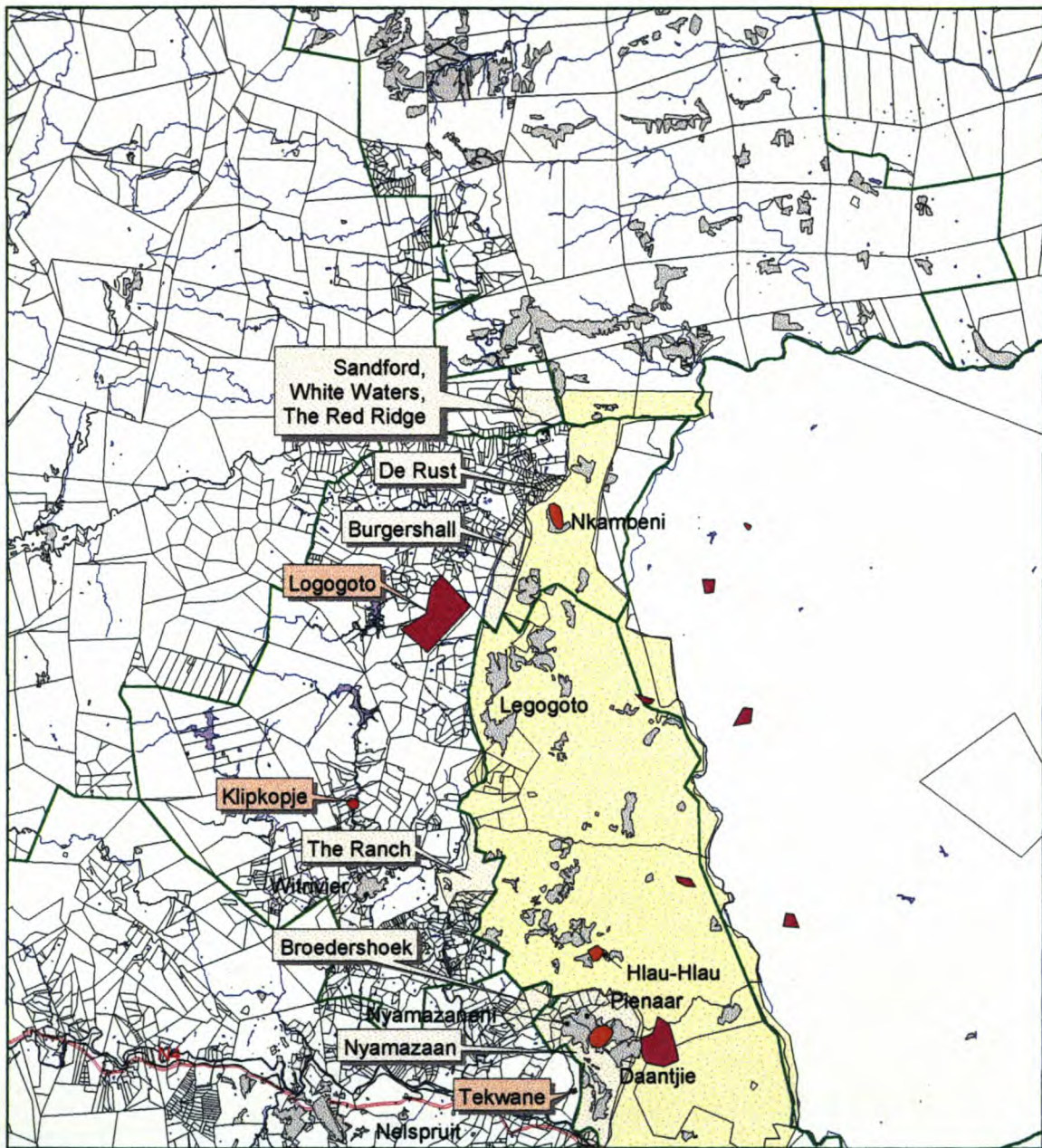
" Well, in '59 when my dad came here there were about 3 or 4 black families living on the farm and the previous owner used to run a bit of cattle and a few horses and things like this. So there was actually no commercial agriculture ... very subsistence kind of thing. And the few families that were here had a few goats and cows and other things. But basically the land was not utilised and it is actually high potential land. ... Ja ... and it was basically bush in those days, you know. They gradually cleared the bush and built a dam and start developing the land All the commercial farms today were occupied, although not tilled, by whites. Not that there were that many people here. Here was ... down here the Van Niekerks, lived, and the Jouberts lived here above us, old Manie Joubert and

Rene Joubert, and then we were here and Maritz was at the post office, Wilhelm Schmidt is there ... , and at the loch there was a reasonable lot of people. Uncle Jan Horn, I remember. And Roodt, Willie Roodt was there on Lenola. And, but you know, the farms were large, and then they started dividing it into smaller pieces and sold it. But here weren't any blacks that lived here in-between. There did live a few blacks on the farms who worked there. On our farm there was, I can remember when we came here, say five families, maybe of which I know specifically one was from Mozambique. Another one was a coloured. So there were three black families basically."

"A little way from us a black family lived, in the direction of KaNyamazaan. Sometimes the women came to help a little bit. And then he [interviewee's father] got a family of Griquas who came from the Free State from my mother's family. A man with the name of Abraham Olifant Myburg. They came from the Boshoff area and this family then helped my father. And when they became so darn ... we got George from Mozambique. And then a George from Swaziland. And ... there wasn't any black people. They started to move in in the 1920s. They never owned that land [KNP]. It was state land. They just came and live there. And now they say it was their land! They came from Swaziland and had come and lived there!"

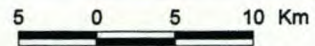
3.1.2 Compiled mental map on the history of black locations

Refer to Figure 3.1 for the mental map on the history of black locations. Although no particular years could be recalled for the areas identified, the map indicated spots where black people did live between about 1913 and 1940. Some of the locations coincide with existing locations such as Daantjie, Hlau-Hlau and Nkambeni. The farm Logogoto, in the White River district, was also indicated by Mr Raubenheimer as a place where black people lived and had a tannery. The farm name correlates with the one of the land reform projects' beneficiary groups. It is possible that these people were removed to the southeast where the township "Legogoto" is now located.



FARMERS COMMENTS ON THE HISTORY OF BLACK LOCATIONS:

- Mr Jan Marais
- Farm names
- Mr Braam Raubenheimer
- Mr Stefan Scheepers



COMMENTS MADE ON FORMER HOMELAND:

Mr Raubenheimer commented on the former KaNgwane homeland area:

- Original extent of KaNgwane, Pre-1960s
- Areas identified to be bought and added to the Nsikazi district of KaNgwane in the 1960s
- Farm names

FEATURES:

- Magisterial district boundaries
- Built-up areas
- National Road (N4)
- Cadastral boundaries
- Perennial rivers
- Dams

(Source: DLA 1998 & GIMS 1998 digital data, Farmers 1998 pers. int.)

Figure 3.1: History of black locations in the study area

Mr Raubenheimer, as a former deputy minister of the former Bantu Affairs, was very much involved in the creation and extension of the former homelands. He provided a 1:250 000 cadastral map of Barberton, printed in 1963 on which he made marks during a flight over the Nsikazi area during that time. The intention was to identify areas on the western boundary of the Nsikazi region to be bought from white farmers and added to KaNgwane. The original boundaries of Nsikazi are indicated with saturated yellow on the map, whereas the lighter yellow shows the farms identified to be bought, with their farm names. Together with areas identified to the north of Nkomati and the southern part of KaNgwane which lies north of Swaziland, a total of R55 million was spent on buying farms in a one-year period. He also indicated that the Nyamazaan farm was bought by Dr Verwoerd to add to KaNgwane in the 1960s.

3.1.3 Results of theme on history of black locations

What is evident from the information above is that, although black people did live and reside on farms since early 1900s, and even helped in the tilling and infrastructural development of the farms, they were not recognised as being permanent occupants of land. They were not included in the issuing of land rights, as they were not seen as landowners. Even though farmers did acknowledge that they were practising subsistence farming with livestock and had other small business ventures, the “land was not utilised”. This emphasises the view prevailing in Western societies about who is entitled to land ownership rights based on the way they use land and the type of farming practice.

Other participants also viewed Africans as immigrants, claiming that there was an “influx” into the country during the Second World War from other countries, e.g. Nyasaland, and these people were thus not legally residents of South Africa. Historic patterns of land occupation over the past century evidently shaped their views of what rights people are entitled to today.

3.2 FORCED REMOVALS

The issue of forced removals is one of the most controversial subjects of our century. It was a deliberate and strategic movement by the apartheid government enforced on black people who were either residing on land which was intended to be included in the White

territory of South Africa, or who were to be subjected to the chief of a tribe and who did not reside in the boundaries of the identified homelands. Forced removals started in 1913 and were continued at intervals between the 1930s and 1940s and after 1960 until 1984. There is little official documentation on forced removals and, according to Levin & Weiner (1997:101), only a 23-year period was documented. In the period after 1960 labourers living on farms in Mpumalanga were claimed to have “squatted” illegally and removed to homelands. The farmers were asked if they recalled any forced removals in the areas.

3.2.1 Quotes from the interviews on forced removals

“At night when you looked across it was there [Rocky Drift]. Today you can't see it but in the night it was like a town there, of all the little fires of people. They started just at one time and took them all away. They took them away and went to plant them at Boksburg (sic). [Who took them away?] HL&H Heart ... Medburn forestry it was called at that stage. HL&H Timber. MacMac farm they named it those years. Let me tell you, that was in the mid-60s, no maybe '64, '65 if I remember correctly. They took those people away. But there were a lot of blacks who lived there, because from what we could see on the slope on this side, and here where we stand now you must see, you could've seen all those little fires there. “

“No it's *whites*! They were removed. They bought them out and relocated black people there. ... I am now talking about six, four years ago.”

“There were whites that were forcedly removed. At Sand River near Hazyview. Their land was bought out for the blacks. It was 1988 towards 1990 - I myself was involved in it. Land that was bought out.”

3.2.2 Maps made on forced removals

Figure 3.2 indicates the areas drawn by the farmers where forced removals took place. Buffers of ten kilometres were established around the areas to create an idea of the distance in which forced removals took place from where farmers lived. What was

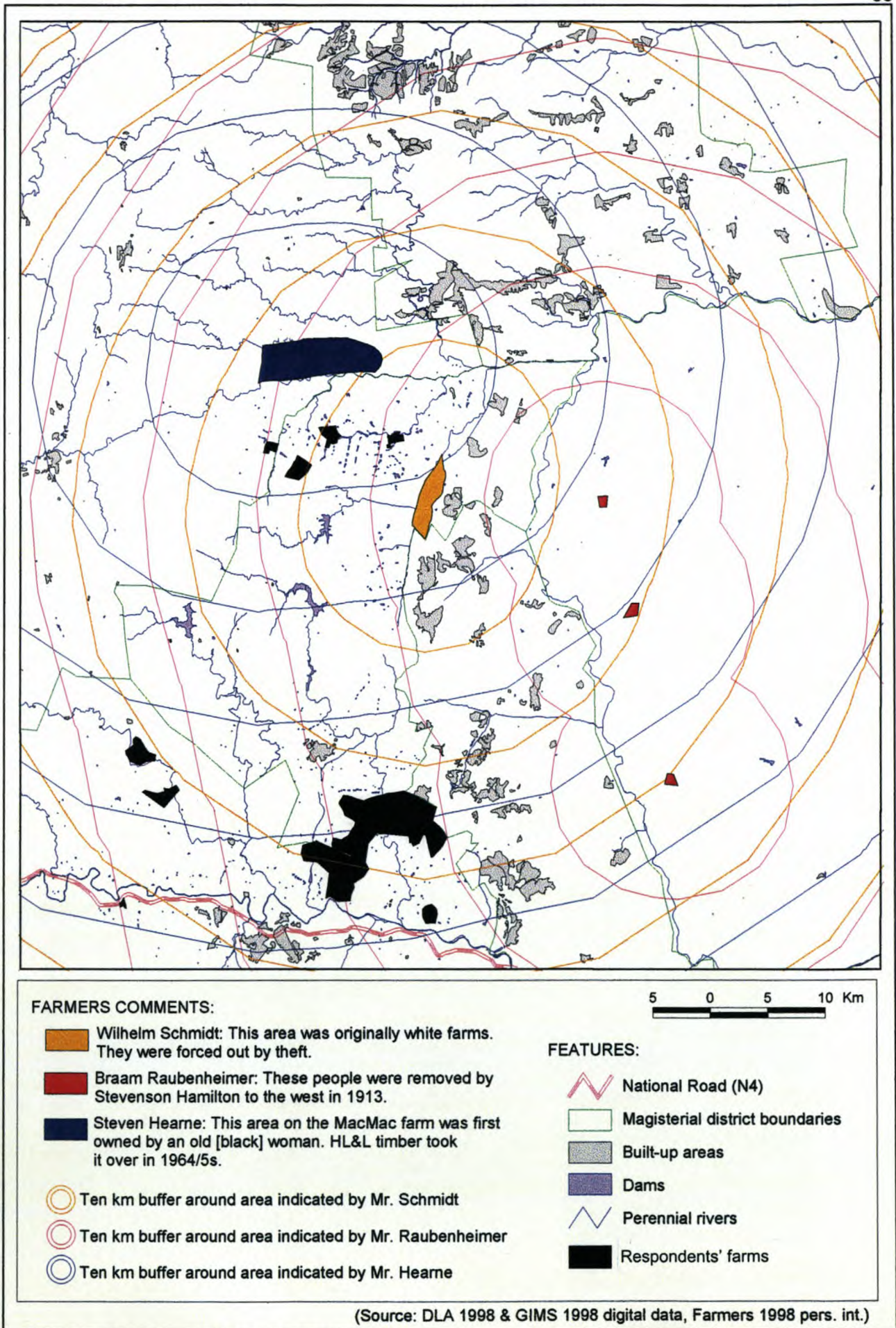


Figure 3.2: Areas where forced removals took place

interesting is that two farmers lived within a ten kilometre radius during two different periods of forced removals, one of blacks in the 1960s and one of whites in the late 1980s. Both have been living there since 1930 or 1940, but each had selective recall on historic events as they believed them to have occurred.

Mr Raubenheimer indicated three spots from where Mr Stevenson Hamilton, the founder of the KNP, moved blacks from, based on what he read from literature on the Lowveld. In his terms they were forced to move to the west (now the KaNgwane Nsikazi region) without any help in order to extend the western boundary of the KNP. He drew nothing on the movement of blacks during the time of his parliamentary service, as he said they were not forced to move, but that the chiefs were consulted, the people compensated for their land and belongings, and given new and better land where they were helped to move to.

3.2.3 Discussion of results of forced removals

People shape historic events according to their own frame of reference and beliefs. Forced removals are seen as a movement of people from land on which they resided on to other land because of political structures and criminal activity. In all cases people believed that compensation was offered, even though those subjected to forced removals resisted and resented the movement. In all instances people who resided on land, whether they did or did not have legal land rights registered, were subjected to movement enforced by government structures.

In Figure 3.3 the perceived areas where forced removals took place were overlaid on areas of land potential as classified from land types data of the ARC by WVU (see Appendix E). The largest area from where blacks were removed in the 1960s is mainly located on lower-potential land. The three spots from where blacks were removed from areas which now form part of the KNP, however, are medium-potential land, and the last area where whites were "forced out by theft" is high-potential land. This last area was also identified by Mr Raubenheimer as land that was to be added to Nsikazi in the 1960s, but it never was, according to the latest boundary of the district. The land forms part of the original Die Burgershall farm and is still owned by the South African government.

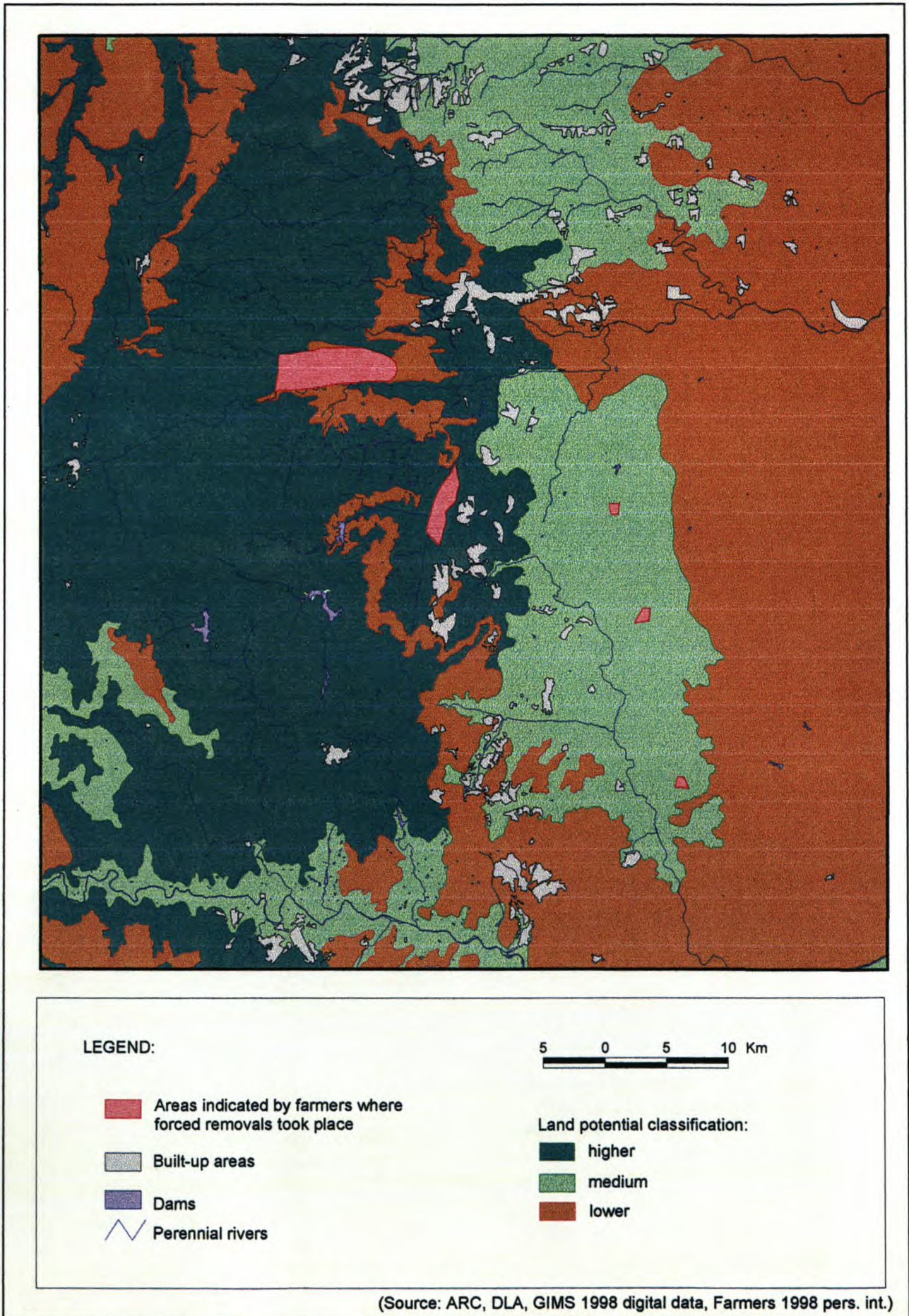


Figure 3.3: Assessment of areas where forced removals took place

In the most two recent cases it is also noticeable that people were removed away from perennial rivers, namely the Sabie and Nsikazi rivers. The area indicated to the north is situated on the farms Richmond, Boschhoek and Albany, believed to be forested land. The appropriateness of forestry next to the Sabi River is to be questioned. Further issues on land use and land potential will be discussed later.

3.3 PHYSICAL ISSUES RELATED TO LAND

The issues of land use and land potential as well as water and the physical features of the land arose as important themes in relation to the question of land and land reform. Participants were asked to give their opinions on these issues; the results are discussed in the following sections.

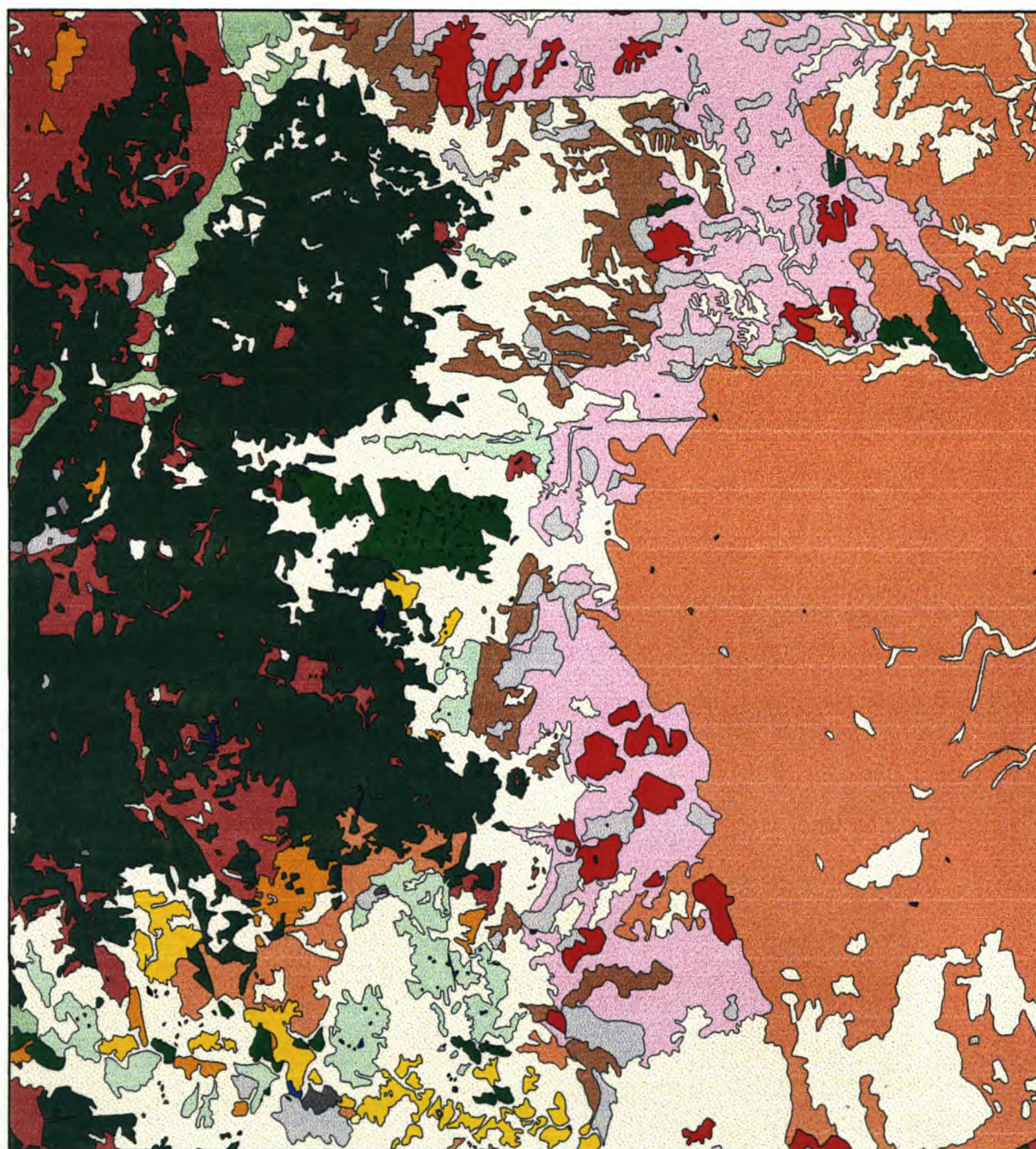
3.3.1 Land use

Land cover data were obtained after the field visit of 1998, when remotely sensed data of the area was classified by the Satellite Application Centre (SAC) of the Council for Scientific and Industrial Research (CSIR), (Appendix E). Figure 3.4 shows the land use classification of the study area. This map was not available to present to the participants, but was used in the discussion of the results in section 3.3.1.3. Existing land use was evaluated from the 1980 topographical maps on the basis of its appropriateness and degree of utilisation. Arguments on the appropriateness of large commercial forestry plantations also featured in the discussions.

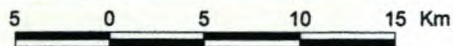
3.3.1.1 Quotes from interviews on land use

“There above the Kruger Park is nothing The government gave it to them [the blacks].”

The area referred to is situated in the northern province in the Mhala district, within the boundary of the case study area. According to the land cover map (Figure 3.4), the area is covered by degraded forest, woodland, thicket and bush with very few irrigated farms, more subsistence farming and mainly residential built-up areas present.



LEGEND:



- | | |
|--|---|
| Barren rock | Forest plantations |
| Cultivated: permanent - commercial dryland | Improved grassland |
| Cultivated: permanent - commercial irrigated | Mines & quarries |
| Cultivated: permanent - commercial sugarcane | Thicket & bushland (etc) |
| Cultivated: temporary - commercial dryland | Unimproved grassland |
| Cultivated: temporary - commercial irrigated | Urban / built-up land: commercial |
| Cultivated: temporary - semi-commercial/ subsistence dryland | Urban / built-up land: industrial / transport |
| Degraded: forest and woodland | Urban / built-up land: residential |
| Degraded: thicket & bushland (etc) | Waterbodies |
| Forest | Wetlands |
| Forest and Woodland | |

(Source: Cadnet 1999 digital data)

Figure 3.4: Land cover in the study area

Opinions on forested land ranged from positive to negative. Some farmers believed that forestry land should be converted to agricultural land as trees “take all the water” and some stated that “(i)f you clear the trees, our water problems will be solved Even if they substitute bluegums with pines, then it will be a hell of a relief.” According to Mr Hearne, “(a) full-grown bluegum tree uses 1000 litres a day, whereas a large household used 2500 a day”. Some participants thought that this would not be sustainable as “(f)orestry areas are really fully developed; I don’t think one should tamper with that.” Forestry provides many people with job opportunities and forested land will take a long time to convert to agricultural land, but this land might be useful if the slope is low.

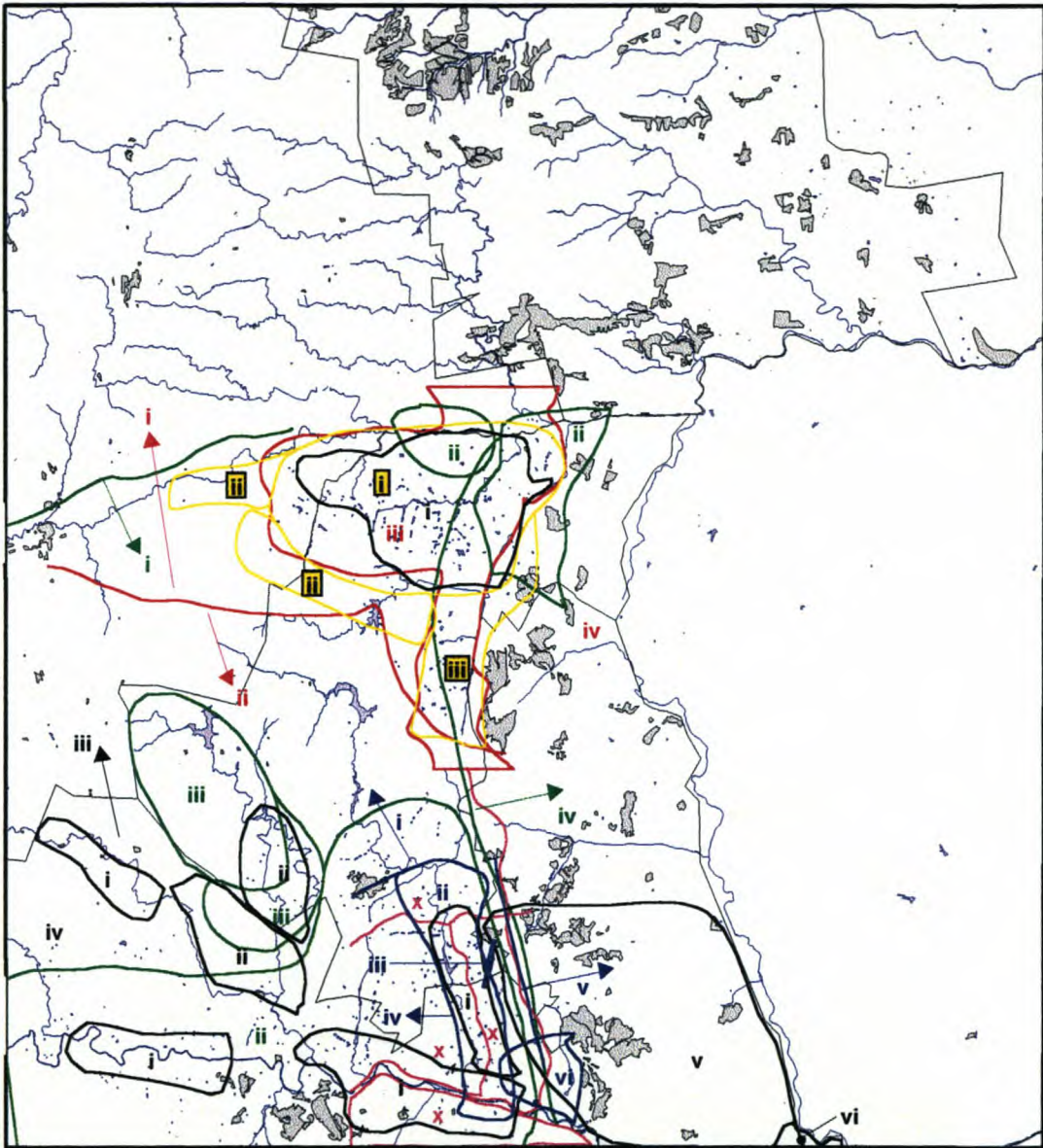
Some comments were made on other large-scale commercial farmers: “I know of Halls and Sons. They sit there with a piece of land, 24 000 (ha) unutilised land.”

3.3.1.2 Compiled mental map of land use

Figure 3.5 shows the results of the mental maps drawn by the farmers. The Langspruit area was regarded overall as highly utilised land, as well as the White River irrigated farms, and farms extending on either side of the Crocodile River. Areas adjacent to the Langspruit system were identified as under-utilised but with the potential to be improved. The area around the Witklip dam in the western part of the Lowveld was also identified as being “under-utilised” under the ownership of forestry companies such as Trimco and Drietimber. These areas are classified on the land cover data as unimproved grassland and temporary cultivated commercial dryland farming. Four farmers indicated that the Nsikazi area is highly under-utilised and three said that it can be developed for agricultural purposes with good planning, as the soil is “very good” on that side of the watershed, even though it is densely populated. No comments were made directly on the KNP or areas to the north of the study area.

3.3.1.3 Discussions on land use

Farmers viewed all highly intensive large-scale commercial agriculture under irrigation as land that is being optimally used. Agriculture therefore seems to be the most appropriate land use in the larger parts of the sub-region, where slope permits. Areas that were



✓ Louis Marais & Barney Pieterse

- i Smallholdings can be developed here, but not large commercial farms. The government is not taking out more trees for water.
- ii This area is optimally utilized.
- iii Potential land for airport.
- iv Rather take out trees and practice agriculture instead.
- v Underutilized. Very good soil on this side of the watershed.
- vi Very good irrigated land.

✓ Stefan Scheepers

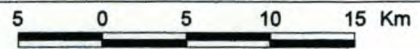
- i Underutilized. This area to the south-east has a high agricultural potential. It consist of red soil but it depends on the availability of water. Will be suitable for dry crops and some subtropical fruits, nuts; e.g. kiwi and grenadellas.
- ii Underutilized.
- iii Small fractions are underutilized.
- iv Completely underutilized.

□ Steven Heame

- Highly, highly utilized.
- ▨** Underutilized.
- ▩** Can be developed a little bit more.

✓ Hennie Olwagen

- x** Highly utilized land.



✓ Wilhelm Schmidt

- i Nearly nothing in this area is suitable for agricultural purposes.
- ii Forestry: Less subtropical climate; it becomes colder and is then extremely suitable for forestry.
- iii All of this is intensively utilized by agriculture.
- iv This area has the potential for development - the open areas for agriculture once irrigation is developed.

✓ Jan Marais

- i Highly utilized areas.
- ii Underutilized areas.
- iii Barren rocky areas; Safcol owns this land.
- iv Forestry companies like Trimco and Drietimber utilize this area.
- v This area can still be developed with good planning. It is however too densely populated now.
- vi This area is a wild reserve.
- vii This land is moderately utilized.

(Source: GIMS 1998 digital data, Farmers 1998 pers. int.)

Figure 3.5: Land use as evaluated by the interviewees

identified as being under-utilised were located among the irrigated commercial farms and within the Nsikazi area. This can be very helpful in searching and identifying land where new farmers could be settled with the help of the land reform programmes. Considering that a large part of the study area consists of some of South Africa's 11,4% high-potential agricultural land, it is most appropriate to assess land and land use in these areas where the need is high. Planning, however, is essential to ensure that land is optimally used. Forestry and its location within the watershed must be evaluated and one farmer emphasised the need for catchment planning.

3.3.2 Land potential

According to the ISCW, the Department of Agriculture and the Land Bank, land potential is based upon soil types, climate and slope. Woodhouse in Levin & Weiner (1997:80) summarises the cultivation constraints for land type groups:

Table 3.1: Summary of cultivation constraints for land type groups

Group	Land types	Description
1	Ab36, Ab37, Ab43	Predominantly deep, well-drained clay soils: high potential but with a major slope constraint for arable cultivation (more than 30% of the area has slope of >12%). The slope constraint is much less important for forestry and perennial (i.e. tree) crops.
2	Ab40, Ab41, Ab42	Predominantly deep, well-drained clay soils: high potential and with only a minor slope constraint for arable cultivation (less than 30% of the area has a slope of >12%).
3	Ab10	Predominantly well-drained clay soils but more than 60% unploughable because too stony (boulders) or shallow.
4	Ae132	Deep, well-drained soils in lower rainfall areas, with few slope or stoniness constraints in the form of low capacity for water and nutrient retention due to low clay (and high sand) content of soil on 56% of the area.
5	Fa341, Fb66, Fb167	Variable soil types, predominantly (more than 60%) unploughable because too stony or shallow. Fb land types signify lower rainfall than Fa landtypes.

Land types data were purchased from the ARC's ISCW in Pretoria 1998. WVU has classified the data into three broad categories, namely higher-, medium- and lower-potential land. These data were not presented to the participants as it was purchased after

the fieldwork, but again were used in referencing local expert knowledge to traditional expert classified data to find correlation, not assessing accuracy. Quotes from the interviews will be given first in the next section before the overlay of the mental map on the land potential map is presented.

3.3.2.1 Quotes from the interviews on land potential

It was expected of the interviewees to share their perceptions on what to them is the definition of “high-potential” or “low-potential” land, and to indicate areas where they know land is either high, medium or low, according to their own definition of it.

“Land potential is where the soil’s quality and structure is of such a nature that you can produce diverse crops there, with sustainable water supply in terms of high rainfall and dams and infrastructure which add to the availability of labour and the location of it, and in a lesser degree distance to a market and the provision of input.” Another farmer, as a former extension officer in a broader region of the study area, said that land potential is not restricted to the soil, climate or slope, as different farming techniques have improved so drastically over the years that the traditional classification is outdated. A farmer now has technology to enable him to plant at a much steeper slope, depending on the crop’s root system, need for irrigation and harvesting. Soil can be compensated for by adding nutrients, minerals and compost and climate to a certain degree, by irrigation and other water infrastructure. “You can make land technologically high potential Soil is just to hold up a plant straight. But technology allows you to farm crops.”

Other comments made on land potential in the Nsikazi district: “I’m not that familiar with the boundaries of KaNgwane. I think there definitely is high-potential land there. In some areas of KaNgwane I’ve seen crops and so on, not that I’ve looked very closely but I’m sure there’s definitely high-potential land there.” “I have a complaint that it is not being used. The blacks live on it, they all reside on it. It’s got a high potential for agricultural crops: citrus, any subtropical fruit”

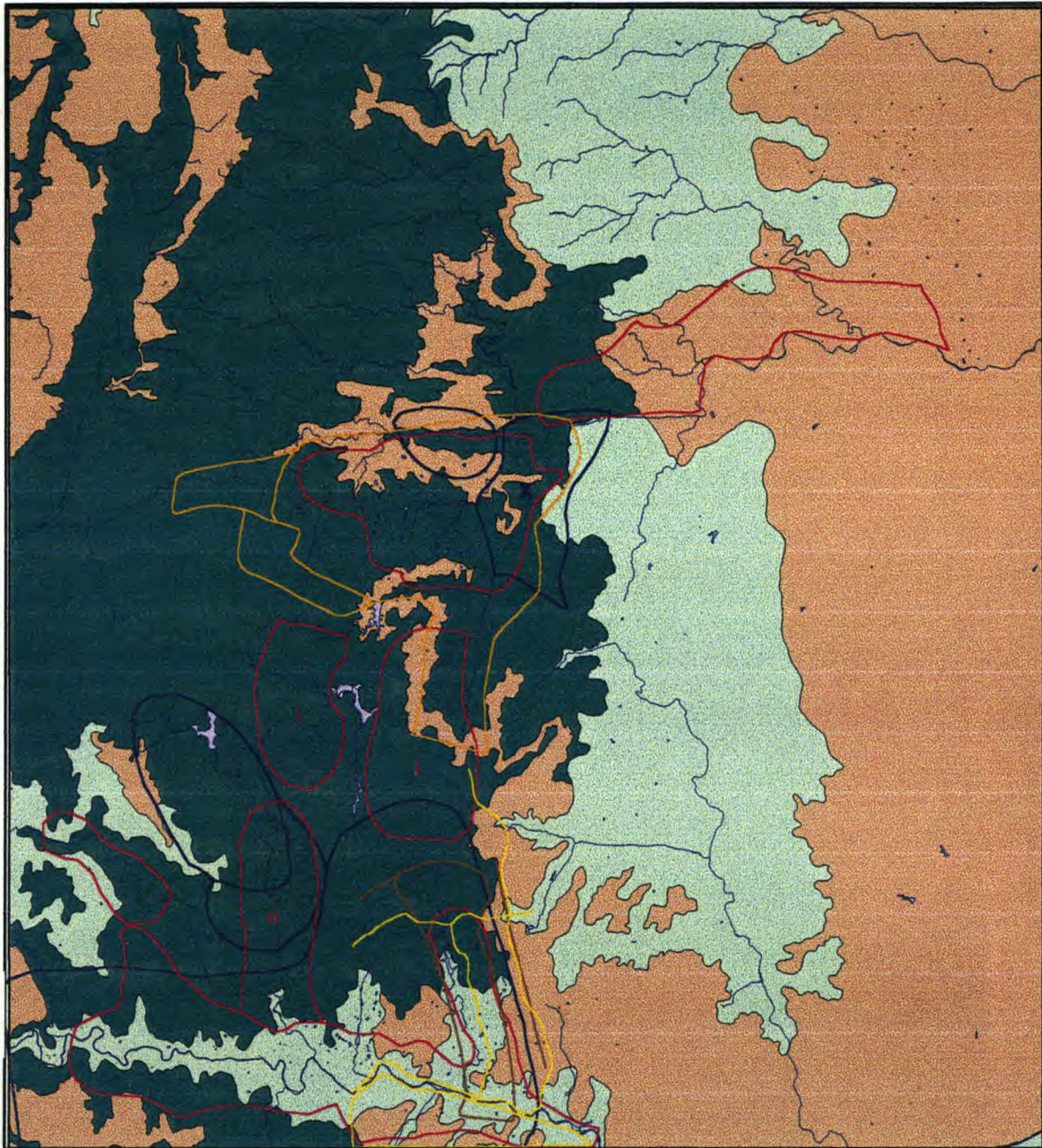
3.3.2.2 Compiled mental map of land potential

Areas classified by farmers in terms of their potential and their own definitions are shown in Figure 3.6. Two very striking facts emerge: i) not all areas classified by an expert are viewed as higher-potential land by the participants, e.g. the two areas next to the Da Gama dam; and ii) areas classified as medium- and lower-potential land are viewed by farmers as higher-potential land due to its location relative to hydrological features and infrastructure. This shows that technology and the person employed in business can make theory unreliable and inadequate when applied at ground level.

One reason that traditional experts' data classification might differ from what is perceived at ground level revolves around the question of rights or access to resources and technology. This includes, for example, riparian and irrigation rights on rivers and dams in the area. Land use is another matter that needs to be considered when assessing land use, as Mr Marais indicated that two areas to either side of the Da Gama dam, located on what a traditional expert would classify as higher-potential land, in fact lack a sufficient water supply due to forestry practised on that land.

3.3.2.3 Discussion of views on land potential

It became evident that people's views on land, land use and land potential definitely differ from those of the traditional experts who are usually employed in processes of decision-making on land at local level. Technology and legislation and access to them are issues to consider when assessing land potential in general. The next section will discuss water resource issues in a very broad and general sense.



Jan Marais
 i These areas do have potential but do not have enough water. Currently used by forestry.
 ii "Word nou wakker", the area is now beginning to develop at a faster rate.
 All other areas are high potential land.

5 0 5 10 Km

Hennie Olwagen
 These are high potential land.

Stephan Scheepers
 These areas are high potential land. The unshaded nonforested areas on the 1980s topographical map in the KaNgwane area are also high potential land, not those densely populated.
 x This area has the potential to be agricultural land but water infrastructure must be developed.

Land potential:
 higher
 medium
 lower

Louis Marais and Barney Pieterse
 This area is high potential land: meaning you can plant anything; here the lands are irrigated, the soil is right, there is enough water and rainfall is above 800mm. To the west of this area is good soil. To the east of this lies the watershed ("line drawn") and to the east side of the watershed is also very very good soil.

Steven Hearne
 Only a third of these areas are high potential land. There area dongas, roads, bushes and rockplates which are not suitable. East of this may be areas that are also suitable especially along the river, but I don't know it too well. It is now too densely populated.

(Source: ARC 1998 & GIMS 1998 digital data; WVU 1999, Farmers 1998 pers. int.)

Figure 3.6: Land potential as assessed by WVU and Interviewees

3.3.3 Water resources

Two catchment areas feature in the study area, namely the Sabie River in the northern part, which drains eastwards through the KNP into the Indian Ocean, and the Crocodile river in the south, running nearly parallel to the Sabie. Both of these are mainly perennial rivers. Rainfall decreases from the escarpment towards the Lowveld from between 1 000 and 1 500 mm mean annual rainfall (MAR) to between 500mm and 700mm. Rainfall is seasonal between the summer months of December and March (Levin & Weiner 1996:75). Water infrastructure is intensively developed, as can be seen by occurrence of furrows, canals, dams and boreholes (see Figure 3.8).

Three big dams are located between the Nelspruit-White River area of intensive commercial agriculture and the Kiepersol-Hazyview areas, and they are managed by Irrigation Boards. The dams are surrounded by commercial forestry. It is now known how much water is actually used for agricultural, residential or industrial purposes. According to Woodhouse (In Levin & Weiner 1997: 83) "water from the Sabane, the Langspruit, and the White Waters river is entirely used by forestry and irrigation within the catchment areas of those rivers, and is thus unavailable for downstream use in the lowveld."

The intensive hydrological structures developed by farmers (see Figure 3.7) were also criticised because they cut off the natural runoff to the east. A study done by the Department of Water Affairs and Forestry (DWAF) on the Sabie River, showed that "(i)n the most extreme case, the Langspruit River, numerous small private dams effectively trap all the runoff. It is considered to have a 'closed system' and 'consequently the water of the Langspruit rarely, if ever, reaches the Sabie river'" (Woodhouse in Levin and Weiner, 1997:83).



Figure 3.7 Langspruit's dams near Hazyview

Water seems to provoke heated debate, as it is a resource people are dependent on, not only to survive, but also to practise agriculture for a living. Farmers were asked to comment on any water issues they know of or are concerned about.

3.3.3.1 Comments and quotes from the interviews on water resources

"The influx and the little bit of water I accumulate, that won't make an impact. This little bit of water, which I come and open and let go in the river, what impact will that make on the river? That will make no impact."

"Because we develop the potential of the environment, by building all the dams and using the water to irrigate and to work with it for a lifetime. people concerned with a river catchment area, interested people, these people must divide/share the water with one another. According to the water law's list of priorities. The first is human consumption, that is the primary use. Then ecology and then the rest. Now we have that problem. That Sabie river, these rivers of ours are sidestreams of the Sabie river. And the Sabie river flows this way. Now here live a million and a half blacks. And there's the National Park which is ecology ...".

"We in agriculture are actually very worried about the settlement of people here for the amount of water resources available. There won't be enough for everybody."

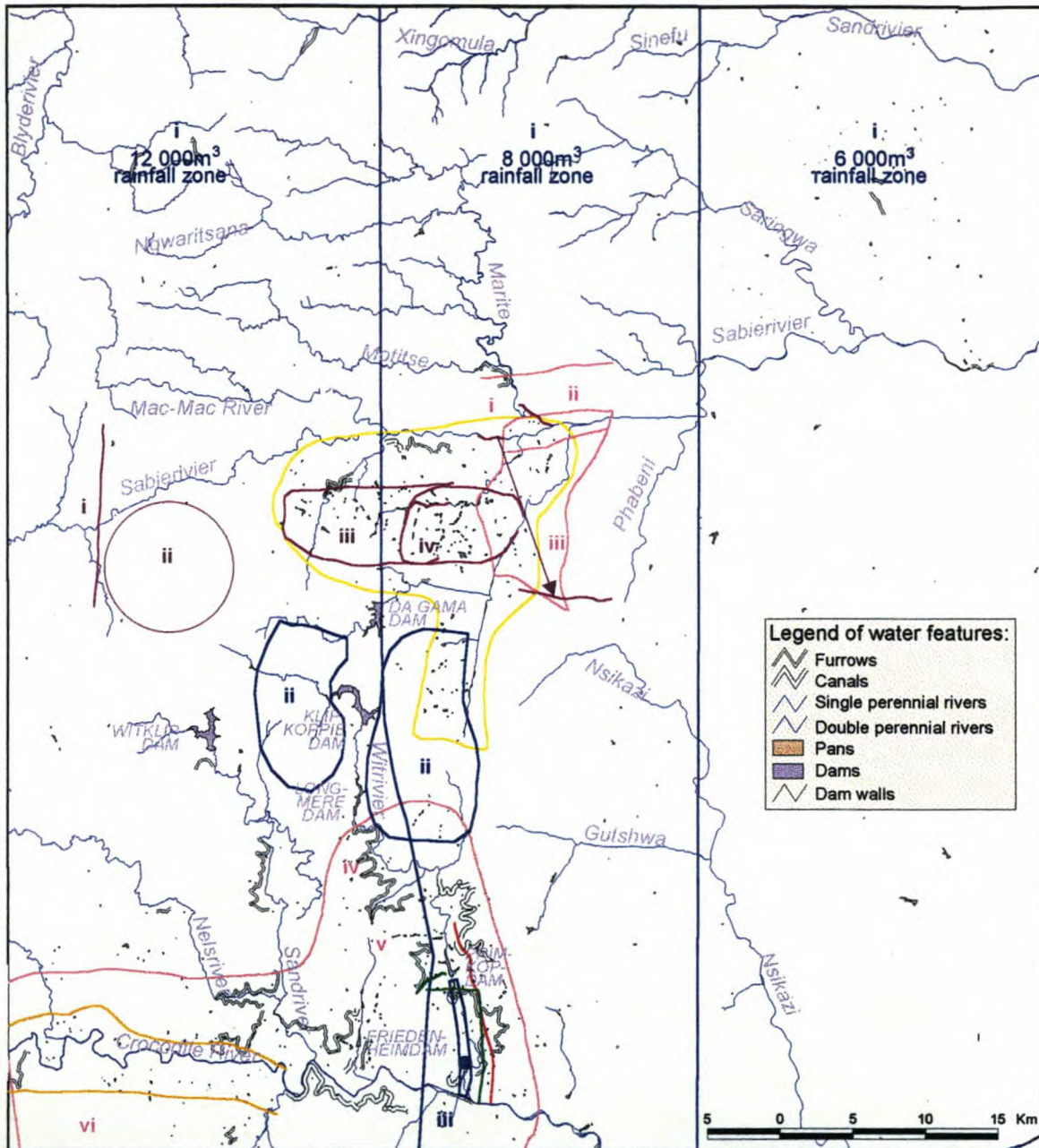
“Agriculture currently has to pay 6c per kiloliter of water. And the industry and people in town pay R1,20. And the industries say more and more we will buy that water. Give the water to us. And agriculture cannot afford to pay more than 6c. Or 10c, that is the maximum which agriculture can pay to keep the business running. They can't afford more.”

3.3.3.2 Compiled mental map on water resource issues

Figure 3.8 shows the mental maps overlaid on hydrological features and infrastructure. Three farmers indicated a pumping scheme running up north from the Crocodile river but only one farmer talked about riparian rights, saying that he doesn't use this at all. Riparian rights of landowners adjacent to the Crocodile River currently apply for a period of 10 hours a day between 6am and 4pm. Most farmers commented on the Langspruit irrigation system, where between 60 and 250 privately owned dams were developed for “agricultural purposes”. Private dams also provide drinking water for those residing and working permanently and temporarily on the farm.

Mr Marais drew zones of rainfall for the year over the area but overall farmers are not so directly dependent on rainfall because of developed dams, canals, furrows and boreholes. No farmers indicated that they have irrigation rights from the large dams, i.e. Da Gama and Klipkoppie with the exception of the Witklipdam.

Again forestry, situated in the main catchment areas of the region, was seen as a problem as it consumed a lot of waterflow and ground water. Mr Raubenheimer said that the forests were planted in the 1930s during the depression years by the government for a basic payment rate and supply of food. Further encroachment of foreign species like Eucalyptus increases the water absorption from up to 10 meters below ground level and further reduces available water in streams.



<p>Steven Hearne</p> <p>There are three irrigation boards in this area. Irrigation occurs mostly from private dams. Langspruit farm alone has 60 dams which were built by farmers themselves. This area is the most effectively used area in the whole land. Drainage occurs to the lower-located dams and are being pumped back into the upper dams again.</p>	<p>Jan Marais</p> <p>i Rainfall zones. ii Not enough water to practice agriculture. iii Pumping scheme from Crocodile river (water rights).</p>
<p>Stefan Scheepers</p> <p>i There might be a dam built here. ii Hope this area develops irrigation from upper dams because Sabirivier was a sensitive system. iii This area must develop water infrastructure for agriculture. iv Water here is more of a problem because of forestry encroachment. v Water drainage and underground water are stronger and fuller because the catchment areas don't lie in the forested areas. vi In this area there is not such an optimal utilization of water because of the Raubenheimer dam (located to west of study area) - location types. Can develop this area more to be suitable and optimal over the longterm.</p>	<p>Wilhelm Schmidt</p> <p>i The area west of this line is a high tainfall region. Receives 3m³ per week. ii Catchment area. iii This region is about 5 by 15 km in diameter and includes about 250 dams all privately owned. Only rainfall is used to fill it up. It provides employment for approximately 10 000 people. One of the best systems in the country. iv Langspruit irrigation; developed by farmers. v The Nyaka dam is to be built close to Bosbokrand. It is located to where that bridge very recently collapsed. It will take 123m³ water. It is nearly like the Hartbeespoortdam and will go up to Acomhoek with a pumping scheme, R1 milliard. The dam will provide water up to the line in the south.</p>
<p>Fred Cronjé</p> <p>The area to both sides of the Crocodile river has irrigation rights to the river. Five days per week, ten hours per day, although it is not always being used.</p>	<p>Barney Pieterse Hennie Olwagen</p> <p>Crocodile river pumping scheme which started more than 5 or 6 years ago.</p>

(Source: GIMS 1998 digital data; Farmers 1998 pers. int.)

Figure 3.8: Water resources and evaluation

More dams were to be built by the government to the north near Marite and south of the study area (Driekoppie Dam) to provide drinking water for the rapidly increasing urbanisation needs of the former homelands and the fast-growing city of Nelspruit. Land and water seem to be very scarce resources, with the result that a variety of landowners and users and potential landowners and users will have to share.

3.3.3.3 Discussion of results of water resources

Water seems to be a major concern, especially in relation to the new water rights, where people and ecology are prioritised for water consumption above agriculture and industry. The Nsikazi district is increasingly becoming an area of mass residential development without proper planning. Nelspruit city is booming with the Maputo Corridor development, and on fieldtrips it was noticeable that there was no land use planning. High-potential agricultural land was being built on for business and entertainment purposes.

Legislation, especially water rights to rivers, is needed to address this problem. Some people owning land in close proximity to the Crocodile River, which might be part of tribal land in the former KaNgwane region, have never heard about irrigation rights for the river. As Woodhouse (in Levin & Weiner 1997:89) stated: "Firstly, access to water needs to be addressed whenever decisions on land restitution and redistribution are being made, and access to water should be used as a criterion as to which land should be redistributed." Reform of water legislation is essential.

3.4 IDENTIFYING AREAS FOR LAND REFORM

Farmers were asked whether they knew anything about land reform projects and what their views were on them. Most believed that the SLAG was a huge failure.

"I think they pay *more* than the market price for the land."

According to Mr Groenewaldt of the Land Bank (*Pers. Com.* 1999), land prices are derived from the amount of irrigated lands on the farm, listed water usage which included irrigated lands and freewater, rivulets or other catchments, and then per hectare and crop which has already been planted. Land prices did rocket, but by 1998 three validations were

required before the government would allow transfer to beneficiary communities. Prior to that it can be assumed that landowners benefited from the SLAG, and not those in need of the land.

According to a report drawn up for the DLA in Nelspruit, the community on Halls and Sons were threatened with eviction from land they had lived on for approximately 20 years (MK Informatics 1999). Discussions with the DLA lead to the agreement of a redistribution project where Butcher's Camp, a part of Halls and Sons' property, will be either sold or donated to the community and security of tenure ensured. With reference to an earlier comment made by a farmer that Halls and Sons has unutilised land, as well as a later comment to the effect that one of the farms that Halls and Sons owned, Mattaffin, was resold as a waste disposal site, the actual dedication of farmers involved, or who could be potentially involved, in land reform is to be questioned.

Other farmers commented on Sitama Impilo located on the Primkop farm: "This man at Primkop, that project which they have there, they have now started with a chicken farm on the place. There were supposedly chicken farmers on the farm when they bought it, now they buy it. Now Papi Nkosi, this black man (from Black Farmers Union), says he was there, and he says there's almost no chickens left. Now all is sold and eaten. So that chicken farm is going to result in nothing."

One farmer knew only about potential buyers: "I know here are people who want to buy farms. There's a guy from Swaziland who wants to buy. And there's land across from here, which a black man wants to buy. There are guys from abroad who want to buy in the Onderberg."

The farmers were also questioned on their own attitudes to future land reform projects. The next three sections will deal with their views on the subject and mental maps created.

3.4.1 Quotes and comments from the interviews on where land reform should take place

"We don't have any objection to land reform."

“Yes I would say to you 90%, and I am now talking on behalf of the plot owners as well, of which there are hundreds here, ... nobody here is against land reform! People have completely a wrong impression. Everybody is worried about good high-potential agricultural land which in the end would affect the whole country”

“I don’t have a problem with land reform provided that it is used productively. I think South Africa doesn’t have all that abundant good high-potential land; it definitely hasn’t got an abundance of water, and it is absolutely essential that the land we’ve got and the water we’ve got have to be used sensibly and in such a manner that you can continue using it for ever more.”

“All land that’s unproductive - that should maybe be one of the norms. Not necessarily uninhabited ... it amounts to sensible management of the land.”

“They took the people away from a place they traditionally lived. They do have the right to go back to it then.... But if you went to a farmer and he, out of goodwill, told a man he could stay there and use some of the grazing there on his premises which he does not use now, what do they call these - tenures: No.”

“The success of the land reform projects has nothing to do with physical soil, water. It is about people. The people who are there must manage it correctly to make a success of it. And I personally don’t think there is a shortage of land for people who *have* the ability to farm, to farm on. I don’t think so. I think there is enough water for us to build dams, for that we need money. ... But there is only one measure to know if a person will be a successful farmer. You must give him a chance to farm.”

“You have to experience it.”

“Must have a passion for agriculture.”

“How do you teach a black man entrepreneurship?”

“If you take high potential land and give it to someone with a low potential farming ability, he will make a failure of it. He will push that land’s potential to low. But you can give low-

potential land to a person with high farming abilities and he won't be able to make the potential *high*, but he will be able to *improve* it. He will use it optimally."

"Farming today is strongly based on business principles with finance. ... We have two different cultures with different concepts of the definition of being rich, of which one is capitalism."

"So what I see, if they for instance take our farm and do something with it, firstly it wouldn't be able to carry the amount of people it is carrying at the moment or feed the amount of mouths here, because the farming we do here is pretty intensive and we consider ourselves among the better banana farmers in the country."

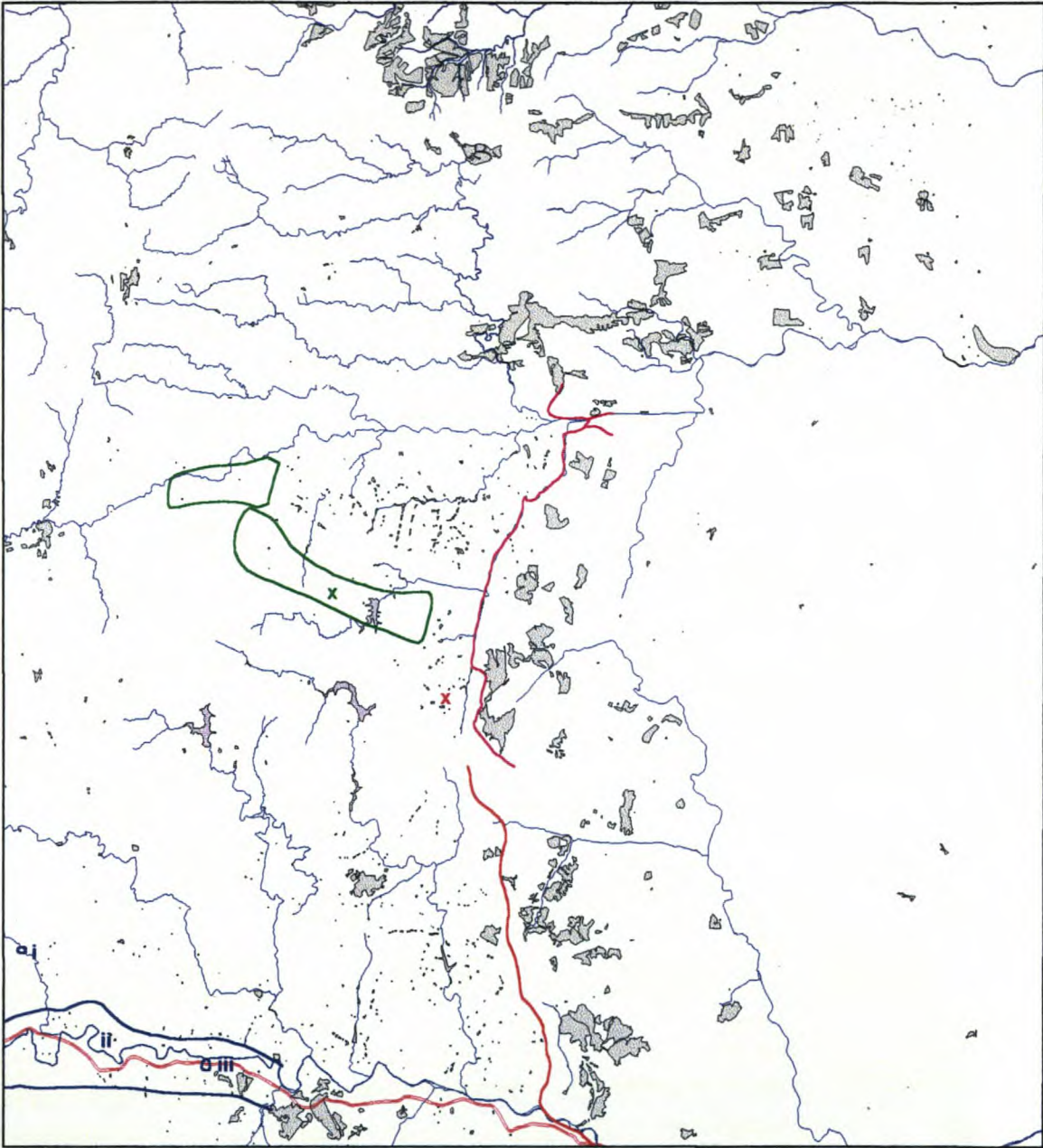
"There is a lot of potential. The only drawback on this stage is the high population growth in this area because it is the capital city, that places a lot of pressure on the available resources - that is limited. I don't think the area can tolerate a much larger population than what it is doing currently."

"Wouldn't isolate land reform, otherwise it will be like the old apartheid system. Cross-pollination is important, thus it must not be isolated, and they must be thrown into a community with moral values and with self-preservation. The training will be much better then. Suggest putting groups together, because the whites are still very conservative."

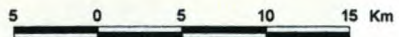
"State must not see self-sufficient farming as an option, it can only go worse. It can be successful if attention is given to it."

3.4.2 Compiled mental map on land reform

Figure 3.9 indicates the areas the farmers commented on in the discussion of where land reform should take place. Two farmers indicated areas within the greater area they live in, and two farmers said that no land reform should take place within the area where commercial agriculture is practised. One of these said land reform should take place in the Nsikazi district.



Steven Hearne
 These two areas are reformable.
 x This area may be wider, but must have a high potential in order to be suitable for land reform.



Fred Cronjé
 i This farm will be bought in the near future by 150 families as a land reform project. This is the first one in the Nelspruit district.
 ii Land reform must take place here with thorough planning.
 iii This land was bought for some purpose and then sold later for a waste disposal site.

Hennie Olwagan
 The area to the west of this line, is definitely not reformable. The area to the east is not reformable because it has no potential for agriculture.
 x Peebles is a farm that some people claim they have been removed from. A few farmers hope to buy it. The chances are about 90% that the farmers would sell it to the trust if the price is acceptable.

Wilhelm Schmidt
 The area to the west of this line, is not reformable, especially not the far western areas, because that is only suitable for forestry. The area to the east of the line is very reformable: ca 1 million blacks live here and about 1 100 are jobless (sic).

(Source: GIMS 1998; Farmers 1998 pers. int.)

Figure 3.9: Areas discussed for land reform

Mr Cronjé indicated that a land reform project is to be launched on the Schagen farm just north of the Crocodile river, and that one was initiated on the Cairn farm but that the land was resold to be used as a waste disposal site. Mr Olwagen identified Peebles as a place people claim they have been removed from. These projects are not listed in the DLA's documents on land reform projects. None of the farmers indicated that land reform should take place in the KNP or in the forested areas to the northwest, or further north towards the Northern Province.

3.4.3 Discussions on land reform comments and map

Even though many comments confirm that farmers are not resistant to land reform taking place, there is resistance to the requirements how land reform must be initiated and implemented. Discussions were dominated by modernist beliefs on the importance of education, training and the use of technology to produce large-scale intensively commercial agricultural practices, which will be part of national and international economic enterprise to benefit the rest of the region through taxation. Resistance was expressed against the political views of the non-Westernised Africans and their skills, education, hygiene, belief systems, character, morality and community structures. "There must be rehabilitation of his old manners"

The importance of giving people the opportunities to farm, however, was acknowledged. It was also recognised that appropriate land use planning was extremely important as well as intervention from outside, whether by the government or other body, in the form of financial support or other agricultural businessmen to share skills and knowledge.

3.5 FARMERS' OPINIONS ON PARTICIPATING

Interviewees were asked if they think all farmers should be involved in the decision-making process of land reform. Their responses were:

"You can't go and consult the masses. It's a senseless thing - that's now seemingly democracy."

"I think each farmer in this country! The current land reform is very much aimed at the commercial agriculture owner. I am worried about it ... If you look at the legislation you can't put a guy off your farm once he retires. He occupies space. The labour law is extremely negative. I also think the crime, or the farmers who are being murdered ... it's a subtle way of letting them stop farming. But they do it with legislation. And the cattle's hoofs are being hacked."

"I do think it is our business and if you want practical knowledge and practical experienced results, then those [farmers] are the people you have to go to. I think people who only study it [agriculture] in theory must seek advice from the guys who work with it practically."

"It is important to involve farmers because otherwise there is a stigma connected which sweeps people up. Involve them to get their true honest opinions, and especially on an individual basis, because in a group they might be too ashamed to speak up."

Farmers do believe their opinions are important and useful in land reform and decision-making. They are eager and willing to participate. Therefore strategies do need to be laid down to enable participation. The next chapter will therefore discuss the overall results from the interviews and propose some structural changes needed for decision-making in order to facilitate effective participation.

CHAPTER 4: CONCLUSION

“Land is the future.”

(Levin & Weiner 1997:98)

4.1 RESULTS FROM THEMATIC EXPLORATION OF LAND-RELATED ISSUES

Several issues related to land were presented to farmers in a part of Mpumalanga for discussions and mental mapping. Questions were asked on the history of black locations and where forced removals took place. Participants had to evaluate land use, land potential and water. They were also asked what their attitude towards current land reform projects and towards potential land reform in their area was and if they would consider their participation important.

The findings of the thematic exploration of the abovementioned themes are as follow:

- Water resources and increasing consumption is a major problem with an influx of people and the growing town of Nelspruit. The Crocodile and Sabie rivers were indicated as sensitive catchment systems within the region;
- Laws and policies regarding tenure reform is a threat to commercial farmers because it may lead to an increase of population densities on agricultural land;
- Land use planning is absent;
- Land should be assessed in terms of appropriate use and under-utilised land should be investigated for redistribution to those in need of farm land;
- Forestry and it's location within the catchment area is seen as a problem;
- Physical characteristics of land which was previously viewed as determining factors in land potential, can be technologically overcome;
- Education and training of land reform beneficiaries is essential, whether formal or informal;
- The dichotomy of two very different types of agricultural systems still exist, but where it was previously spatially separated, there now is an overflow and intermixing of the two with increased concerns, resistance and conflict.

The thematic RRA/PRA exploration technique thus highlighted concerns with a spatial dimension of farmers within a particular discourse. This information is helpful in

understanding why resistance occurs and where it might manifest spatially. Decision-makers will be able to foresee what type of strategies will lead to more resistance than others.

Further themes that might be useful to explore, are:

- the time-spatial manifestation of attacks on farms with information on the victims targeted;
- what type of land reform projects might be more acceptable for implementation in certain areas;
- forestry and appropriateness with regard to water consumption within the catchment area; and
- time-spatial analysis of population dynamics considering illegal immigration from Mozambique, and daily commuting patterns over the district boundaries.

4.2 STRUCTURAL NEEDS FOR DECISION-MAKING

Top-down decision-making structures will maintain the current dichotomy that prevails between the landowners associated with different paradigms of development. It is a matter of involving all landowners and those who need land, not only those affected by or involved in land reform. Land reform must be planned, managed and strategised locally, taking into consideration land need, potential, current utilisation and legislation.

Levin & Weiner (1997:22) call for popular democratic participation: "Popular participation is thus a process of organisation and struggle involving the conscientization of all people involved ... A popular and participatory rural land-reform program must articulate 'local' and 'expert' knowledge within a process of democratic public action social spaces can open up for accumulation strategies from below."

The state has traditionally been the main decision-maker and administrator of land and land issues. "A major challenge to development-from-within is how the role of the state is understood" (Levin & Weiner 1997:13). Viewing the state as a facilitator of local initiatives can be problematic due to its complexity as a set of institutions with internal conflicts "that reflect broader politics within society as a whole" (Levin & Weiner 1997:13).

The distribution of decision-making powers to various levels of society can become unmanageable and a threat to traditionalists, who depend on the state to act and implement development strategies. This implies that at both state and local level, views about involvement, participation and decision-making need to be reviewed and changed. People at grassroots level *have* to become involved for decisions to be more democratic and their implementation and acceptance to be more successful.

It is important to identify certain key structures within a community and knowing the appropriate manner in which to approach people within those structures. An understanding of gender and class issues within and between communities is essential as well as taking account of the resistance that occurs among and between communities at local level. Networking is part of a process whereby firm relations must first be established to enhance understanding of the community and providing them with an understanding of the role of facilitator and/or researcher. Mutual trust is created over a period of time and therefore a single field trip is not sufficient. It is not possible to develop a comprehensive understanding of land issues from behind a desk or computer. Integrated decision-making is therefore a process that will take time and effort but will eventually be worthwhile.

4.3 GISs AND MENTAL MAPPING METHODOLOGY

GISs were used in the display of land-related information for land reform. Land is a spatial phenomenon and cannot be assessed or evaluated without being viewed spatially or conducting a spatial analysis on it. This is where traditional approaches to analysing land lack depth. GISs and cartography improved spatial visualisation not only for the expert, but also the public who were involved in the interviews and CiGIS workshops. All participants found it extremely easy to locate themselves on the topographical map and make comments on areas they have known mentally for a long time, even though this information was not learnt by studying a map. Field reports and statistics fail to reach a larger public on a limited amount of paper in a limited time-set. Presenting maps at a workshop for three hours allow large groups of people to obtain information on projects immediately without having to study voluminous reports in advance. Working in groups also allows individuals to make more comments than would be the case in a large forum where the whole group has time to present their case.

Mental mapping exercises proved to be very successful in the eyes of the CiGIS project team and the participants. People were interested in viewing ideas spatially and in seeing where perceptions on certain areas complemented or conflicted with one another. The CiGIS concept and methodology is in the process of being adopted by the provincial DLA's Strategic Planning and Development Unit, located in the Premier's Office in Nelspruit, Mpumalanga. This team includes representatives from the Provincial Department of Land Affairs and Agriculture, the LAPC in Johannesburg, Lowveld Escarpment District officials and the original WVU's CiGIS project team (Weiner & Harris 1999:18). The methodology is easy and quick to implement once the base coverages are in place, cleaned, edited and projected. Many new issues which coincide spatially came to everyone's attention and might have slipped away unnoticed if presented in another format outside the GIS.

This method can approach land reform sustainably by instituting land use planning through assessment of all land-related issues spatially. By analysing, for instance, where land is under-utilised or not used appropriately by the majority of communities at local level, land potential and needs can be taken into account to address the situation and optimise land use. Fewer people will be threatened by pressure from the published statistics on the need for land. This approach might also help to create consensus on local level and bridge the dichotomy over different land approaches when all land owners realise the need for a more holistic management strategy at local level, and that it is dependent on them, and not the state, to introduce and implement it.

The method can potentially be used on the Internet. In this case the state would be ideal for managing the site and administering information to users and as well as information received from the public. Accessing a user-friendly GIS on the Net might enable more people to view information in their own time and report back on an individual basis. This might, however, privilege those that do have the time, access and finances to afford the technology and the Internet. But it could empower more people and ease the information flow between the public and state. However, too much data-gathering can become a problem in terms of relevance, management and data storage. Yet implementing such a strategy will also lead to broader participation of all parties involved, not only those who are immediately concerned about their land.

4.4 PROBLEMS –CURRENT AND POTENTIAL

To develop the potential of this research project and customising a GIS for decision support within the context of land reform, it is important to review the problems experienced so far with the research and GIS in particular, as well as foreseen problems that might occur. This section lists the problems on various levels that were experienced with this research project and possible problems of implementing the approach and methodology in the future.

Problems experienced which might limited the applicability of this approach:

- Inter- and intra-organisational politics and conflict between organisations and communities and within communities themselves;
- Dichotomy in belief systems and agricultural practises;
- Obtaining digital data;
- Obtaining recent, complete and high accuracy-level data;
- Privacy and security issues of information obtained from state and other participants;
- Designing database structures and setting up standards for organising multi-media to ensure that all relevant information is linked to particular themes of interest;
- Errors in digital data obtained as well as locational fuzziness of the mental maps;
- Change and general dynamics of the region ranging to macro-scale economic, political and social levels;
- Initiating research, networking and conducting workshops are time-consuming;
- Distance between centres of research and communities.

Problems envisioned for the future:

- Obtaining information is costly, whether it is digital data from other companies, or mental maps, photo's, video clips or recorded interviews;
- Imagery and voice recording takes up space in a computer;
- Maintenance of links in multi-media database structures, especially when new information is introduced;
- Setting up and maintaining an internet site;
- Issue of privacy and security to members of the public;
- Sharing of confidential data which is state property;

- Committed participation and interest from community and statutory members;
- Accommodating structural and social change by all members of the society.

Even though these problems do limit the potential use of GIS in a bottom up approach to decision-making for land reform, not all are impossible to overcome. What is important is the human factor in the decision-making process and attitude to participation, which the following section will discuss.

4.5 REQUIREMENTS FOR PARTICIPATION

Participation and structural adjustments are necessary and important to facilitate a bottom-up approach to decision-making. The benefits might be in the form of less resistance and better understanding of the dynamics between and within communities and how they view reality. As Chambers (1997:76) states: "For learning, power is a disability". Change requires new ways of learning, and for that decentralisation and a degree of disempowerment is a necessity. Personal requirements for effective participation are:

- A change of attitude;
- Flexibility to learn in non-conventional ways and adoption of new techniques and ideas;
- Interest and willingness to take part and risk;
- Dedication and determination;
- Changing of perceptions and cultures of violence, aggression, and victimism;
- Willingness to share;
- Sense of responsibility in working towards solutions.

Participation should occur at district level, if not at a lower level. Approaching land use and planning on a regional level, such as catchment area, has also been successful - as for example in the new Regional Catchment Strategies employed in Australia (Department of Natural Resources and Environment 2000). Participation needs structure and people. Most importantly is that people of all parties residing or owning land in a particular area should be willing to become involved in decision-making and be dedicated to it. People must realise that their environment and what happens to it is their responsibility. The culture of demanding that someone else take responsibility for management and provision of resources and means of security must be abolished. Claiming security and resources for

one's own gain and security also needs to be replaced with a willingness to share and co-operate in finding solutions and compromises. Change must be participated in eagerly and constructively by all, no matter what their opinions and perceptions. If people can shape their perceptions on land and land use in the future, people must starting shaping a new future where all are beneficiaries of resources.

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APPENDICES

A: COMMUNITY-INTEGRATED GIS STUDY OUTLINE

West Virginia University, Morgantown, USA launched this project in the Mpumalanga province of South Africa called "Community-Integrated GIS for Land Reform in Mpumalanga Province, South Africa" The summary outline of the research is given in the next four pages.

pp.70-73

B: SITAMA INPILO FARMERS ASSOCIATION BUSINESS PLAN

This business plan was obtained from the Provincial DLA's Strategic Planning office in Nelspruit Mpumalanga, 1998.

pp.74-78

C: NATIONAL LAND REFORM STATISTICS

Source: DLA 1999

p.79

D: MPUMALANGA LAND REFORM STATISTICS

Source: DLA 1999

p.80

E: METADATA OF DIGITAL SOURCES USED

Table with list of coverages, year, scale, data processing and companies' information.

p. 81

F: INFORMATION ON FARMERS

Index of the farmers and mental maps drawn.

pp.82-89

G: LETTERS WRITTEN BY FARMER ON LAND REFORM

The section contains three letters written by Mr Fred Cronjé regarding farmers' concerns on land reform.

pp. 90-93

“Community-Integrated GIS for Land Reform in Mpumalanga Province, South Africa”

Introduction

A research project directed from West Virginia University (WVU) is to develop a prototype “Community-Integrated GIS” in the lowveld district of Mpumalanga Province. The GIS is broadening the base of current GIS use and incorporates socially differentiated local knowledge. A major challenge now is to implement this new concept into the planning, implementation and monitoring/evaluation of land reform programs and projects. In this memo, we identify some critical questions and methodological issues associated with community-integrated GIS for land reform. This is done in support of a new community-integrated initiative that is located within the structures of Provincial and local government of Mpumalanga. The intention is also to help build local capacity in the use of GIS that is more inclusive and accessible.

Traditional GIS tends to be highly technical and often reinforces existing social and spatial inequalities. As a result, the concerns of poor and marginalized people are often underrepresented in GIS-based spatial decision-making. Our Mpumalanga project seeks to maximise the participation of a wide range of stakeholders in the GIS production by drawing on relevant experiences, perspectives and skills. Specifically, participants included residents of the former homelands, the white farming community, farm workers, and the Provincial DLA. Within the former homelands, particular sensitivity is given to gender perspectives and the post-apartheid re-constitution of the institutions of the chieftancy and traditional authorities. (note: class-based perspectives were not investigated in our pilot project, but do need to be incorporated into the new initiative).

Critical Research Questions and Concerns

1. *The historical geography of forced removals*: Key issue here is to broadly identify land histories and to also better understand overlapping claims.
2. *Differential perspectives on land potential*: Land users have differing perspectives on the criteria and location of “high,” “medium,” and “low” potential land. This is dependent on the local community’s own conception of what land potential means and how land should be used.
3. *Socially appropriate and inappropriate land use*: We are concerned here with understanding land use from the perspective of peoples’ needs and to go beyond the very narrow focus on need from a ‘market-led’ perspective. This includes uses of state land, underutilized land, the inappropriate location of forestry, or other land uses on high potential land, and perspectives on land for game tourism, etc.
4. *Politics of access to natural resources*: The objective here is to view access to land, water and biomass as social and political processes.
5. *Identification of areas where land reform should take place*: The purpose here is to better use local knowledge in the identification of potential project and their

locations. At present, willing sellers (and often inflated prices!) are dictating where land reform can take place.

6. *Participatory land use planning*: Land reform beneficiaries and potential beneficiaries draw land use plans.

Methodology

The WVU research methodology combined traditional GIS with qualitative and participatory methods.

Production of Traditional GIS Coverages

This approach continues to draw heavily on traditional GIS coverages produced at a variety of scales. These include: hydrology and dams; transportation; contour and elevation; land cover; nucleated settlement; land types and land quality; political and recreation boundaries; cadastral; state and public lands; forestry plantations and species; etc.

Participatory Mental Mapping

Participatory mental mapping for the WVU project involved the use of tracing paper overlaid on topographic map sheets. Each social group interviewed, represented their views about the key questions on the tracing paper. Pencils and colored markers were used on the tracing paper so that each question had a particular color code (for example, answers about forced removals were drawn in black, while answers about land potential were drawn in green.) In this way a diversity of community perspectives about that particular landscape were studied. Corresponding register marks were established on each of the four corners of the tracing paper and the base map, and both the tracing paper and the base map were given identical labels to aid future identification and/or (re)orientation, if need be. This participatory mental mapping with tracing paper was done for questions 1-5. The information is now being digitized and will become part of the GIS data base.

The mental mapping sessions consisted of between five and seven people, where possible. Selection of group members was done by the local people themselves after the mapping procedures had been explained to them. The groups were then advised by two facilitators. The groups were located far apart from each other and preferably not in the presence of their local leaders. Groups of men and women were interviewed separately.

In all the mapping exercises, the field methodology was explained initially to the local people in attendance before the actual mapping activity began. This was repeated again in more detail to the groups by the facilitators. In the WVU study, the mental mapping involved two topographical maps covering the same geographical area. Map 1 was at a larger scale (thus covering a limited geographical area), and Map 2 was at a smaller scale (thus covering a wider geographical area). Map 2, which was divided into quadrants, was used alongside Map 1 (as a composite) to help (re)orient and accustom

local people to the study area. One major advantage of Map 1 was that it was much more legible and easier to work with. Both base maps were overlaid with tracing paper and annotations added. In future work, the use of GIS maps may also be used.

The mental mapping exercises were taped and are now being transcribed. There were also video recordings and photographs taken. This multiple information will soon be integrated into a GIS multi-media format as mutually supportive and complementary data. This multi-media GIS has the potential to become a powerful tool for decision-making around land reform.

Participatory Land Use Planning

After completion of the mental mapping exercises, participatory land use planning (question 6) was done. This involved a large piece of blank cartridge paper taped onto a flat surface. For this mapping exercise, groups of 5-7 people used soft pencils and erasers, and the exercise was purely imaginative and iterative, except where the mapping involved cases of beneficiaries (i.e., those who have already acquired land in the land reform programme). The groups were asked to draw a map of how they would like to see their land used if they had access to land in a land reform program. Upon completion, pencil drawings on the land use plan were enhanced in ink for clarity and permanency. This exercise involved mainly three types of residents of the former homelands:

- (a) people who have already benefited from the land reform programme.
- (b) people who have submitted their claims and are yet to benefit.
- (c) non-beneficiaries.

GIS Applications

There are many potential applications for a community-integrated GIS. Here are some examples:

- patterns of forced removals and overlapping claims, including the growing claims from the tribal authorities, who are becoming re-energized in some areas
- location of underutilized land
- location and use of state lands
- relationship between 'expert' and 'local' understandings of land potential
- mapping the rapid growth of peri-urban areas
- identifying exotic forest plantations on high potential arable land and critical water catchment areas;
- re-engineering of water catchment and (re)distribution as an integrated management approach;
- appropriate locations for land reform projects
- monitoring and evaluation of land reform (this should include monitoring the price of land sold for land reform)
- involving ordinary people in land use planning for specific projects
- understand how different types of people understand the landscape and feel that land should be used

- better understanding of why certain land use changes are taking place (for example, de-stocking on white farms)

Conclusion

The ultimate goal of a community-integrated GIS is to incorporate communities in the generation and analysis of information that can be used by planners. The GIS brings a diversity of information together to get a much more complete understanding of the local landscape. The mental maps may not necessarily be geo-referenced, but are powerful symbolic representations of the potential importance of local knowledge aligned with traditional 'expert' knowledge. A community-integrated approach also helps to incorporate other issues such as environmental impact assessment (EIA), which becomes imperative in strategic planning for land reform. The top-down, bureaucratic development model, which is normally project-driven, often *assumes* local situations and needs, and no deliberate effort is made to seek local people's views. Tapping into local knowledge by using participatory methods will help to address real local issues, ask the right questions, and democratise the development process.

The use of GIS in this context will enhance the processing of such multiple information as well as legitimise local knowledge and skills, thus reducing social inequalities in representation. Voices of local people should no longer be filtered through the power of representation of the 'experts' and local elites, particularly during this vital programme of land reform in South Africa.

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SITAMA IMPILO FARMERS ASSOCIATION BUSINESS PLAN

1. BACKGROUND

- 1.1 The Sitama Impilo Farmers Association Redistribution project involves the development of an agricultural operation on Portions 1,15,16 & 17 of the farm Primkop 116 JU portions 1,15,16, & 17.
- 1.2 The beneficiary community consists of 100 households based in Gutshwakop and the surrounding Nsikazi settlement which is within a 10 kilometre radius from the farm they intend buying.
- 1.3 Gutshwakop settlement is about 15 km East of White River, with its western side characterized by commercial farming enterprises.
- 1.4 Employment opportunity in the Lowveld Region is mostly available in the form of farm labour.
- 1.5 From around 1994 most farmers decreased their farming activities resulting in loss of job opportunities around the Nsikazi District.

2. AIM OF THE PROJECT

- 2.1 The aim of this project is firstly for the Association in the form of a representative and legitimately established legal body to take over formal ownership of the farm Primkop 116 JU, Portions 1,15,16 and 17 in White River District, Mpumalanga Province.
- 2.2 The underlying objective of this project is to improve the quality of life for the members of this beneficiary community and that is why they have called themselves "Sitama Impilo" which means "we are trying to survive". This objective will be achieved through the following initiatives
 - a) The transfer of the property Primkop 116 JU to the Association.
 - b) Resumption of farming activities on the farm to the benefit of the association

3. APPLICANT'S PROFILE

3.1 NAME OF COMMUNITY

- 3.1.1 The name of the association is Sitama Impilo Farmers Association, to be legally known as Sitama Impilo Communal Property Association.
- 3.1.2 The association comprises of 100 beneficiary households.

4. PARTICIPATION AND ROLE PLAYER CONSULTATION

4.1 WOMEN'S PARTICIPATION

Women have shown interest in agriculture. They have always been a part of the decision making throughout the process of this project. They are very determined to work as farmers. They are also represented in the committee which was democratically elected.

Women are being afforded equal rights in the decision making and the running of the project. Certain women are heads of households and all women have equal voting rights. The committee comprises of 50% women and they make an important contribution in the management of the Association. This is also evident by the fact that the vice chairperson is a woman.

4.2 ROLE PLAYER CONSULTATION

- 4.2.1 Advertisements were placed in two local newspapers indicating the intentions of the Sitama Impilo Farmers Association. Interested parties were asked to submit any written representation which they wish to make in respect of the contemplated designation
- 4.2.2 No objections were received in response to the advertisement. This is an indication of acceptance by a broader community.
- 4.2.2 The project also has the support of the Transitional Rural Council of Nsikazi District.

4.3 DEPARTMENT OF AGRICULTURE

- 4.3.1 An agricultural potential evaluation was conducted by the Provincial Department of Agriculture. In their report they have indicated that extension services would be considered of high priority to assist the new farmers on this farm unit.

4.3.1 An extension officer of the Department of Agriculture, Mr Mahasha, has already shown commitment towards the project by attending most of the meetings concerning the project.

5. LAND IDENTIFICATION

5.1 NAME OF THE FARM

Portions 1,15,16 &17 of the farm Primkop 116 JU. The land is in extent of 80.3 hectares

5.2 PHYSICAL LOCATION

5.2.1 The farm is located in the White River District, in Mpumalanga. The farm has direct access to the Plaston - Karino road. An International Airport has already been granted conditional approval by the Mpumalanga Tribunal. These developments together with the Maputo Development Corridor will boost the economy and create job opportunities.

5.3 DESCRIPTION OF EXISTING LAND USE AND FACILITIES

5.3.1 LAND USE

The land under permanent irrigation and cultivation is 69 ha

The land under cultivation will be utilised as follows

8 H A Under Eureka Lemons (1000 trees per Ha). The age of trees is 21 years.

3HA Under midnight valencia (1000 trees per HA). The age of a trees is 2 years.

58 HA for the Following crops:

25 HA Tobacco (summer)

8 HA Sweet potatoes (Local exported in winter)

2 HA Chillies for fresh markets

2 HA Green peppers also for fresh markets. Alternative cashcrops replacing chillies and green peppers every other winter was butternut and gem squash.

The balance of the land (21Ha) is not under any of the above-mentioned crops. It is left to rest in order to practise crop rotation as part of effective conservation and sustainable farming

11 Ha of the total area of the farm is occupied by buildings, 2 dams, road and rocky outcrops

5.3.2 PHYSICAL FACILITIES

1 Main house with double garage
laundry
servants quarters
pool house
general storeroom
garden toolshed

1 Managers house with -

Double garage
laundry
Office
Servants Quarters

A Compound for Labourers consisting of:

7 at 3 room houses

7 at 2 room houses

7 at 1 room houses

1 Building shed
1 Grading shed
1 Workshop
1 Fertilizer shed
1 Tractor garage
1 Ration storeroom
One hand implement storeroom
One chemical storeroom
One spares room
Nine bulk curers with hot water heating system
One seed tray storeroom
Two stables for animals (Houses or cows)
One seedling nursery for marketing vegetable or tobacco seedlings
1 school (grade 1 to grade 4) consisting of 1 classroom, office and book store.
3 at double brick and mortar chemical toilets
running water
2 dams with respective approximate holding capacity of 66 000 cubic metres and 8006 cubic metres
3 pumphouses with Eskom power

5.4 PRESENT OCCUPANTS

Mr & Mrs S.V. Scheepers are the current occupants of the farm.

5.5 PROPOSED LAND USE

The association intends continuing with the present farming activities and also wish to set up a poultry farm and other economic activities which may present themselves. The Association does not intend to put up a residential settlement on the farm.

5.6 VIABILITY OF PRODUCTIVE POTENTIAL

An agricultural potential report has been conducted by Department of Agriculture. According to the report the project is viable and the services of Extension Officer has been recommended.

5.7 PRODUCTION RELATED PROJECTS

5.7.1 EXISTING PROJECTS

- * Citrus for local and export markets.
- * Sweet potatoes for local and export markets.
- * Vegetable farming for local marketing.
- * Tobacco production (needs high level of experience)

5.7.2 POTENTIAL PROJECTS

5.7.2.1 PLANT PRODUCTION

Preliminary discussion with Dick and Hall and Sons are planned for contracting the Association for Lemon juice and Lemon oil extraction from fruit delivered from existing lemon orchards.

Planting and curing paprika with existing caring system under contract for the export market.

Mangoes for local, export and atchar and dried fruit industry.

Expanding on citrus plantings of the above-mentioned potential projects and then contracting with Dick and Hall & Sons has the most potential as the orchard is already existing and in production

The infrastructure for curing and grading paprika for export already exists and by negotiation the process can be activated quickly.

5.7.2.2 OTHER BUSINESS ACTIVITIES AND TOURISM

As already mentioned, the farm which the community intends to acquire is located within 1 kilometre radius of the proposed Primkop Airport and within Maputo Development Corridor. The Primkop Airport has already been approved by the Mpumalanga Tribunal. A lot of economic opportunities are going to be created through these new developments.

The Community is aware of these opportunities and it has indicated its willingness to take advantage of them. It has already indicated that it will continue with agricultural production with a focus on targeting both local and international markets.

On the Primkop Airport, the Community intends to look at developing storage facilities on the farm which could be used to generate income by catering for goods to be transported by air transport, both locally and internationally. Another important aspect is to look into accommodation establishment. There is already two big houses which the Community has indicated its desire to use them as guest houses for tourism.

It was also agreed that after designation by the Minister, an indepth study of the viability of the above proposal as well as other opportunities which could be pursued, be done. Source of finances should also be identified with a view of financing those ventures.

5.8 PROJECT CONTRIBUTION TO OTHER ECONOMIC ACTIVITIES THAT THE APPLICANTS MAY BE INVOLVED IN

As a result of the Proposed Primkop Airport and Maputo Development Corridor, the project can contribute to the following economic activities:

Creating overnight facilities in the form of a lodge in the main house, which is suited for such a venture.

Running day tours to the Kruger National Park and neighbouring game farms as well as Sabie, Pilgrims Rest and Blyderiver Canyon.

Handling (cold storage, booking of freight delivering to the airport) produce on an agent basis for distant farmers who would like to export via the Primkop Airport.

Because of the increase of tourist traffic in the area the Association is considering a Roadstall (something like Hall's gateway) selling fresh and processed fruit, African hand craft and vegetables.

This would give members of the association the opportunity to create articles in their spare time and earn extra income by selling it to tourists visiting the Roadstall.

5.9 PRODUCTION POTENTIAL OF THE LAND

The property lies in a high potential agriculture area with good water resources, rainfall and climate for the successful production of most subtropical fruit and vegetable crops.

With the Maputo Development Corridor and the proposed Primkop Airport the property also lies in the centre of a high potential industrial and eco-tourism area.

5.10 FEASIBLE IMPROVEMENTS TO ENHANCE PRODUCTIVE VALUE OF THE LAND

THE AVAILABILITY OF WATER

There are four water sources on the the identified property namely;
 Ranch - Karino irrigation board (56,5 ha)
 Manchester - Noordwyk pumping scheme from the crocodile river (40 ha)
 Private dams with a holding capacity of 66 000 cubic metres and 8 000 cubic metres respectively
 Borehole (domestic use)

6. LAND MANAGEMENT

- 6.1 The association has set up a Communal Property Association. The main objective of the Sitama Impilo Communal Property Association will be to hold property on behalf of all beneficiaries registered with the Association.
- 6.2 The committee which manages the affairs of the Association consists of 11 members. Its management principles are based on the Communal Property Association Act, which promotes fairness and equity.
- 6.3 In terms of the constitution there will be equal profit sharing on an annual basis.
- 6.4 The Association intends to appoint one member from within to be the farm manager. It is envisaged that the Africon fund could be used to appoint an experienced farm manager who could work on contract for approximately three months to train the farm manager appointed by the Association, so that he could ultimately take over the management of the farm.

- 6.5 The farm manager whether appointed on contract or full time will be accountable to the Committee of the Association. He /she will implement strategic decisions taken by the Committee with the approval of the General Meeting of the Association.
- 6.6 The channels of communication for whoever, will be through the administrative set ups which were put in place by the Association.
- 6.7 If the issues are above his/her control, the matter will then be taken up with the committee who in turn must seek a mandate from the general meeting if it is a matter of an extraordinary nature.

7. TENURE ARRANGEMENTS

- 7.1 The association intends farming communally. It will be a job creation machine as well as an income generator for the community.
- 7.2 The Associations' members will be employed on the farm and will receive remuneration for their labour contribution, as well as a share in the profits in times of profit sharing. Benefits may be tailored for the members of the association who may not be working on the farm by means of discounts from farm products.
- 7.3 The tenure arrangements will be done by means of a management set up as spelt out in the management of the farm .
- 7.4 The committee will make recommendations to the General Meeting on dividends to be paid out as well as income to be retained. In short, the management of the farm as well as the tenure arrangements will follow a company's line of functioning, but following the Communal Property Association's Constitution.

8. FINANCIAL IMPLICATION

The financial breakdown of the project is as follows;

Settlement and Land Acquisition Grant	R 1 500 000
Valuation Price -Land	R 1 213 500.00
Valuation Price - Moveable Assets	R78 200.00
Total Valuation Price for Land and Moveable Assets	R 1 291 700.00
Agreed selling price of land and moveable assets	R 1 100 000.00
Remaining funds for development	R400 000.00

9. Land development

After the payment of R1 100 000 towards the acquisition of the land and moveable assets, an amount equal to R400 000 will be the balance available for land development. Another amount equal to R10 000 is available from the beneficiaries' contribution.

However, the amount could be very little taking into consideration that implements like tractors and others are not part of the purchase.

Production capital will also be needed to see to it that the farming venture start operating. Development of other proposed farming activities also need more money.

10. ARRANGEMENTS FOR IMPLEMENTATION

10.1 Phasing of the project and time frames

- (i) The first major step for the project by Sitama Impilo Farmers Association is being designated by the Minister of Land Affairs. Immediately after designation of the project, a detailed Business Plan must be compiled following the guidelines of this Preliminary Business Plan.
- (ii) Implementation of the project will be based on the Preliminary Business Plan and detailed Business Plan.
- (iii) It is therefore envisaged that the project could be designated some time during May 1998. Completion of registration of a CPA is expected during March 1998.
- (iv) While the transfer of property is taking place, selection of a Planning Agent who will help with the drafting of a detailed Business Plan will start.
- (v) It is therefore expected that the project could start functioning in June /July 1998.

10.2 Balance of the settlement grants

The balance of the settlement grant, amounting to R400 000 .00 will be used for development as well as for production capital. The detailed Business Plan must clearly indicate how the balance can be used as well as how other funds could be accessed from financial institutions so that the money could be enough to kick start the project.

10.3 Detailed Business Plan.

- (i) The Settlement Support Division in the Mpumalanga Provincial Office, will coordinate the drafting of the detailed Business Plan using the services of agricultural experts.
- (ii) An Agricultural Expert will be selected using the PROPS system to draw the detailed Business Plan. Relevant stakeholders, like the Department of Agriculture, Strategic Planning Branch and the RDP branch in the Province, as well as the committee of the Association will be involved in selecting a Planning Agent.

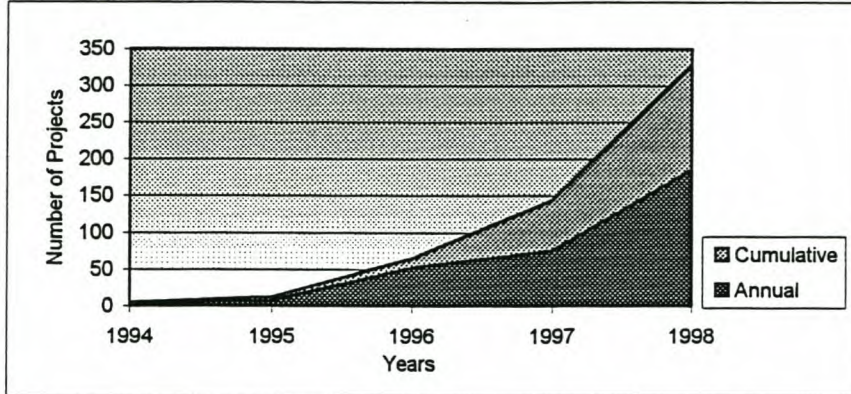
11. CONCLUSION

The Association is very determined in setting up the proposed farming venture. This is evident from the fact that they have struggled, poor as they are to raise R10 000 towards the realisation of the project.

APPENDIX C: NATIONAL LAND REFORM STATISTICS

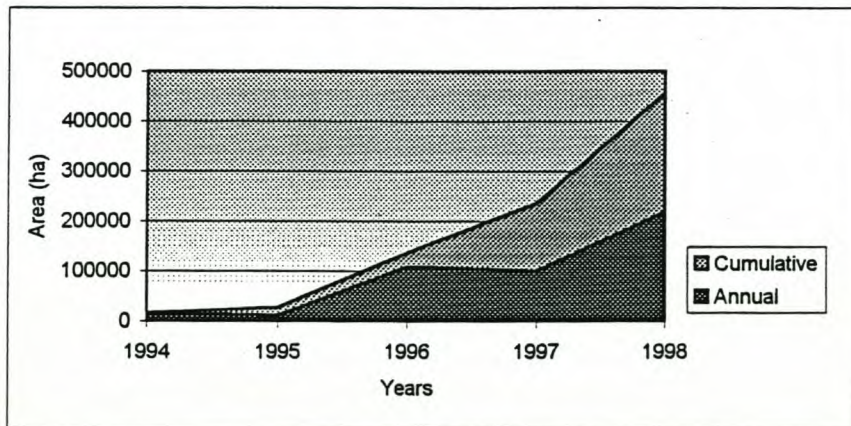
Projects designated from 1994 to 1998

	1994	1995	1996	1997	1998
Cumulative	5	13	66	144	329
Annual	5	8	53	76	185



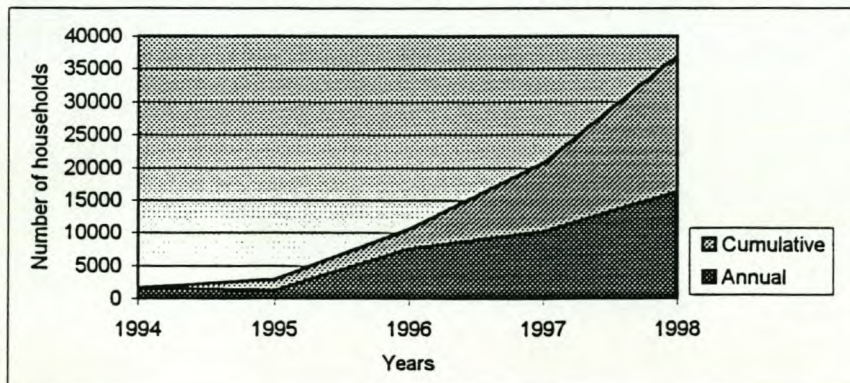
Area in Hectares Designated from 1994 to 1998

	1994	1995	1996	1997	1998
Cumulative	17019.42	27989.25	137064.36	237117.58	456331.61
Annual	17019.42	10969.83	109075.11	100053.22	219214.03



Housholds involved in Designations from 1994 to 1998

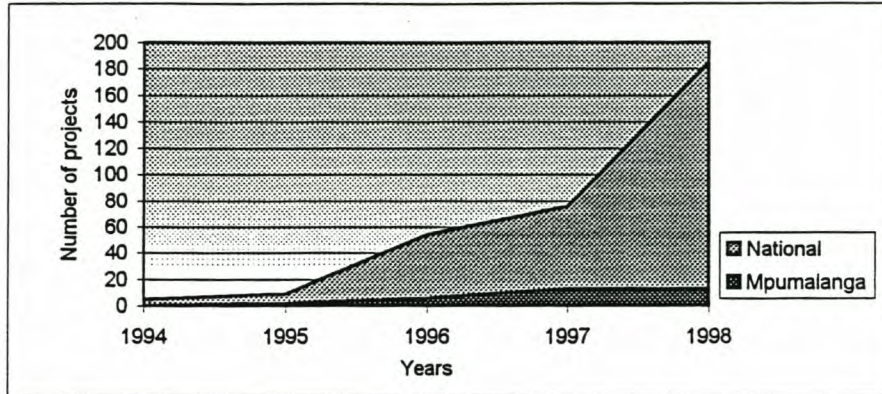
	1994	1995	1996	1997	1998
Cumulative	1674	2949	10571	20752	37004
Annual	1674	1275	7622	10181	16252



APPENDIX D: MPUMALANGA LAND REFORM STATISTICS

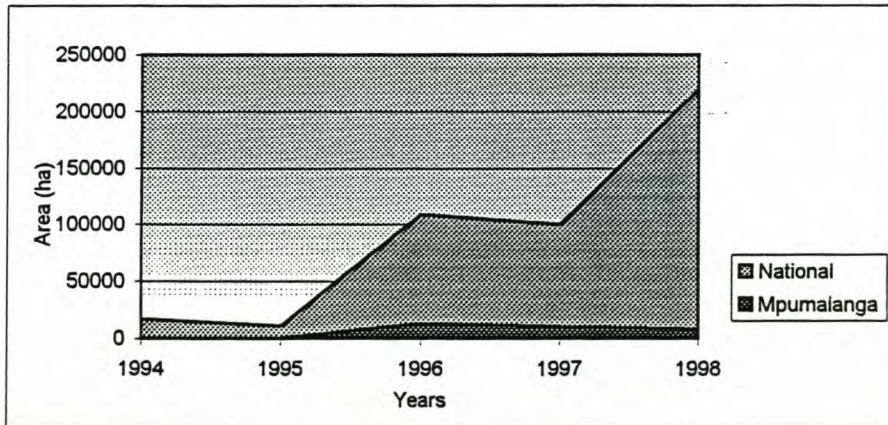
Projects designated from 1994 to 1998

	1994	1995	1996	1997	1998
National	5	9	54	76	185
Mpumalanga	0	2	6	13	13



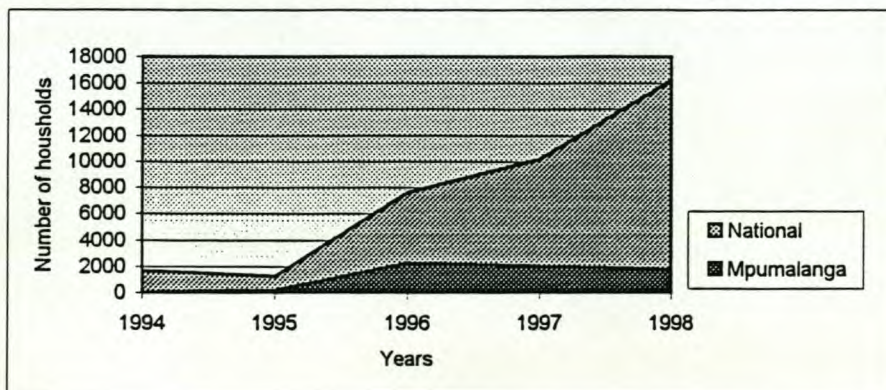
Area in Hectares Designated from 1994 to 1998

	1994	1995	1996	1997	1998
National	17019.42	10969.83	109075.11	100053.2	219214
Mpumalanga	0	725.63	13285.86	10704.94	8213.67



Households involved in Designation from 1994 to 1998

	1994	1995	1996	1997	1998
National	1674	1275	7622	10181	16252
Mpumalanga	0	176	2304	2054	1811



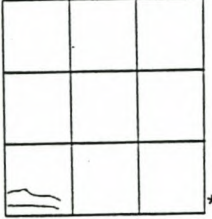
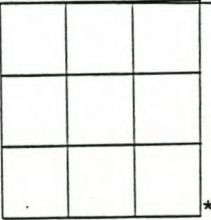
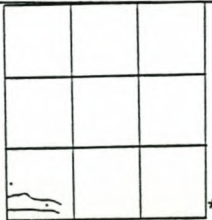
APPENDIX E: METADATA OF DIGITAL SOURCES USED

Coverage:	Source:	Date captured:	Scale captured:	Type:	Method of capturing:	Processing:
Africa outline	Internet			Polygon	Captured in jpg format.	Displayed in ArcView.
Built-up areas	GIMS	1984-1986	1:50 000	Polygon	* Scanned from 1980s topographical map series; heads-up digitizing.	* Received in ReGIS format as 6 files; converted to shapefiles and cleaned, edited, edgematched and projected in ArcInfo.
Cadastral boundaries	Cadnet	1997/ 8	1:10 000 & 1:20 000	Line		Obtained in shapefile format, processed in ArcInfo.
Contours	GIMS	1984-1986	1:50 000	Line	* and contour generation.	*
Dams	GIMS	1984-1986	1:50 000	Polygon	*	*
Index	WVU	1997		Polygon	AI generated according to dd of topographical maps.	Outline of scanned topographical maps of case study area.
Landtypes	ISCW / ARC		1:250 000	Polygon		Polygons created in ArcInfo, classified and reclassified in ArcView.
Landcover	Cadnet (from SAC, CSIR)	1994 -1996	1:250 000	Polygon	Originally Landsat TM manual photo interpretation.	Projected in ArcInfo, displayed in ArcView.
List of Public land	DLA / PLI			Dbf		Joined to correlating parcels in the Cadastral dataset.
Magisterial districts	DLA / PLI			Polygon		ReGIS format; processed followed as in case of built-up areas.
Mpumalanga districts	CSIR	1996		Polygon		
Rivers	GIMS	1984-1986	1:50 000	Line	*	*
Roads	GIMS	1984-1986	1:50 000	Line	*	*
South Africa outline of provinces	US			Polygon		Clean, built and projected in ArcInfo.
Tribal lands	Cadnet	1997/8	1:20 000	Polygon		Received in shapefile format; processed in ArcInfo.

Company:	Internet address:
Cadnet	http://www.netgroup.cp.za or http://www.netplan.co.za
DLA	http://w3sli.wcape.gov.za/indexIE4.ht
GIMS	http://www.gims.com

Company:	Internet address:
ISCW (ARC)	http://www.arc.agric.za/Inr/institutes/iscw/iscwcore.htm
SAC (CSIR)	http://www.sac.co.za
WVU	http://www.geo.wvu.edu

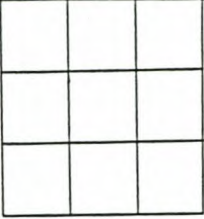
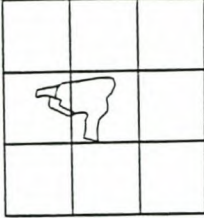
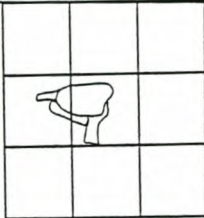
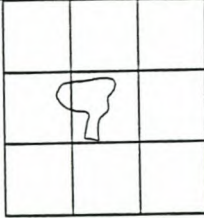
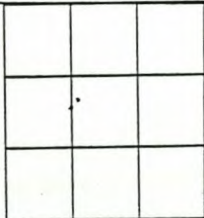
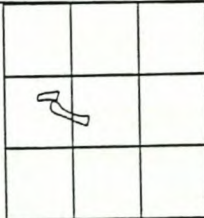
MR. FRED CRONJÉ
14 July 1998

Farms:	Parts 100-125 of a part of Alkmaar	Forced removals:	
Maps used for data collection:	2530 BD Nelspruit	Land potential:	"Everything is high potential except for very steep slopes. Get the % irrigated land from the Irrigation Council and take that as an indication."
Scale of map used for data collection:	1:50, 000	Land use:	"Forestry: would not necessarily reform. 10% of this area might be underutilized land."
Date of map used for data collection:	1984	Water:	
Location of farm within 9 quad reference frame		Land reform:	
Other info:	<ul style="list-style-type: none"> • 3 600 ha • citrus main crop 		

Map scale of location maps 1:466, 520


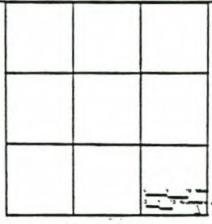
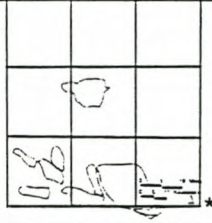
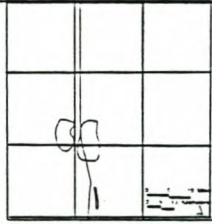
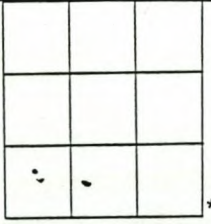
MR. STEVEN HEARNE

30 June 1998

<p>Farms:</p>	<p>Leagen (*) Langspruit Duminy (*) (* might have other names on map: Montbrasias & Euphorbia?)</p>	<p>Forced removals:</p>	
<p>Maps used for data collection:</p>	<p>2530 BB Sabie & 2531 AA Kiepersol overlap</p>	<p>Land potential:</p>	
<p>Scale of map used for data collection:</p>	<p>1:50,000</p>	<p>Land use:</p>	
<p>Date of map used for data collection:</p>	<p>1986 1984</p>	<p>Water:</p>	
<p>Location of farm within 9 quad reference frame:</p>		<p>Land reform:</p>	
<p>Other info:</p>	<ul style="list-style-type: none"> • 600 ha • half of it arable • bananas, avocado's, macadamia's • 80 families • father got farm ca 40 yrs ago; he built dam • "The landscape as it is, is the monument Apartheid has left us...." 	<p>Other:</p>	<p>MacWallis was the only coloured family of 5 that was living on the farm when he was a boy. The other 4 families were Mozambicans.</p>

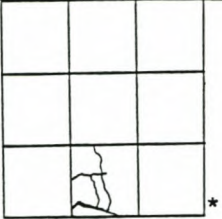
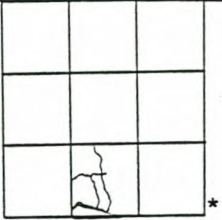
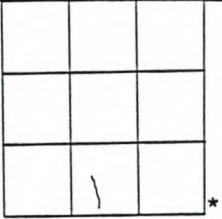
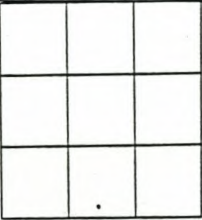
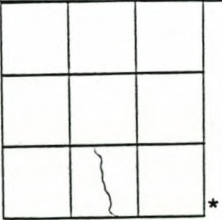
* Map scale of location maps 1:454, 304

MR. JAN MARAIS
7 July 1998

Farms:	Nelsdrif (Rusthof?) Boschieskop Parksig	Forced removals:	
Maps used for data collection:	DLA project map	Land potential:	
Scale of map for data collection:	1:150, 000	Land use:	
Date of map for data collection:	1998?	Water:	
Location of farm within 9 quad reference frame		Land reform:	
Other info:	<ul style="list-style-type: none"> • father got farms 1938; he inherited 1972 • 210 ha tobacco; 260 macadamia; 6 cattle compounds; little bit of vegetables • 7 farm managers; 	Other:	<ul style="list-style-type: none"> • 420 farm workers – 127 Mozambicans, Malawi, Zambia, Zimbabwe one from Swaziland and some Shangaans = influx from north in 40s/50s

* Map scale of location maps 1:490, 003

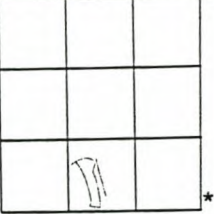
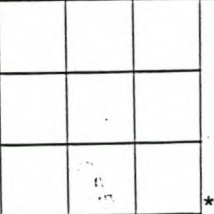
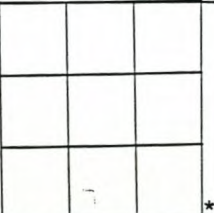
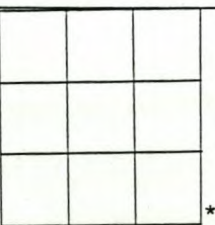
MR. HENNIE OLWAGEN
(farm manager of Mr. Andeon Visagie)
8 July 1998

Farms:	Neroli	Forced removals:	
Maps used for data collection:	2531AC Witrivier	Land potential:	
Scale of map for data collection:	1:50, 000	Land use:	
Date of map for data collection:	1984	Water:	
Location of farm within 9 quad reference frame		Land reform:	
Other info:	(was faxed to me because he had to get it from Mr. Visagie; unfortunately I left it at home....) <ul style="list-style-type: none"> • had farm attack a few days before interview; • very negative attitude towards land reform • tobacco, cucumbers 	Other:	

* Map scale of location maps 1:438, 157

MR. LOUIS & BARNEY PIETERSE

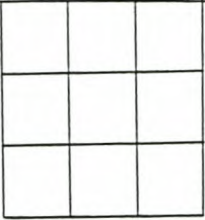
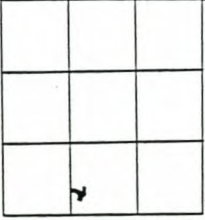
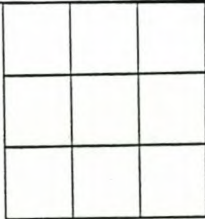
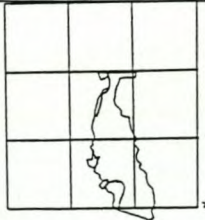
Farm managers of Mr. Jan Marais and Johan le Roux
 (farm owner who wants to sell land for airport close to Primkop)
 10 July 1998

Farms: (The following farms were indicated on the map and I've written down the names.)	Part of Bergvliet 123JU Part of Vergenoeg 124 JU Highover 111 JU Rusthof 114JU The Curlews? Primkop 116JU? Part of Umgenyana 102JU Part of Machester 121JU?	Forced removals:	
Maps used for data collection:	2531 AC Witrivier	Land potential:	
Scale of map for data collection:	1:50, 000	Land use:	
Date of map for data collection:	1984	Water:	
Location of farm within 9 quad reference frame		Land reform:	"Small ha lands don't work. Also they (black people) can't be large commercial farmers." (had about 30-40yrs of experience of farming)
Other info:	<ul style="list-style-type: none"> • Barney previously farmed on Broedershoek 1968-89; • Barney now 420 ha with 150 farm workers, 50 % Mozambicans; 	Other:	<ul style="list-style-type: none"> • Louis has had 60 ha for 6 yrs and additional 30 ha for last 2 yrs; • 50 people/farm workers on Louis' farm

* Map scale of location maps 1:445, 088

MR. BRAAM RAUBENHEIMER

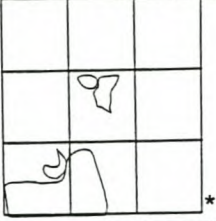
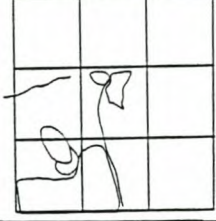
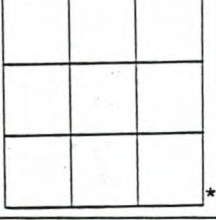
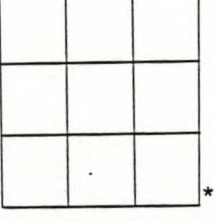
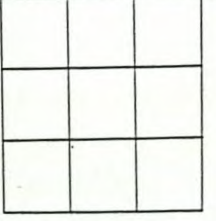
1 July 1998

<p>Farms:</p>	<p>Part of Freidenheim 282 JT Part of Vergenoeg 124 JU Part of Kinstonvale ??</p>	<p>Forced removals:</p>	
<p>Maps used for data collection:</p>	<p>2530 Baberton (Own map)</p>	<p>Land potential:</p>	
<p>Scale of map used for data collection:</p>	<p>1:250, 000</p>	<p>Land use:</p>	
<p>Date of map used for data collection:</p>	<p>1963</p>	<p>Water:</p>	<p>When his father was a farmer, the state owned the rights on the river (Crocodile).</p>
<p>Location of farm within 9 quad reference frame</p>		<p>Land reform:</p>	
<p>Other info:</p>	<ul style="list-style-type: none"> • 200 farm workers; 50% men; 50% women • forced removals done by Stevenson Hamilton in 1913 • 200 ha arable land on farm; 120 ha water rights on Crocodile river 	<p>Other: (locations of black settlements earlier – don't know date)</p>	
	<ul style="list-style-type: none"> • tobacco (main crop), small vegetables 	<p>Homelands + Farms he wanted to buy for homelands.</p>	

* Map scale of location maps 1:473 527

MR. STEFAN SCHEEPERS




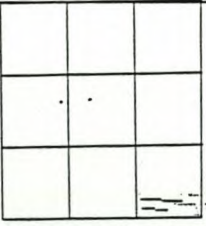
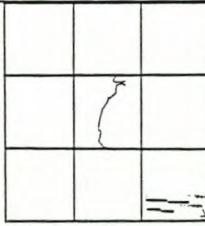
17 July 1998

Farms:	Primkop 116 JU parts 1,15,16,17	Forced removals:	Knows nothing about forced removals. (Born 1957).
Maps used for data collection:	12 Quad map	Land potential:	
Scale of map for data collection:	1:207, 000	Land use:	
Date of map for data collection:	1980s	Water:	
Location of farm within 9 quad reference frame		Land reform:	Focus on 20-30 ha farm plots; crops: maize, livestock and small scale vegetables; must have passion for agriculture.
Other info:	<ul style="list-style-type: none"> • sold farm to Sitama Impilo – “tired of farming”, “too many risks involved”; lecturer at agricultural college; • tobacco, then planted citrus; • only 11 ha on farm is not arable; • “forestry started to encroach / take over like a cancer” 	Other: Black locations previously	

* Map scale of location maps 1:446, 428

MR. WILHELM SCHMIDT

(10 July 1999)

Farms:	Avocado (10 morgen) Part 48,49,50 and residual 51 of part 9 of Burgershall (each 40 morgen)	Forced removals:	
Maps used for data collection:	2530BB Sabie & 2531AA Kiepersol overlap	Land potential:	Potential is high everywhere specifically for subtropical crops.
Scale of map for data collection:	1: 50, 000	Land use:	
Date of map for data collection:	1986 & 1984	Water:	
Location of farm within 9 quad reference frame		Land reform:	
Other info:	<ul style="list-style-type: none"> • on farm since 1955; father bought 10 morgen from John Colby 1951 • 55 ha bananas, 20 ha avocados, 3 ha ginger; • 100 farm workers permanent; mostly shangaan, 10 Mozambicans, most transmigrate 	Other:	Burgershall farm still has underground mining rights. Mines have first rights on this land, then farmers. (<i>His farm "Avocado" is located in this area.</i>)

* Map scale of location maps 1:436, 646

MEMORANDUM

15/3/97

TO THE OFFICE OF THE DIRECTOR GENERAL
DEPARTMENT OF AGRICULTURAL NATURAL RESOURCES CONSERVATION

FROM: AGRICULTURAL NATURAL RESOURCES COMMITTEE OF THE TRANSVAAL AGRICULTURAL UNION

THE SUBDIVISION AND CHANGE OF USE OF AGRICULTURAL LAND AND ITS USE BY PEOPLE INHABITING AGRICULTURAL LAND, AND THE ESTABLISHING OF SMALL FARMERS.

With reference to the above, the Agricultural Natural Resources Conservation Committee of the Transvaal Agricultural Union wish to express their deep concern regarding the implications of the above. This matter is of such importance, that the committee believes it of utmost necessity that discussions on this subject be held with your Office.

1. THE SUBDIVISION OF AGRICULTURAL LAND

In Act 70 of 1970, with which you are well acquainted, this issue on subdivision is covered. This act was promulgated to prevent the subdivision of agricultural land into units of uneconomical size.

This was however not just a simple matter of determining size, since other important factors are also required for consideration. Since the passing of this Act, many changes have taken place in South Africa.

What remains unchanged is that in order to produce crops for life's basic needs, one has to have an economical farming unit. We trust that you will not deviate from this formula, as our concerns relate to the following examples:

2. THE CHANGE OF USE OF AGRICULTURAL LAND

This matter gives us cause for concern, especially when there is an encroachment on high potential agricultural land.

We understand that development must take place, but the way it has been done since 1994 is not acceptable.

We can refer to a number of examples during discussions. We, as a committee are not in favour of any change of use of high potential agricultural land. Output from this land is necessary to feed the population of Southern Africa.

We feel that this would also be an ideal opportunity to discuss utilisation of land and conservation guidelines which are applicable. This includes existing farmers as well as farmers to be established in the future.

We believe it would be of utmost importance that conservation rules are stringently adhered to, and that in the event of major conservation actions being brought about, state assistance will be forthcoming.

It is essential that this most important issue be discussed urgently and in great depth. Indications are that most new small farmers' ventures are unsuccessful. If this matter is not handled with due regard to its implications, the result will undoubtedly be costly to the individual and a possible burden to the state.

We as an agricultural union are keen to involve ourselves in assisting with these projects, and though coordinating committees already exist, we are anxious to see that the guidelines which are to be followed, are clearly defined, so that potential farm owners receive the correct guidance on a regular and ongoing basis, and that applicants are also aware of the financial implications of farming activities.

There is at present a spate of applications for agricultural credit for loans by people who do not have the necessary knowhow and/or experience required in order to make a success of a new farming venture. There appears to be a misconception in the minds of the applicants regarding necessary skills for the successful management of farming operations.

We would appreciate the opportunity of an interview to discuss the abovementioned issues, since we believe that we can make a positive contribution towards the solution of these issues.

FRED CRONJE

Chairman: Agricultural Natural Resources Conservation Committee of the Transvaal Agricultural Union

KOMMENTAAR OOR DIE VESTIGING VAN SWART BOERE IN S.A. LANDBOU

(Met verwysing na die herverdeling van landbou grond in die gevestigde landbou gebiede)

Die blanke Suid Afrikaanse boere het geen skuld gevoelens om die grond wat hulle besit. Hulle mag miskien in die begin in 'n bevoorregte posisie gewees het om finansies te bekom vir ontwikkeling en die aankoop van grond, maar ons moet onthou dat in die jaar 1902 was almal in die ou Transvaal en Vrystaat brandarm, en was hulle plase vernietig na die oorlog. Maar toe het die blankes opgestaan uit die as, en die huidige Republiek van Suid Afrika het uit daardie as verwys, deur harde aarbeid en beplanning. Hulle het toe aan die mense wat meegehelp het om die plase op te bou, werk, huise, skole en lewensmiddele verskaf.

Sewentien persent van alle landbou grond is aan swart mense (boere) toevertrou. Dit het hulle niks gekos en hierdie grond was in die meeste gevalle goeie grond in hoe reënval gebiede.

As ons sou terug kyk vandag wat van die grond geword het, dan wonder 'n mens as ons nie die nou gewrakte stelsel gehad het, hoe sou hierdie pragtige land van ons nou gelyk het.

Van wat die hede betref, sien ons daarna uit dat swart boere grond moet besit en bewerk maar ons moet nooit uit die oog verloor dat hierdie mense uit 'n totale ander kultuur en agtergrond kom. Daarby wil ek nie te kenne gee dat hulle nie suksesvol kan boer nie, maar die onlangse geskiedenis het geleer dat minder as 20% wat die geleentheid gekry het suksesvol was. Maar laat ons, ons nie daardeur laat afsit nie.

Die grootste probleem op die oomblik is dat die agterstand so groot is en die staat nie oor die finansies beskik om grootgetalle boere suksesvol te kan vestig omdat die huidige poging van die regering op 'n totaale verkeerde pad is. Om suksesvol te kan boer moet 'n mens nie net grond hê om dit suksesvol te kan bewerk want verder moet daar 'n deurlopende finansiële ondersteunings basis wees totdat 'n mens op eie voete kan staan. Verder moet ons onthou dat daar ongeveer 10 miljoen swart mense in die RSA is wat nooit hier moes gewees het nie, want hulle moes in Botswana, Swaziland, Lesotho, Mosambiek en Zimbabwe gewees het. Daar is vandag meer Tswanas, Basoetoes, Swazis en Mosambiekers in die RSA as wat daar in hul eie lande is.

Daar is reeds verskeie projekte waar die regering geld beskikbaar gestel het aan swart boere. Ek het van hierdie plase gaan besoek, en die plase is in 'n totale verwaarlosing en is onproduktief. Ons in die RSA kan nie bekostig om waardevolle landbou grond onproduktief te laat lê nie.

Mpumalanga Landbou Unie het hom bereid verklaar om te help met die suksesvolle vestiging van hierdie boere, maar die huidige toekenning van Landbou grond aan swartmense leen hom nie daarvoor uit dat daar suksesvol geboer kan word nie. Daar is egter projekte in die Onderberg gebied van Mpumalanga aan die gang, maar dit is op so 'n klein skaal dat dit niks beduidend is nie.

Daar is op die oomblik twee uitwee, nl:

1. Gee aan mense grond om op te woon, en moontlik so groot dat hulle iets vir hulle self kan produseer, maar dit moet naby plekke gelee wees waar daar werk is, sodat mense kan werk om geld te verdien om van te lewe.
2. Keur swart boere en plaas hulle saam in lewensvatbare skema onder toesig van 'n voorligtings beampte en 'n finansiële bestuurder totdat hulle hulle self bewys het om onafhanklik te kan boer.

Ek dink dit is onverantwoordelik om die Landbou grond as 'n politieke speelbal om stemme te werf te gebruik. Daar is baie stamgronde en regeringsgrond wat vir eers gebruik moet word, en swartmense moet eiendomsreg op hulle gronde verkry, want solank die grond aan iemand anders behoort sal jy nooit daarvoor omgee om die reg te gebruik en te bewaar.

FRED CRONJÉ

Voorsitter: Landbou Hulpbron Bewaringskomitee - Transvaalse Landbou-Unie

Desember 1997

PARTNERSHIPS BETWEEN COMMERCIAL FARMERS AND GOVERNMENT
UNDERTAKINGS

and

THE ESTABLISHING OF RESIDENTIAL COMMUNITIES ON HIGH POTENTIAL
AGRICULTURAL LAND

We as commercial farmers are highly concerned about the idea of the utilisation of high potential agricultural land for the establishing of residential communities, and yet would like to see that black farmers gain access to agricultural land for lucrative commercial farming.

This is a very important issue, as these farmers require sufficient land and financial support to enable them to farm successfully. We do not wish to predict the future, but can however participate in inventing the future.

The partnership concept between commercial farmers and government undertakings and the private individual will definitely not be easily motivated. The reason for this is that since farming began in our country by individuals, there have never actually been partnerships between farmers, as there has always been an individualistic approach among farmers, so the idea of introducing partners, be it an organisation or individual into this established way of farming is not going to be easily acceptable by existing individual farmers in general.

The thought of a basis where established commercial farmers can be utilised as consultants is a possibility, provided that the novice farmers are prepared to learn from the experienced commercial farmer, and that the project is financially viable.

To establish residential communities on lucrative agricultural land where commercial farming activities are being conducted is in my opinion incorrect.

The reason for this is that in doing so, the existing secure farming jobs will be made redundant, and the farming operations will not be able to continue. This will result in families who have over the years been totally dependant on a source of income through agriculture will lose their income and livelihood. They will then in turn be part of the unemployed sector of our country, which defeats the object of job creation.

From my point of view, the solution lies in establishing residential areas for those in need on non-agricultural property which is situated within close proximity to the larger commercial and industrial areas where the potential for employment and job creation is much higher.

The best agricultural projects will definitely be those projects where agriculturally skilled people are established on agricultural land of a sufficient size to accommodate commercial farming activities on a small scale. These people can develop under the auspices of someone in a managerial capacity who is also active in commercial farming. The infrastructure can be utilised collectively, and there should be a continuous financial support system available to initiate such projects.

I believe that after a period of about 5 years, these small commercial farmers would be able to operate adequately to ensure a secure future for themselves, their families and communities.

The only disadvantage with this project is that too few people will be able to be established, but on the other hand, rather fewer successful farmers than a whole unsuccessful community.

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I would like to conclude with a final thought with regard to the selection of the members and the duties of the Advisory Council:

The selected members ought to be representative of all the disciplines concerned. The input which the members will make will definitely depend on their attitude towards the issues, and time spent to enable them to offer the best and correct advice on matters.

There are at present several officials serving on the council and correctly so, as this forms a part of their duties. On the other hand, there are several representatives from the private sector also participating, and I consider it to be fairly unreasonable to expect that they attend meetings and work-sessions at their own expense. I would therefore like to suggest that this issue be resolved by means of some kind of compensation, albeit for travelling costs to and from the venue where these meetings are held.

I thank you for the opportunity of being able to contribute towards this important issue.

Regards,

FRED CRONJE