IMPACT OF THE IDENTIFICATION AND SURVEY OF THE ADMINISTRATIVE AREA BOUNDARIES PROCESS ON THE IMPLEMENTATION OF THE COMMUNAL LAND RIGHTS ACT: A CASE STUDY OF THE EASTERN CAPE PROVINCE

by

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PREFACE

The research work described in this mini-dissertation was carried out in collaboration with the Centre for Environment, Agriculture and Development, University of KwaZulu-Natal, Pietermaritzburg, from January 2005 to December 2005, under the supervision of Dr. Denis Rugege.

I, Christiaan George Boonzaier, hereby declare that this mini-dissertation is my own original work and that all sources have been accurately reported and acknowledged. This mini-dissertation has not previously in its entirety or in part been submitted at any university in order to obtain an academic qualification.

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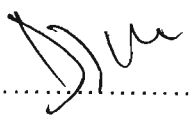
April 2006



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Dr. Denis Rugege (supervisor)

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ABSTRACT

Numerous land reform policy instruments and initiatives that have been implemented since the beginning of the 1990's are mediating the on-going battle between formal land tenure systems and informal customary land tenure arrangements. The policy instruments and initiatives seek to establish a delicate balance that will suit the diverse needs of the population of South Africa with respect to land. The enormity of this task is evident when one is faced with the reality that South Africa has the third highest Gini index (a measure of inequality in the distribution of land) in the world. The Eastern Cape Province is one of the poorest provinces in South Africa, and has been affected most by the land segregationist and homeland policies of previous colonial and apartheid regimes. It is not only the unequal distribution of land, but also the vast array of insecure tenure arrangements that have had a detrimental effect on the development and empowerment of communities resident on communal land.

This research analyses one initiative that intends to strengthen the security of tenure of existing occupants of communal land in the remote rural areas of the Eastern Cape Province. The research critically appraises the Administrative Area Boundary Project of the Department of Land Affairs (that aims to identify and complete the formal surveys of all administrative area boundaries in the Eastern Cape) in the light of the intentions of the Communal Land Rights Act (No. 11 of 2004) (CLaRA), and highlights the challenges in formalising the informal tenure arrangements of occupants of communal land. The different aspects of the Administrative Area Boundary Project (both office work and field work) were evaluated in order to determine not only its feasibility, but also its impact as an effective instrument of land reform in its endeavour to provide secure land rights to millions of South Africans residing in former homeland areas. To this end, both desktop and case study methodologies were used in order to collect and analyse the research data.

This research reveals the many deficiencies inherent in top-down approaches to tenure formalisation (such as the DLA's Administrative Area Boundary Project) as opposed to the advantages to be achieved in the many bottom-up alternatives that are available. The efficiencies gained in modernizing and integrating the CLaRA-related land administration processes are advocated throughout by comparing standard survey practices employed by South African land administration authorities and the land survey profession with best practices achievable in the implementation of land administration functions. Alternative land administration procedures and techniques are considered and proposed, and the legitimacy of the Administrative Area Boundary Project is questioned.

A key finding of this research is that the *de facto* land tenure arrangements differ significantly from that which is considered to be legal in terms of formal legislation (i.e. the *de jure* land tenure arrangements), which jeopardizes the success of the DLA's Administrative Area Boundary Project. Furthermore, this research reveals that not only is the implementation rate of the Communal Land Rights Act being hampered by the antiquated survey methods and practices that are being applied and enforced by the Surveyors-General, but that significant improvements in the rate of implementation can be attained by the sensible and skillful application and integration of modern survey methods and practices with mainstream land reform processes. More significantly, this research proves that both the fundamental, underlying socio-political premises and the perceived irreproachable technical processes purported to be the principal elements of the DLA's Administrative Area Boundary Project are fallacious, thereby seriously undermining the honourable intentions of the Communal Land Rights Act.

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INTRODUCTION

1.1 Background

The right to land in South Africa is often very obscure, especially when one considers the traditional customary land rights that prevail in the former homeland areas of South Africa. It has been suggested that one of the reasons for its obscurity is that these customary rights to land are vested more in the tribe, the group, or the family, and not as much in the individual. In an effort to remove the obscurity surrounding land rights held in former homeland areas, the South African government has introduced a number of land tenure reform initiatives since the beginning of the 1990's. One such initiative is the enactment of the Communal Land Rights Act No. 11 of 2004 (CLaRA), which seeks to convert insecure rights to land to legally secure land titles held by either tribes, communities, households or individuals. However, it remains to be seen whether the CLaRA will deliver on its promise of securing the land rights of communities residing in former homeland areas who live under informal customary tenure arrangements.

The CLaRA serves as enabling legislation for the effective implementation of critical aspects of the land reform process in South Africa. Slow implementation of the provisions stipulated in this Act will result in the perpetuation of legally insecure tenure, which will have a severe detrimental effect on the land reform process in South Africa.

CLaRA provides for a number of processes to be performed by statutory bodies in providing legal security of tenure. These processes include, amongst others, the execution of a land rights enquiry, the adjudication of land, the demarcation of land, and the registration of the land. In order to expedite and assist in these processes, the Office of the Surveyor-General in Cape Town, together with private land surveyors, have embarked on a six (6) year project to identify and survey administrative area boundaries in the Eastern Cape Province. The aim is to establish a cadastral framework that will assist in the implementation of CLaRA. However, the estimated project period of six (6) years is for all intended purposes conceived as being too long in order to contribute successfully to the implementation of CLaRA.

Surveyed administrative area boundaries are regarded as essential tools that will provide a framework for any subsequent lower order surveys. The Land Survey Act (No. 8 of 1997) prescribes that all surveys of communal properties be done at the quality and accuracy levels that are prescribed by existing survey regulations. This requires accurate identification and survey of administrative area boundaries to provide a comprehensive framework for lower order surveys. Consequently and purportedly, lower order surveys cannot be executed unless this overall framework of administrative area boundaries has been established.

Presently the boundary description data of administrative areas is in an analogue text format as promulgated in Government Gazettes, which is interpreted, transferred and annotated by staff of the Surveyor-General in Cape Town manually onto topographical maps. The topographical maps serve as base-maps for estimating approximate survey costs, and form part of the tender documents that are issued to potential tenderers who wish to perform the surveys of the administrative area boundaries. These boundaries are contentious though, since many communities regard them as inaccurate relics of colonialism that were forced upon communities without proper consultation and due consideration of the historical events that preceded human settlement in rural areas.

The different programmes of land reform, of which tenure reform is an essential component, serve to extend the rights of ownership to land to all the people of South Africa. In order to meet the expectations of citizens in terms of the CLaRA, it is vital that provisions stipulated in the CLaRA are not hampered by slow processes or bureaucratic procedures within the Offices of the Surveyors-General, neither by unrealistic and infeasible survey practices. The current 6-year estimate (from January 2004 to January 2010) for the identification and subsequent survey of administrative area boundaries being undertaken by the Surveyor-General in Cape Town in conjunction with private land surveyors, are regarded as serious impediments to the achievement of the objectives of the CLaRA. The Land Survey Act in many respects poses unrealistic demands by insisting on the application of existing survey practices and standards (akin to a formal cadastre) in upgrading and securing informal customary communal tenure arrangements.

1.2 Communal Land Rights Act (Act No. 11 of 2004)

The CLaRA is an important policy instrument in the establishment and execution of land reform in the rural areas of South Africa. One of the fundamental principles of the CLaRA is to mediate the clash between, on the one side, statutory provisions contained in modern law, and, on the other side, local norms embedded in customary law. Modern rights of exclusive land ownership often impose on and threaten traditional rights contained in customary law. The Act therefore tries to balance the opposing constructs of exclusive land ownership with that of inclusive use-rights to land. According to Cousins (2004:24) though, the scale is tilted towards modern law since the CLaRA advocates a centralised, state-based land titling approach to land administration as opposed to a localised, community-based use-rights system where records are administered and held locally. By providing private title deeds to the occupants of state-owned communal land, the Act seriously undermines traditional customary rights to land that can harm not only the noble intentions of the Act, but also its overall effectiveness of implementation.

Apart from aforementioned, the CLaRA also seeks to reverse the historical legacy of colonialism and apartheid. A centralised land titling system was used by the colonial and apartheid regimes quite effectively as a tool to prevent Africans from acquiring exclusive ownership and/or use of land in areas other than the reserves or so-called "black spot" areas. The often brutal expansion of the colonial powers of European nations is highlighted by Cohen and Kennedy (2000:53) in Martin (2000:33) when they state that "European expansion and colonialism had ... drawn far-flung parts of the world into a ... global economy. However, it had done so often with great cruelty and without the consent of the colonised peoples". The replacement of feudal production methods with those of industrial capitalism swept across the world under the banner of colonialism, and according to Cohen and Kennedy (2000:47) in Martin (2000:33) required "[t]he creation of a fully commoditised economy in which everything, including land and labour, had a price and so could be bought and sold in a market [and] (*sic*) the exercise of, often violent, measures to dislodge self-sufficient peasants and craft producers from their farms and workshops – so forcing them in ever greater numbers to live by selling their labour to capitalist entrepreneurs as wage workers". For industrial capitalism to succeed, self-sustaining producers had to be deprived of their means of production (such as land, animals, machinery, etc.) in order to force them into becoming wage-earners. The domination of bourgeoisie capitalists over the proletarians

could only be attained if: capitalists were the sole proprietors of the means of production; workers became consumers who depend on their daily wages for essential livelihoods; and competition from non-capitalist forms of production (such as peasantry or hand-crafting) were eliminated (Martin 2000:33,34).

Lavigne Delville (2004:2) convincingly argues that modern state law originates directly from colonial law and is therefore "... clearly obsolete for contemporary African societies". The blanket application of present day modern law will therefore not resolve African land tenure problems due to ever-present, endemic colonial influences. Considering the historical legacy of land rights, it therefore comes as no surprise that the CLaRA institutes some new approaches to address the land tenure rights issues in South Africa and to reverse the legacy of colonialism and apartheid.

In the former African homeland areas of the Eastern Cape Province of South Africa the communal tenure systems are essentially tribal based systems. Under a communal system, members of a village share certain rights in land attached to their village (Cokwana 1988:305). Ultimately though, ownership of communal land in the former homelands vests in the State and more specifically since 1994, the National Minister of Land Affairs is the nominal owner of all such land.

1.2.1 Historical context of the Communal Land Rights Act

The inequitable distribution of land in South Africa is a result of its historic legacy of colonialism and apartheid. Both systems introduced legislation that deprived the Black African majority from huge tracts of land that they had occupied for years. According to Samir Amin's foreword to Marais (2001:viii), the British settlers were the first to introduce a system of homelands in South Africa in order to create a source of cheap black migrant labour that could serve mainly the budding mining industry. It was only since the late 1940's that the predominantly Afrikaner-nationalist government legalised and institutionalised Apartheid as a system of racial-prejudice. Cohen and Kennedy (2000:374) in Martin (2000:6) define Apartheid as being "... the Afrikaans word for the system of systematic, legalised discrimination that existed in South Africa between 1948-94. Under the Population Registration Act of 1950 the population was classified in different racial categories with education, residence and marriage only permitted within each category. Although the system

technically supported difference rather than hierarchy, in practice the good jobs, the best housing, the vote and other favourable opportunities and resources were reserved for the whites. With the election of Nelson Mandela as President [of the Republic of South Africa] in 1994 the system was legally dismantled, although some Apartheid-like practices still continue informally". According to Marais (2000) in Martin (2000:15) however, Apartheid did not differ much from the economics and politics of its colonial predecessors.

During the colonial era, the then British government in South Africa promulgated the Native Pass Law in 1809, which compelled all Black Africans within the Cape Colony to carry a pass that provided restricted access to the Cape Colony. With the annexation of land by the British in the late 19th century, most of the Black occupied land in the Eastern Cape was incorporated within the Cape Colony under British rule. Lord Alfred Milner (British Governor of the Cape Colony during the period 1897 to 1901) established the South African Native Affairs Commission (SANAC) in 1903. SANAC's recommendations of racial segregation served as the cornerstone of South Africa's separate development policies based on race that followed in the years thereafter. Cecil John Rhodes unwittingly initiated racial segregation in South African sport in 1894 by disallowing a coloured cricketer from joining a Cape team on a tour to England because of his race, and even later implemented racially separate compulsory schools in the Cape in 1905.

According to Bundy (1979:135), Rhodes was also instrumental in instituting the infamous Glen Grey Act in 1894, which aimed to proletarianise large numbers of Africans residing on both tribal and so-called 'white' land. Bundy (1979) believes that there was a strong movement in the Cape, within the period 1890 to 1913, to undermine the class of squatter-peasants and to create a strong workers-class located in reserves that would provide a nucleus of labour to both the mining and commercial farming industries. In the wake of rapidly expanding commercialisation of white agriculture, the Glen Grey Act (Proclamation 299 of 1894) sought to discourage labourers from becoming peasants and, amongst other restrictions, prevented individual Africans from accumulating land through the introduction of the principle of "one man one lot". As a consequence, thousands of not only indigent Blacks, but also Whites, were pushed out of the countryside into the towns due to restrictive legislation that either prohibited or limited individual tenure arrangements for the rural poor at the beginning of the twentieth century. Marais (2001:9) claims that the African peasantry dwindled from 2,5 million in 1936 to 832 000 people in 1946. This was mainly due to

increased mechanisation of agriculture, the crushing effects of the Depression, and widespread state expropriation of land in terms of the 1913 Land Act and the 1936 Natives Land and Trust Act (Marais 2001:9).

Palmer (1998) emphasises the peculiarities of the colonial heresy by stating that: "[m]uch of East and Southern Africa has inherited a curious dualistic land structure from its colonial past. A commercial and a communal sector sit uneasily together, representing a long history of aggressive social engineering and control. South Africa is the most extreme case; on the one hand massive state support and subsidies for the commercial (white) sector (which today would not be tolerated), and huge dislocation and dispossession in the communal (black) sector on the other". In South Africa in particular, less than 30% of households reside on surveyed land parcels that form part of the formal cadastre. The remainder of households live in the informal sector on unsurveyed state land that are found on the urban fringes of cities and in rural communities. Whilst individual freehold and leasehold tenure have been fully protected in law and in practice, traditional communal and customary systems of land rights have suffered from lack of legal protection and administrative support.

Cross (1991:77) warns of the peculiarity of the South African system of communal tenure, stating that "[c]ommunal tenure is based on colonial understandings of the communitarian principles of indigenous African landholding, codified in a way that allows indirect rule by the state." Communal tenure as it exists in South Africa is therefore a misrepresentation of traditional black rural tenure systems, which create severe tension between the system and society. Such tension is mainly the result of the promotion of state control through the putative ownership of tribal land by tribal authorities at the expense of the local community (Cross 1991:77).

Van den Brink (2003:17) agrees with Cross's notion of communal tenure by arguing that "... 'communal areas' or 'homelands' are supposedly governed by 'traditional' property rights regimes, but [are] (*sic*) in fact subject to a particular colonial interpretation of such regimes. These interpretations have also become quite static, and sometimes lead to the insecurity of property rights. If these regimes had been allowed to evolve based on what communities really wanted, they would probably have slowly evolved towards private property where intensification was possible and towards forms of common property where private property did not make sense, as in very dry areas only suitable for livestock production."

In Mamdani's exposition of the dual system of modern and customary law that applied to civil society ("citizens") and tribal society ("subjects") respectively during the colonial era (pre-1910 in South Africa), he explains the oddity of Western interpretations of customary law and also the colonial notion of customary land tenure. With respect to land tenure, Mamdani (1996:139) explains that in traditional African culture "... there was no necessary contradiction between notions of community rights and corporate and individual rights: the existence of one did not necessarily preclude that of others." Despite aforementioned, colonial powers enforced and implemented a distorted concept of customary tenure by introducing a singular community right in land (as both a proprietary and exclusive right) as an alternative to the implementation of any individual private ownership rights in land for Blacks in the homeland areas. Additionally, the appointed political leaders (traditional authorities) became the holders and executors of the community proprietorship in land, and such leaders restricted access to community land to only members of the tribe. This was done despite the multi-ethnic status of pre-colonial African societies who previously welcomed strangers in order to enhance the prestige and/or labor force within their communities (Mamdani 1996:139,140).

Mamdani (1996:109-137) describes the colonial version of customary law as an exercise in "decentralised despotism". In conservative regimes of colonial descent, African society was recognised as "an ensemble of tribes", each tribe with its own customary law as part of a decentralised despotism, whilst radical regimes decreed a single modern substantive law for all persons as part of a centralised despotism (Mamdani 1996:135). Whereas the centrally located modern state governed its "citizens" by means of civil law based on race, the locally organised traditional authority governed its "subjects" on the basis of customary law and ethnic identity. Written into the legal system of every colonial power was thus the distinction between the first class White "citizen" and the "free peasant" Black "subject".

Each tribal authority dispensed customary law to those living within the territory of the tribe, with the result that almost as many sets of customary laws exist as there are distinct tribes. Contrary to civil law, the aim of customary law is not to guarantee rights or to limit power, but to enforce custom and enable power. An example of the latter is the way in which customary law consolidated the non-customary powers of chiefs into the colonial administration. Chiefs could enforce modern traditions or sanctions with the necessary

backing from the central colonial administrations and without fear of reprisals from locals. In this way, enforcing custom became a euphemism for extending colonial administration and developing a colonial economy (Mamdani 1996:124).

Marais (2001:303) highlights the dilemma between modern and traditional notions of political organisation by stating that "At the root of the chiefs' power is an admixture of ethnicized tradition, inherited authority and clientelism that fits uneasily with the principles of individual rights and democratic processes that underpin the new political system." Marais quotes Barney Mthombothi as saying that "Chieftainship by its nature is an undemocratic institution. It confers rights and obligations on an individual merely on the basis of some accident of birth. No merit applies and no accountability is required. It is the antithesis of all tenets of democracy ... We now have a new system (of government) whose essence is equality before the law. We should therefore discard the old." The South African government's unwillingness and inability to democratise traditional authorities could lead to what Mamdani (1996:32) describes as "deracialisation without democratisation", which he explains as follows: "[t]he real import of transition to non-racial rule may turn out to be the fact that it will leave intact the structures of indirect rule. Sooner rather than later, it will liquidate racism in the state. With free movement between town and country, but with Native Authorities in charge of an ethically governed rural population, it will reproduce one legacy of apartheid – in a non-racial form." Citizens will therefore be caught in the middle of a somewhat confusing and conflicting array between two different modes of political management, one which applies in urban areas and another in rural areas.

In commenting on Mamdani's exposition, Ntsebeza (1999:55) states that "[w]hile the colonialists, led by Cecil John Rhodes, initially attempted to diminish the role of traditional authorities, segregationist and apartheid regimes made use of traditional authorities as extended arms of their administrations." Ntsebeza (1999:33) also mentions that traditional authorities were central in the plans of the apartheid architects to establish Bantustans in becoming the primary level of rural local government and playing a key role in the administration of land, apart from also having judicial and executive powers. The symbolism of a "clenched fist" used by Mamdani signifies the complete dominance of traditional authorities in the lives of rural people, their actions towards their subjects being described by Ntsebeza as "extremely repressive" and "vicious". Chiefs did not derive their legitimacy

from popular support, but were feared, hence the reason why chiefs wore the skin of the leopard, the black spots signifying their subjects (Mgadla in Ntsebeza 1999:17).

The blurring of the distinction between land ownership and governance functions determined and legitimised the autocratic role of the traditional authorities. Although private ownership of land was unknown in African societies, it was commonly accepted that all land belonged to the chief, despite the fact that the State was the nominal owner of all communal land. The chiefs therefore assumed both the ownership and the administration of communal land in a deliberate fusion of authority. It is precisely the latter blurring of the distinction between ownership and land administration functions that was at the heart of colonial and apartheid rule (Mamdani in Ntsebeza 1999:44).

What was regarded as a "stark tenurial dualism" between peasant reserves and settler farms at the time, was later entrenched by the so-called "architect of Apartheid" Dr. H.F.Verwoerd (appointed Prime Minister of South Africa in 1958) in his rejection of the Tomlinson Commission's recommendations of 1955 to grant freehold tenure to the African populations in the homelands when he alluded to the fact that the Commission's recommendations "... would undermine the whole tribal structure". Tenure in the farms was therefore to remain freehold or long-term leasehold, whilst that in the reserves was to remain customary (Mamdani 1996:144).

Prior to the tabling of the White Paper on Land Reform (1991) and the promulgation of the Abolition of Racially Based Land Measures Act (No. 108 of 1991) in 1991, the land tenure system in South Africa was entirely based on race and territorial segregation. Badenhorst, Pienaar and Mostert (2003:481) reveal that an estimated 17 000 statutory measures had been issued prior to 1991 in order to control and regulate racial segregation. Under Apartheid laws, persons deemed 'Black' in South Africa were prevented from retaining and/or acquiring rights in the land, which was set aside for persons regarded as 'White'. At the same time, land that was provided in the crowded homelands was granted on limited and precarious permits subject to administrative discretion.

The dual system of land rights introduced under colonial and apartheid governments continues to prevail. Laws involving arbitrary racial distinctions have been repealed, but land in the former homelands continues to be registered in the name of the State. This derives

from the system of trusteeship, which located the State as both the owner and the administrator of African communal land (Sibanda 1999:4). Consequently, the tenure system for such land remains second-class and is perceived as being inferior to formal Western tenure arrangements.

Cross in De Klerk (1991:70) identifies five different landholding systems prevalent in the Black rural areas of South Africa, being communal tenure, trust tenure, quitrent tenure, freehold tenure, and leasehold tenure. The predominant tenure system that applies to the former homeland areas of the Eastern Cape Province is the tribal-based communal tenure system. Sporadic individualisation of tenure did occur with the granting of quitrent title to Blacks in mainly the rural areas of the former Ciskei. Cross in De Klerk (1991:70) emphasises that so-called 'traditional' tenure probably exists nowhere in South Africa, since it was replaced by communal, trust or quitrent tenure systems that depended ultimately on the degree of control that the former colonial and apartheid states wished to impose upon the various regions from time to time.

Since this research focuses mainly on land issues within the Eastern Cape Province, only those tenure systems relevant to the particular study area will be considered. The tenure types that were available to Black South Africans resident in the former Transkei and Ciskei areas were residential permits, site permits, deeds of grant, certificates of occupation, permission-to-occupy (PTO) certificates and quitrent tenure.

The quitrent system was a form of conditional individual tenure, which provided permanent possession of land to the registered holder in return for yearly payment of a nominal rent (Cross in De Klerk 1991:81). Quitrent was introduced in the Cape as far back as 1732 with the settlement of "Vryburgers", and was later introduced to both the former Ciskei and Transkei in a slightly revised form known as "perpetual quitrent". Originally though, the government retained the right to reclaim the land after 15 years subject to paying for improvements. Quitrent amounted to nearly freehold and rents were not always collected. Quitrent tenure differs from freehold tenure in that the State maintains control of quitrent land to the detriment of individual, group or community autonomy over the land. Apart from a large number of restrictions, quitrent land was easily forfeited due to failure to occupy the land beneficially or failure to pay the quitrent. Quitrent land had to be surveyed before registration though, and its transfer had to be recorded with the Registrar of Deeds. Due to

the high cost of survey, the quitrent option was therefore not a viable and popular option to the poor. Also, witnesses in the Beaumont Commission of 1916 heralded the "flexibility" of communal tenure and the ease with which people could be "inserted" into the reserves (Ntsebeza 1999:27). Even the Herschel magistrate at the time highlighted the advantages of communal tenure over quitrent by stating "... where you have got a surveyed location and want to put natives in it, it is extremely difficult to do so. I mean that land held under communal tenure will support more natives tha[n] (*sic*) land held under individual tenure. My point is ... if your allotments are [all] surveyed you cannot get hold of land to allot other applicants" (Chanock in Ntsebeza 1999:27,28). It is for this reason that Kingwell in Ntsebeza (1999:28) comments that quitrent tenure "... lost significance as an individual tenure system, and soon came to resemble the communal system in many respects in practise".

The authorities' growing dissatisfaction with quitrent tenure together with the exorbitant costs of surveying and registering the land, led to the introduction of the PTO-system (which was heavily influenced by the provisions contained in the Glen Grey Act of 1894). The PTO-system eliminated the need for expensive formal surveys and registration of transfer with the Registrar of Deeds. With the introduction of Proclamation No. 26 of 1936, rural people would in terms of Section 4 and upon successful application be granted a "permit to occupy" (PTO) either a homestead allotment in a residential area for domestic purposes or an arable allotment in an arable area for agricultural purposes. PTO-certificates were issued by local magistrates under control of the Department of Justice on application from community leaders in charge of land administration within demarcated administrative areas. Since formal surveyed diagrams were no longer required, the registration of sites from inexpensive sketch plans were allowed. However, the tenure systems available to Black South Africans were short-term or highly conditional in nature. This forced many people to establish *de facto* systems of tenure and occupation that operated outside the law.

Most of the rural land within the Eastern Cape Province, which includes the former homeland areas, remains unsurveyed and thus incapable of being formally registered in a Deeds Registry to this day. The CLaRA is but one policy instrument to redress the legacy of colonialism and apartheid that caused the present imbalances in land ownership and severe insecurity in land rights that currently exist in South Africa.

1.2.2 Significance of the Communal Land Rights Act

South Africans are subjected to extremely high inequities in the distribution of land. In fact, South Africa ranks the third highest in the world in this regard. The countries suffering from the highest Gini indexes are Brazil (60.7), Nicaragua (60.3), South Africa (59.3), Colombia (57.1) and Chile (56.7) (World Bank 2003), which are all countries with a legacy of extremely unequal land distribution (DFID 2004:3). South Africa wishes to deal with these inequities in land distribution through appropriate national legislation (such as the Communal Land Rights Act) rather than by informal local arrangements.

Current land reform initiatives in South Africa seek to address the huge inequities that exist in both the access to and distribution of land amongst the population of South Africa. Van den Brink (2003:18) suggests that the main reason for these inequities is that "... the most fertile lands in Southern Africa are occupied by very large, sprawling farms which are, on average, under-used". Van den Brink adds that the highest population densities—black population densities—are found in the most infertile rural areas. This is what some call the "rural geography of apartheid" brought about by economic policies favoring the settlers and the forced removal of black people from fertile lands over a period of over a century (Van den Brink 2003:18). Between the years 1960 and 1982 alone, 3.5 million people were forcibly removed by the state (Marais 2001:22).

The extent of state land in South Africa is 25 509 004 hectares (approximately 21% of the total surface area of South Africa), of which 13 332 577 hectares (equating to almost half of all state land) is the responsibility of the Department of Land Affairs (DLA), the bulk of which is in the former homelands. Of the state land for which the DLA is responsible, about 700 000 hectares (only 0.57% of all land in South Africa) are potentially available for land reform and development purposes (Sibanda 2001:3). These figures relate to both urban and rural areas. However, almost half of the population of South Africa (an estimated 21 million people) live in the overcrowded former homeland areas, which cover only 13% of the total surface area of South Africa (Sibanda 2005:7).

The following two tables compiled by the Department of Land Affairs sketch the extent of envisaged tenure reform for occupants of communal land in selected provinces of South Africa:

Table 1: Population on communal land (Departments of Land Affairs & Agriculture: July 2005)

Province	Total population per province	Total population in communal land
Eastern Cape	6 436 764	3 888 774 (60%)
Free State	2 706 774	644 433 (24%)
Mpumalanga	3 122 991	1 701 636 (54%)
KwaZulu-Natal	9 426 015	8 418 836 (89%)
Limpopo	5 273 639	4 674 309 (89%)
North West	3 669 353	1 974 425 (54%)

Total population: South Africa	Total population: Communal Land
44 821 777	21 302 413

Table 2: Area coverage of communal land (Departments of Land Affairs & Agriculture: July 2005)

Province	Total hectares of land per province	Total hectares of communal land per province	% of province that is communal land
Eastern Cape	16 742 326.209	4 432 914	26.48
Free State	12 979 792.533	336 167	2.59
North West	11 618 279.221	3 469 573	29.86
Mpumalanga	7 937 030.448	1 020 010	12.85
Limpopo	12 286 544.045	2 994 828	24.37
KwaZulu-Natal	9 476 379.832	3 504 545	36.98
Total		**15 758 037**	

There are various contentions as to whom the land listed in the tables above should be transferred. Should the 'unit of ownership' be the tribe or nation, the traditional authority, a chief or headman, or individuals or groups or households, or other legal entities such as Communal Property Associations? According to Ntsebeza (1999:47), official DLA policy states that ownership should vest in the members of the community concerned. Tribal and local authority structures are not the owners of communal land. Furthermore, Claassens and Makopi in Ntsebeza (1999:47) state that the DLA has emphasised that transfer of ownership will take place only after (and if) the group or tribe can show that there is majority consensus about the unit of land under discussion as well as the entity in whom the unit of land will vest. DLA policy also specifies that those rural people who have been living on land that they have regarded as their own for generations must be treated as the owners of such land, even though existing legislation does not accord them legal ownership. Additionally, who

allocates land will be determined by the owners of land and not by tribal authorities or any other structures (Ntsebeza 1999:64).

Sibanda (1999:2) warns against too much emphasis on the titling aspect of the CLaRA and recites the outcome of a study conducted by the Land Tenure Center of the University of Wisconsin into the effects of land titling in the communal areas of African countries and more specifically in Kenya, which concluded that: "(a) in view of the generally depressed conditions of agriculture, in the absence of other possibilities for improvement, titling did not have a positive impact on farm production; (b) much of the demand for titling arose from a wish to prevent the state giving the title to someone else." Sibanda adds that a demand for titling only occurs whence the potential for development becomes imminent. According to Sibanda there are general acceptance of the flexibility of communal tenure systems. "Where population pressure and commercialization have increased [though], these systems can evolve from communal rights to systems of individual rights or to new configurations of communal and individual rights **when the rights holders themselves decide that this is** [now] **appropriate"** (own emphasis) (Sibanda 1999:2).

Sibanda (1999:4) mentions the present chaotic state of land administration in the former homelands by stating that "... the systems of administration and record keeping have broken down and threaten a general collapse in rural governance. This collapse includes loss of records, doubts as to which laws apply and the unauthorised issue of permits and other documents." He does however complement the role of some traditional systems and institutions operating at local level that do appear to have legitimacy and confer a degree of security in land administration in their particular areas. Such local initiatives mean that tenure reform in some areas can build on the existing institutional foundations, which would allow for "... the evolutionary adaptation-by-choice model of tenure reform to be implemented at a much lower cost than if an ambitious 'replacement' model were to be pursued" (Sibanda 1999:5).

The CLaRA is an important policy instrument in formalising informal customary communal rights in land. The Communal Land Rights Act No. 11 of 2004 has the following aims:

- To provide for legal security of tenure by transferring communal land including KwaZulu-Natal Ingonyama land to communities/persons or by awarding comparable redress;

- To provide for the conduct of a land rights enquiry to determine the transition from old order rights to new order rights;
- To provide for the democratic administration of communal land;
- To provide for the Land Rights Boards;
- To provide for the co-operative performance of municipal functions on communal land.

Prior to securing an old order right, or transferring communal land to a community or person, or determining comparable redress, the Minister of Land Affairs must institute a land rights enquiry. To this end, a land rights enquirer is appointed to conduct an investigation and to advise the Minister accordingly.

Furthermore, the Minister can also establish a Land Rights Board, which has the following duties:

- advises the Minister, and advises and assists a community generally and in particular with regard to matters concerning sustainable land ownership and use, the development of land and the provision of access to land on an equitable basis;
- liaises with all spheres of government, civil institutions and other institutions;
- monitors compliance with the Constitution (Act No. 108 of 1996) and the CLaRA (Act No. 11 of 2004).

The CLaRA also makes provision for the establishment of a land administration committee, which represents a community owning communal land. A decision by a land administration committee that has the effect of disposing of communal land or a right in communal land to any person, including a community member, does not have force and effect until ratified in writing.

Depending on the tenure form chosen by persons or communities, the land in question will be transferred to a tribe or community in title in terms of section 18(3)(a) of the CLaRA. In terms of the chosen tenure form, the individual members of the tribe or community will occupy and use allotments for residential and arable purposes on the basis of a Deed of Communal Land Right. A Deed of Communal Land Right is not a title deed in the sense of conferring freehold ownership in land, but is a legal document that confirms a person's or a family's or a household's occupation and use of the land allocated in terms of the

community's community rules. Such a document will have the necessary sanction and surety required by financial institutions to approve and secure financial transactions, and may be used in various business transactions subject to what is provided for in the community rules.

A Deed of Communal Land Right will be registered in the Deeds Registry System and the holders of such a deed will be able to convert it into full freehold ownership, subject to the consent of the relevant community.

In so far as section 18(3)(b) of the Act is concerned, land can also be held in terms of the individual freehold ownership tenure form. This introduces individual private ownership of land in situations where the beneficiaries of the Act opt for this tenure form. This is an option that is made available to persons within the community who reside on communal land.

Finally section 18(3)(c) of the Act provides a hybrid system of individual freehold and collective or communal ownership tenure form. This last tenure form is a mixture of the above tenure forms depending on the choice made regarding a tenure form. The different programmes of land reform therefore serve to extend the rights of ownership to land to all the people of South Africa.

An important element of the land rights enquiry will be the adjudication of land rights. According to Haldrup (1996:1) "[a]djudication is not land reform. [Adjudication] merely establishes what rights exist, by whom they are exercised and to what limitations if any they are subject". However, adjudication of land remains an effective tool to be used in land reform and serves as one of the primary tools advocated by the CLaRA as a function of the Land Rights Enquirer in order to upgrade communal tenure arrangements. Amongst others though, land reform initiatives also include such processes as the establishment of new institutions and structures with responsibility for land acquisition, land administration and conflict resolution, all of which the CLaRA tries to address.

Simpson (1976:194) defines adjudication as being "[t]he process by which all existing rights in any particular parcel of land are finally and authoritatively ascertained." The importance of a proper adjudication process, however, cannot be overemphasized as is evident from the South African case studies conducted by Fourie & Hillerman (1997) in which they conclude in agreement with Habitat that "... security of tenure stem(s) more from the processes of

adjudication than from the issuing of a title" (United Nations Centre for Human Settlements 1990:33).

Also of importance is that adjudication does not, by itself, alter existing rights or create new ones. It merely establishes with certainty and finality what rights exist, by whom they are exercised, and to what limitation, if any, they are subject. However, when adjudication is applied to areas which are held under customary law it will be necessary to replace customary rights by what is considered to be their equivalent under written law. The basic principle of adjudication is still however, recognition and confirmation of an existing right and not the granting of a new one (Simpson 1976:195).

1.2.3 Envisaged shortcomings of the Communal Land Rights Act

The focus given to formal titling in the CLaRA has evoked widespread criticism of the intentions of the Act. Critics base their arguments on the growing consensus that a new, pluralistic, African paradigm in land policy is emerging. The new paradigm differs substantially from Western notions of land policy and administration. The African paradigm admits that "[c]onventional freehold and leasehold titles may never meet the needs of rural African society as a whole. Land titling and attempts to do away with customary tenure have proved expensive and divisive, undermining the legitimate rights of many land and resource users" (Quan 2000:1). De Soto (2000:171) claims that "[t]o be legitimate, a right does not necessarily have to be defined by formal law; that a group of people strongly supports a particular convention is enough for it to be upheld as a right and defended against formal law. That is why property law and titles imposed without reference to existing social contracts continually fail. They lack legitimacy." McAuslan (1985, 1989) in Payne (2002:6) stresses the importance of "[considering] cultural and historical traditions in assessing tenure options and noted that countries continued to pursue approaches developed during colonial periods, rather than developing more appropriate local options."

Disregard for formal registration of title by occupants of land in South Africa is evident from research conducted by Taliwe (2001) into the granting of ownership rights in Joe Slovo Park to squatters occupying land at Marconi Beam in the Milnerton municipal area of Cape Town. Squatters occupying land informally at Marconi Beam were to be resettled formally at the Joe Slovo Park Township in accordance with a 1995 agreement reached between the Milnerton

Municipality and the Marconi Beam residents. The research concludes that only 89 residents out of a possible 1100 transfers (i.e. only 8 percent) had registered their ownership rights in the deeds registration office. This was despite the incentives (such as the property developers having the responsibility for the payment of deeds registration costs) that would be provided should the residents formally register their ownership. Additionally, the research revealed that there was a total disregard for the formal boundaries that had been established by the developer, with residents adopting their own boundaries by means of internal arrangements and negotiations with their neighbours. Despite the advantages of formal registration, the study revealed that almost no form of legal registration was implemented in Joe Slovo Park, neither were any physical documents used during property transactions whence, for example, conveying ownership rights from seller to purchaser (Taliwe 2001:34). Taliwe's research findings concur with that of Barnes, Chaplin and Moyer (1998:3) who, in explaining why titling projects in less developed countries (LDC's) failed to produce expected results, suggests that the owners do not believe it is worth their effort to register transfers or new titles. Barnes, Chaplin and Moyer (1998:3) conclude that the reason for this failure to register "... is a belief that the costs of doing so (in terms of time, money, and dealing with the bureaucracy) is not worth the benefits (such as increased value, greater liquidity of land, or ability to borrow money for improvements)".

In the context of World Bank acceptance of the advantages of indigenous tenure systems over individualised and centralised titling systems, Palmer (1998) argues that "[t]here may now also be a general consensus that in Africa titling is not worth the expense or the effort involved. This is principally because records are never maintained properly; they fail to reflect social reality; the process has generally disadvantaged secondary holders of land, especially women; it has not brought an end to land disputes; and it failed to activate a credit market." Palmer (1998) adds that "... the Belgian authority Jean-Philippe Platteau argues that titling is certainly not justifiable in situations where land is abundant or has no commercial value, where land transactions and disputes are few, and where other markets are absent or poorly developed. He believes that there is a need for a pragmatic and gradualist approach that promotes the adaptability of indigenous tenure systems, avoids a regimented model, and relies mostly on informal local procedures, which are cheap and equitable and attract local support." Palmer also adds that "World Bank writers now admit that previous Bank assessments exaggerated the benefits and neglected the costs of freehold tenure and the advantages of communal tenure".

Van den Brink (2003:2) also contests traditional notions that propagated the formalisation of property rights by stating that "... the earlier consensus among development practitioners was that optimality, including security, of property rights was best guaranteed under a formalized (i.e. documented) and private property regime. And that economic growth and environmental stewardship would be further promoted by making the bundle of rights as large as possible, territorially exclusive, of infinite duration and fully tradable." It was also common belief that security of **title** [own emphasis] determines the amount of capital that can be raised on a particular property, since greater security of title inevitably leads to a lower rate of interest demanded by the lender on the security of such property. Weaker security of title creates uncertainty and increased risk which affect both the bond-holder and the owner resulting in the rate of interest being raised against the greater risk, and the flow of capital as a consequence becoming sluggish (Grobler 1927 in Simpson and Sweeney 1973:20). However, these modernist notions are now being contested and reconsidered in the light of new evidence indicating its failure to produce sustainable results in African societies. Also, it is now widely accepted that it is not only the indefeasibility of title to land per se, but the form of tenure and its recognition by relevant authorities that determine a property's level of security.

The UK Department for International Development (DFID) (2004:11) has formally denounced the implementation of individual titling under customary tenure by stating that "[g]overnment preoccupation with land titling and registration has obscured opportunities for reform of customary tenure that would strengthen the land rights of local people and ensure their land cannot be taken away or otherwise used without their consent ...". Instead of privatising customary tenure arrangements by means of formal land titling, attempts should rather be made to provide adequate protection and administrative support to such customary tenure systems. Claassens (2000) and Adams *et. al.* (2000) in DFID (2004:13) argue that "[m]ost of the insecurity associated with customary tenure results from a combination of neglect and design by colonial and post-colonial governments reluctant to introduce reforms that would give legal recognition to the rights of users and occupiers. This deters incoming investment because it is unclear who can give consent to investors to use the land and who should reap the benefits."

Payne (2002:11) concludes that there is no positive relationship between land ownership and economic development. He recites many examples, one of which is a comparison between Switzerland (that has only 7% home ownership and a 1 percent unemployment rate) and Spain (with 80 percent home ownership and a 13 percent unemployment rate). The granting of ownership rights will therefore not automatically stimulate or trigger economic development. Consequently, Payne argues in favour of a progressive incremental upgrading of tenure security along a continuum of land rights rather than an immediate granting of exclusive ownership rights to land (Payne 2002:13).

A shift in emphasis in development thinking occurred in the 1990's with the acknowledgement by development experts that development does not only happen through the creation of financial and economic assets, but also by means of social assets, thus a move from the creation of assets to that of capacity-building. Related hereto is also the widespread acknowledgement that poverty is caused by systematic disempowerment through the application of community restrictions and often brought about by the absence or removal of alternative land tenure choices. The land tenure arrangements that were available to Blacks in South Africa during colonialism and apartheid severely restricted the land tenure choices available to them. This has had a devastating impact on the more than 80% of the population of South Africa that were affected by harsh land ownership restrictions for decades. In many respects the land titling option presents only one tenure option that is not suited to existing customary land use arrangements.

Claassens (2003:12) warns that "[t]he approach of transferring land to 'communities' will reinforce tribalism and ethnic divisions between people and reinforce apartheid boundaries and ways of thinking." Claassens (2003:36) also reports the following comment made by research participants with respect to the transferring of title: "... transferring title of land within current boundaries would legitimise and 'set in stone' the landlessness and poverty of rural communities".

Reporting on the transfer of title to communities, Claassens (2003:35) heeds the warning echoed by her research participants who cautioned that "... transferring title to 'communities' would open up problems of defining the unit of 'community' and also generate boundary disputes between communities." Some research participants described it as being "... a return to the old 'homeland' approach". Others urged for "... the necessity of resolving the

overlapping land rights ..." prior to embarking on programs as envisaged by the CLaRA (Claassens 2003:35).

The need for additional land was stressed by participants exclaiming that "... tenure reform could not work if it serves to confirm current boundaries, it must expand communal areas and relieve the pressure of overpopulation created by colonialism and apartheid." (Claassens 2003:32). Aforementioned affirms the dilemma created by the establishment of so-called "Scheduled Areas" and "Reserved Areas", within which 21 million South Africans were forced to occupy only 13% (equating to almost 17 million hectares) of the surface area of South Africa, a situation that soon resulted in a totally infeasible, inequitable and unbalanced relationship between the land and its inhabitants.

Cousins in Hutton (2003) warns of the dangers of imposing a system of exclusive ownership designed for modern societies organised on market principles, onto African societies that are used to shared, inclusive and relative rights in land. Cousins adds that the implementation of a Western system would take hundreds of years as title transfer will be slow and the process will be bogged down in border disputes and power struggles. The Western system of ownership is characterised by surveyed and demarcated boundaries, centrally held title deeds and the settlement of disputes through courts, all of which involves lengthy processes.

Powell (2005:17) estimates that the introduction of a cadastral system of boundary records in England and Wales will cost the UK taxpayer 42 billion pounds (i.e. 21 000 000 land parcels x £ 2 000). Ironically, there are as many people resident on communal land in South Africa as there are cadastral parcels in England and Wales. Assuming an average of 5 members per household, it would mean that 4 200 000 households living on communal land in South Africa will need surveyed land parcels. The Office of the Surveyor-General in Cape Town uses a standard survey cost of R1 000 per land parcel in estimating the survey costs of individual properties on a Communal General Plan (Van Zyl 2005: interview). It will therefore cost R4.2 billion to survey all the residential land parcels on communal land in South Africa. This excludes land used for other purposes such as trading sites and agricultural sites. It also excludes additional transaction costs such as valuation fees, conveyancer's fees, transfer duty, stamp duty, and possible survey examination and deeds registry fees. Conveyancer's fees alone for the transfer of land units amount to approximately R1 000 per unit for properties with value less than R15 000, and R1 700 for

properties with value between R15 000 and R30 000 (Cape Town Deeds Office, 19 January 2006: telephonic enquiry). Consequently, the estimated cost in terms of survey and conveyancer's fees for the transfer of communal land to 4.2 million households will amount to a bare minimum of R8.4 billion.

Since South African taxpayers foot the bill of land reform projects, Cousins (2004:20) is adamant that the South African government's cost estimate of R1 billion per annum for the transfer of communal land to private ownership is an indication of the unfeasibility of the CLaRA implementation process. This should be seen in the context of the current total budget of the Department of Land Affairs for 2005/06, which is R3.88 billion, of which only R11.081 million has been voted for the Communal Land Rights Programme over said period (ENE 2005:709,722). At the current budget allocation of R11.081 million per year (excluding escalation) it will take seven-hundred-and-fifty-eight (758) years to effect such transfers. Everybody wants title to land, but so does everybody want to own a Ferrari motorcar. The question that remains is whether government is prepared to pay the estimated R8.4 billion for the survey and transfer of all land units situated in former homeland areas, since individual households can certainly not afford to pay even the survey costs, let alone the conveyancers' costs.

Cousins (2004:19,20) cites some of the criticisms raised at the CLaRA by various critics as follows:

- The nature and contents of the "new order rights" are not clearly defined;
- The minister is not compelled to define land rights in a manner consistent with the Constitution's Bill of Rights leaving contentious decisions to the discretion of the minister;
- The measures for achieving gender equality in relation to land rights are weak and unconvincing, and easy for traditional councils to override;
- The terms of community participation in the land rights enquiry are unclear, thus affording people little choice over the nature of their tenure system or the content of their land rights. Few opportunities to either participate or to challenge crucial decisions made by either the land rights enquirer or the minister are provided;
- The minister is given wide discretionary powers in terms of making determinations on who gets land rights, on what these land rights will be, and on the boundaries of

the community that will have ownership of communal land. No clear criteria and factors are provided to guide the minister's decisions;

- Communities are required to adopt community rules to govern land use and administration. However, there is no requirement that the community must agree to the content of these rules and no procedure for adopting these rules are provided. Furthermore, the minister may unilaterally impose a standard set of rules should a community fail to adopt a set of rules;
- No clear guidelines exist to define either the basis or extent of comparable redress in the event that overlapping land rights need to be secured, yet again affording the minister with wide discretionary powers;
- Democratic and accountable institutions for land administration are not provided;
- Holders of land rights do not have the democratic freedom to select a land administration body of their choice;
- The transfer of undivided blocks of land from the state to private ownership by communities will not solve the accountability aspects for infrastructure and municipal services. Additionally, land initially excluded from transfer for development purposes will be subject to protracted delays caused by detailed and long-term land use planning.

According to Cousins (2004:21) rights to land and resources on communal land are held at various and different levels of social organisation. True to African tradition, rights to a particular parcel of land are shared between smaller and wider communities or groups. The boundaries constituting or delineating these rights therefore become overlapping and nested. This creates insurmountable problems whence introducing a Western style exclusive ownership model in a typical African setting.

Cousins (2001) also warns of the dangers of classifying a community as a tribal entity. He urges that legal recognition of existing informal rights to land, which often do not derive from shared rules or customary law, be given to the current occupiers of the land instead. According to Cousins (2001) "[a]partheid saw hundreds of thousands of people removed from farms and 'black spots' and dumped in areas under the jurisdiction of chiefs. Their rights to land flow from their established occupation, and from informal agreements with neighbours, not from a 'tribal identity'." Cousins adds that "[i]n the dying days of apartheid the National Party pursued a policy of transferring state land to 'tribes', and many such

transfers were implemented in the former Lebowa 'homeland'. The deals were brokered directly between chiefs, the Lebowa cabinet and the government, without popular consultation. This has resulted in widespread abuse and corruption by the chiefs. In theory the land belongs to the whole 'tribe'; in practice it is operated as a feudal fiefdom. The rule of law has been replaced by a 'rule of fear'." It is with growing concern that Cousins asks the following question: "Will tenure reform create a democratic and rights based system in communal areas, or will it re-create the 'neo-feudalism' of the apartheid era?" Only time will tell.

1.3 Land Survey Act (No. 8 of 1997)

An understanding of the purpose of the Land Survey Act (No. 8 of 1997) is not possible without an examination of the historical context within which the Act evolved. The history of land surveying in South Africa provides a framework within which the context and nature of the formal national cadastre is revealed. The following is an extract of significant chronological events in the history of land surveying in South Africa as recorded in Simpson and Sweeney (1973:17-20):

- In 1652 Commander Jan van Riebeeck landed at the Cape of Good Hope to establish a re-victualling station for the ships of the Dutch East India Company. From the outset, a predominantly graphic cadastre in the form of a diagram was used for identifying property rights over a period of almost 200 years. The surveyor's diagram had to indicate where the property was situated, as well as how much land the property contained. Boundaries were therefore defined as graphic representations on paper.
- In 1813 Governor Sir John Cradock promulgated a proclamation in order to stimulate the agricultural industry. In terms of this "Cradock Proclamation", no sale of land could be effected unless the land was properly surveyed and registered.
- In 1829 the first Surveyor-General, Colonel C.C. Michell was appointed to administer and supervise cadastral surveys. However, there was still no examination of surveys nor diagrams by the ruling authorities.
- In 1834 the Great Trek by Afrikaans-speaking (Boer) farmers to the North commenced. This was partly because four-fifths of them had no title deeds to the

land that they had occupied and their landholdings were therefore perceived as being extremely insecure under British rule.

- In 1857 the graphical cadastre at the Cape was terminated. It was now obligatory to use theodolites and give numerical data on diagrams.
- In 1883 Sir David Gill commenced the geodetic survey of South Africa in order to establish a uniform reference system of trigonometrical beacons on which cadastral surveys and mapping could be based.
- In 1904 several land surveyors' institutes were created so that codes of conduct and discipline could be enacted in order to regulate professional survey matters.
- Also in 1904, in a groundbreaking Supreme Court judgement in the case of Murray vs. Opperman, the court ruled that a survey diagram is unimpeachable. The lawful position of a property beacon is therefore according to the diagrammatic representation of it and not the physical placement of the original beacon itself.
- In 1920 Dr. W.C. van der Sterr was appointed as the first Director of Trigonometrical Survey in charge of survey control networks in South Africa having as one of its explicit aims the increase in the density of trigonometrical reference stations.
- In 1924 a Supreme Court Case between African & European Investment Co. and Warren & others reversed the 1904 decision with respect to the unimpeachability of the survey diagram. This 1924 decision ruled that the lawful position of a property beacon is in accordance with the real position as physically occupied by the original beacon on the ground. This ruling stands even today.
- In 1927 the Land Survey Act No. 9 of 1927 was enacted. In terms of this Act all surveys had to be connected to the national control trigonometrical system. Surveys and diagrams had to be examined for the first time by surveyor-generals' offices. Records had to be filed in these offices as evidence for future replacement of beacons. The mathematical system was now firmly entrenched in favour of a purely graphic cadastre.
- In 1971 the Sectional Titles Act No. 66 of 1971 enabled flats and offices in multi-storey buildings to be owned separately. This Sectional Titles Act was eventually superseded by Sectional Titles Act No. 95 of 1986.

The Land Survey Act No. 8 of 1997 replaced aforementioned Act No. 9 of 1927 and is currently, together with the regulations framed thereunder, the principal statutory instrument that regulates the survey of land in South Africa. The object of the Land Survey Act is the act of surveying and more specifically and limited to cadastral surveying (to the exclusion of for example topographical, hydrographic, mining, and engineering surveys). Cadastral surveying is defined by Louw (2004:9) as the determination, demarcation, surveying/measuring and mapping of property boundaries. The Land Survey Act therefore deals exclusively with property boundaries and then only those to be incorporated or forming part of the formal cadastre. The boundaries forming part of the formal cadastre are also regarded as the only legal boundaries since they have been approved in terms of the Land Survey Act (No. 8 of 1997) and some have been registered in terms of the Deeds Registry Act (No. 47 of 1937).

Professional land surveyors are registered in terms of the Professional and Technical Surveyors' Act (No. 40 of 1984) to conduct surveys in accordance with the Land Survey Act. The International Federation of Surveyors (FIG, 1991) defines a surveyor as "... a professional person with the academic qualifications and technical expertise to practise the science of measurement; to assemble and assess land and geographic related information; to use that information for the purpose of planning and implementing the efficient administration of the land, the sea and structures there on; and to instigate the advancement and development of such practices." The land surveyor therefore measures the relative positions (and ultimately the sizes or volumes) of both natural and man-made features, and presents this information either graphically or numerically. Only land surveyors registered in terms of the Professional and Technical Surveyors' Act may perform cadastral surveys in terms of the Land Survey Act.

1.3.1 General provisions of the Land Survey Act

The Land Survey Act (No. 8 of 1997) governs the establishment and re-establishment of cadastral boundaries within strict parameters. The Act also establishes a statutory body called the Survey Regulations Board which makes regulations pertaining to, amongst others:

- the manner in which surveys shall be performed, and the manner and form in which the records of those surveys shall be prepared and lodged with the Surveyor-General;

- the degree of accuracy to be obtained and the limit of error to be allowed in surveys and re-surveys of land and for surveys of reference and other permanent marks;
- the diagrams and general plans required in connection with the registration of any land in a deeds registry, the manner of preparing those diagrams and general plans, the information to be recorded thereon, and the number of the diagrams and general plans to be supplied.

The Survey Regulations Board thus has legislative authority to formulate and issue rules and regulations pertaining to the survey of property boundaries and usually does so by means of regulations framed in terms of the Land Survey Act.

Apart from rules and regulations pertaining to cadastral surveys, the Land Survey Act also provides for the establishment of government institutions and officials who serve as the public's watchdogs over the survey industry. In this respect the Act defines the roles, responsibilities, functions, authorities and jurisdictions of the Chief Director of Surveys and Mapping, the Chief Surveyor-General, the Surveyors-General, and other public officials involved with cadastral surveys. The Act also specifies the duties of land surveyors and rules that apply in the event of misconduct by land surveyors, as well as contains a clause (Section 16 of the Act) that reserves the surveying of cadastral boundaries only to land surveyors registered as professional land surveyors in terms of the Professional and Technical Surveyors' Act (No. 40 of 1984). Additionally, the Land Survey Act also prescribes the rules for dealing with boundary disputes and the consequent appointment of arbitrators if needed. According to Barry (2004:275) the position of a beacon becomes indefeasible once a dispute over a doubtful boundary is resolved which results in it becoming a lawfully established boundary.

The regulations framed under the Land Survey Act deal mainly with the formal technical requirements of the South African land registration system. Not only do the regulations specify the accuracy requirements of surveys, but also the manner and format in which documents have to be submitted to the offices of the Surveyors-General for formal examination and approval of such documents. The requirement that no transfer of land may be registered unless it is based on a diagram or general plan that has been approved by a Surveyor-General ensures that the formal cadastre is automatically updated and maintained.

South Africa is purported to have one of the best formal land registration and cadastral systems in the world (Van Breda Smith in Simpson and Sweeney 1973:21, and Barry 2005:34,35). Whereas much of its success can be attributed to its currency (as a result of meticulous updating and maintenance), a lot also has to do with the strict accuracy requirements prescribed in the survey regulations that apply to the cadastre. Beacons that have been placed to demarcate boundaries have been coordinated based on national geodetic control. However, mathematical evidence remains inferior though to the original placement of the beacon at the time of the initial establishment or demarcation of the boundary.

1.3.2 Significance of the Land Survey Act in terms of the Communal Land Rights Act

South Africa still suffers from its legacy of colonialism and apartheid that was characterised by different race groups having different types of rights to land with freehold ownership limited to Whites while some Blacks were granted permission to occupy land administered by the South African Development Trust or consolidated into homelands. These racially different rights were administered through multiple regional and local systems, which included tribal authorities, magistrates, Deeds Registries and Surveyors-General offices (Hornby 2002). The Land Survey Act, as a relic of both colonial and apartheid land registration systems, deals exclusively with the formal cadastre despite having incorporated former Black territories as an amendment to the Act as of 6th July 1995. Sporadic surveys and registrations in terms of the Land Survey Act and the Deeds Registries Act did however occur in the former homeland areas prior to this date, but these were exceptions rather than the rule and were confined to trading sites and Township Management Board areas.

The Land Survey Act establishes procedures in resolving boundary disputes between contiguous owners in what is considered to be the formal cadastre, but does not provide any means of dealing with disputes between different tribes that occupy contiguous land in former homeland areas. Such land is of course nominally owned by the State, and no boundary dispute can therefore be declared or resolved in terms of the Land Survey Act, since the State cannot implicate itself as the rightful and exclusive owner of all communal land, essentially due to the inferred absence of registered, contiguous owners residing under informal communal tenure arrangements (Land Survey Act No. 8 of 1997, Sections 19 & 29). It is for this reason that disputes emanating from the Administrative Area Boundary Project cannot be legally contested in terms of the Land Survey Act, which affords the government

with unrestricted powers to identify and demarcate the location of administrative area boundaries as it deems fit, without fear of contention from the affected communities.

The Communal Land Rights Act (CLaRA) requires that all land to be transferred in terms of the CLaRA have to be surveyed in terms of the Land Survey Act (No. 8 of 1997), which constitutes a rather peculiar mismatch between the informal and formal cadastral sectors. Despite meeting the rather strict survey and conveyance criteria of the formal cadastre, some land units in the former homeland areas registered in terms of ClaRA will still not enjoy the benefits of full freehold ownership. The Land Survey Act rigorously regulates, through the issuing of specific rules, the way in which the survey of land must be performed. However, as a direct corollary to the previous Land Survey Act (No. 9 of 1927) and as mentioned previously, this Act in its present state only applies to the formal cadastre, which serves a small minority (less than 30%) of the total population of South Africa. The Act therefore serves as a guardian of the formal cadastre, and is of little use in regulating informal tenure arrangements unless one wishes to formalize or upgrade such informal tenure arrangements. Together with the Deeds Registries Act (No. 47 of 1937), the Land Survey Act forms the gateway between the formal and informal tenure systems, since it prescribes the minimum standards or minimum survey requirements needed to upgrade existing tenure arrangements from informal to formal.

The Land Survey Act is closely linked to the Deeds Registries Act since the Survey Act's *raison d'etre* stems from the requirements for the registration of deeds. Section 14 of the Land Survey Act specifies that "[n]o general plan or diagram of any piece of land shall be accepted in any deeds registry in connection with any registration therein of that land, unless the general plan or diagram has been approved by the Surveyor-General ...". A deed of transfer therefore cannot be registered without an approved general plan or diagram, which implies that the relevant portion of land has to be surveyed before registration of transfer can be effected. Aforementioned also applies to communal general plans approved in terms of the CLaRA.

1.4 Communal Administrative Area Boundaries

As its name implies, administrative area boundaries serve to demarcate areas within which a single administrative authority exercises its legal administrative power and its influence of

control as chief executive officers of the designated regions. In order to appreciate the significance of these boundaries, one has to look at the context of its historical creation and ultimately, the immediate events that impelled its creation.

1.4.1 Historical background to Administrative Areas

Administrative area boundaries were instituted by the Cape Colonial Government during the annexation of the Eastern Cape by the British Colonial Government towards the end of the 19th century. Cross and Haines (1988:73) state that the Cape Colony's two major reserves were the former Ciskei, which was demarcated in the late 1870's, and the former Transkeian Territories, which were sporadically incorporated into the Cape Colony during the period 1875 to 1900.

The reserve areas in South Africa were demarcated along tribal lines. The boundaries were defined by description in proclamations that were published in the Cape Government Gazettes. The demarcation of most of the administrative areas of the Eastern Cape appeared in the Government Gazette published as proclamation number 1056 in the year 1905, and was a direct consequence of the notorious Glen Grey Act of 1894, which authorised the appointment of district officers to act as both magistrates and administration officers in the various annexed territories or districts of the Eastern Cape.

These district officers or district magistrates were directly responsible to the Cape Colonial Government for all judicial and administrative matters pertaining to and/or occurring within their own designated magisterial jurisdictions. Due to the excessive burden of having to collect taxes (such as hut taxes and trade taxes) from the indigenous population, the district magistrates identified and appointed tribal leaders from the local communities to assist with the day-to-day administrative functions. The tribal leaders and their assistants became new (or sometimes replaced existing) traditional authorities having administrative powers delegated to them by the colonial government and more specifically by the district magistrates. A hierarchy of authority were created with the appointment of paramount chiefs (*ikumnkani)* as administrative heads of a number of districts, chiefs (*iinkosi/amakhosi/kgosi)* as heads of a number of administrative areas within one district, and headmen (*indunas/iinkosanas)* as heads of single administrative areas (Ntsebeza 1999:7,8).

The authorities thus created, served as extensions or agents of the administration of the Cape Colonial Government, since the previously autonomous African areas were now fully integrated into and part of the Cape Colony. The Colonial Government of the time could therefore indirectly control and exercise its authority over the African societies resident in the Eastern Cape, forcing such societies to comply with Cape legislation, as well as numerous new legislation that specifically applied only to such regions. Clear cases of the latter are evident from all the additional and very particular land tenure legislation that regulated the administration of land and other land related matters within these regions. Characteristic of such legislation is the clear division that was established in the land tenure arrangements of the white inhabitants as opposed to tenure arrangements for the black inhabitants. Whereas tenure arrangements for Whites were based on individualised, exclusive tenure systems, those for Africans were based on communal, inclusive tenure forms. As a consequence, Cousins (2004:18) states that tenure arrangements for Africans were considered to be "second-class rights" which were inferior to the more superior individual, freehold ownership rights. These second-class rights were also regarded as being insecure "[...] against the state, against corrupt traditional leaders, against more powerful community members, and against outsiders" (Cousins 2004:18).

1.4.2 Significance of Administrative Area boundaries in terms of the Communal Land Rights Act

Administrative area boundaries define the extents or limits of real rights in property, and served as important indicators of tribal divisions in the allocation of land. However, due to forced removals, thousands of Blacks were relocated and resettled into "native" reserves (later called homeland areas) regardless of their tribal affiliations or identities. Referring to the preposterous clinical separation of tribes by colonial authorities, Mamdani (1996:120-121) describes the actual tendency "... for a more or less mixing of tribes and an internal differentiation that went alongside varied and even conflicting practices within the same tribe. Not only were the boundaries of ethnicity blurred and elastic, there was often little that was traditional about tribal boundaries drawn by colonial administrators, ...". Not only is the present-day relevance of historic administrative area boundaries in its quest to reflect different tribes being disputed, but the existence of different heterogeneous communities within an administrative area is acknowledged.

In answering the question as to whom the land or rights in land should be transferred, the Communal Land Rights Act specifies that "[c]ommunal land and new order rights are capable of being and must be registered in the name of a community or person, ..., entitled to such land or right in terms of this Act and the relevant community rules" (CLaRA 2004:Section 5(1)). The Act defines a community as being "... a group of persons whose rights to land are derived from shared rules determining access to land held in common by such group." Amidst the weakening of tribal identities there are huge speculation as to what constitutes a community in terms of the Act's definition and at what level of social organisation the community will be defined. Also, what will be the interrelationships between different communities at the various levels of social organisation, and how will overlapping rights to land amongst communities be resolved? Although there might have been a clear separation of tribes at the establishment of administrative area boundaries in the year 1905 (or thereabouts), this no longer appears to be the case. Furthermore, with reference to ownership rights in communal property, the DLA vouches in its White Paper on South African Land Policy (1997d:63) that "... the ownership of land will vest not with chiefs, tribal authorities, trustees or committees[,] (*sic*) but in the members of the group as co-owners of the property." This is in line with the South African government's commitment to democratic processes.

Administrative area boundaries are basically of two types, either fixed boundaries or general boundaries. Both of these types of boundaries carry equal weight and mainly serve as substitutes of each other, that is, fixed boundaries are usually only defined in the absence of natural or man-made features that manifest as general boundaries. Furthermore, fixed boundaries are used in terrain that has few natural or man-made features on land considered to be less developed. However, despite the occurrence of administrative area boundaries in undeveloped rural areas, most of these boundaries (whether by matter of choice or not) are represented by general boundaries such as rivers, footpaths and wagon trails.

With the demarcation of boundaries and in the absence of physical (artificial or natural) features marking the limits of a property, beacons (also called monuments or pegs) are placed at the corners of the property with the assumption that the boundaries of adjoining properties run in straight imaginary lines between such beacons. These type of boundaries are called fixed or specific boundaries (i.e. its precise position has been established) since they can either be defined by survey to specified standards, be defined on the ground prior to

development and identified in documents of sale, or identified after development and agreed verbally between neighbours during a boundary adjudication process (Dale and McLaughlin 1999 in Louw 2004:11,12). When a plot of land is originally demarcated it is marked by pegs or monuments (in the absence of other natural or artificial features) and once these pegs are placed in the ground, the position established on the ground at that point in time is the fixed position. This gives rise to the well-known expression 'pegs are paramount to plans' or 'marks before measurements'. These so-called *fixed boundaries* are fixed regardless of any survey; indeed "... there is theoretically no need for measurement although in practice it is desirable to have some survey evidence of the boundaries" (Dale 1976:25). Mathematical coordinates, distance measurements and angles of direction supply extra evidence to the courts over and above the actual beacon, and allow beacons to be accurately replaced when they are missing.

General boundaries are boundaries whose position is not authoritatively located in the cadastre, and are defined as boundaries without terminal bend points. A general boundary's position is defined by its physical and acknowledged position on the ground. The position may be self-evident as in a river boundary, or may be a matter for the owners to know. The term was invented by British law-makers and administrators to distinguish their system from the fixed boundaries used in the colonies. In South Africa "curvilinear boundaries" such as rivers and the seashore, but also sectional title boundaries such as party walls in semi-detached dwellings are in effect general boundaries. The boundaries of the administrative areas in the Eastern Cape are predominantly general boundaries depicted by natural features such as rivers. If the extent of a land unit coincides with either a natural or artificial feature (such as a wagon road), the boundary becomes the feature and there is no need to place additional beacons or to coordinate such beacons in order to define or demarcate the boundary. The boundary feature in the case of general boundaries is already defined and marked physically on the ground.

A hierarchy of evidence for the re-establishment of boundaries exist. Preference is given to boundaries in the following order of merit, that is: natural boundaries; placed monuments or beacons; occupation by owners; field notes, distances, angles and coordinates; plans and intentive plans; and areas. Mathematical evidence is therefore afforded lower status in the hierarchy of evidence than original beacons. According to Barry (2004:276) "the principle

that the positions of original monuments are the strongest form of evidence was established as far back as 1859 ..." in the colony of the Cape of Good Hope.

1.5 Problem Statement

The application of rules and regulations akin to a formal cadastral and registration system cannot always be applied at random in a hit-or-miss fashion to indigenous customary land tenure systems. Customary tenure systems have their own local rules, regulations and norms and should be treated as such. Two vastly different race-based tenure systems were the result of colonial or settler interventions in South Africa: one being a centralised, formalised tenure system, which was applied mainly to the White population of South Africa living outside the former homeland areas, and the other a localised, informal tenure system applied almost exclusively to the Black African population of South Africa living inside the former homeland areas.

The introduction of new land tenure legislation that provides various protective measures for informal land rights and recognition to customary land rights at the local level, as well as the lack of proper institutional mechanisms and capacity at local level, have prompted various national government departments responsible for centralised land information repositories to institute top-down tenure formalisation approaches. These approaches are considered to be quick-fix technical solutions to tenure formalisation problems, but do not always have the intended results, sometimes even exacerbating the original problem. Centralised national authorities are executing demarcation of land functions regardless of the demarcation of land by local community institutions. A duplication in the role of community and tribal practices around boundaries and boundaries reflected in the national cadastre therefore exist.

Van den Brink (2003:1) cautions against a technocratic approach in solving political realities by stating that "[i]f 'land ownership' is a social relation, it immediately follows that making policy recommendations about land ownership is not a technical matter. Land policy and land reform are about social relations, and therefore are invariably about 'politics'. To say that land reform is political is a tautology." Van den Brink thus clearly favours a community-driven social solution to a state-sponsored technical solution.

In the absence of suitable local institutional arrangements, the National Department of Land Affairs in conjunction with the National Department of Public Works have embarked on a multi-million Rand joint project of formally recording all state domestic facilities (SDF's) situated within the former homelands of the Eastern Cape Province. As a corollary to the core project of surveying SDF's, administrative area boundaries that were defined during the annexation of the Eastern Cape by Great Britain towards the end of the 19th century in its efforts to expand the then Cape Colony, are now being identified and surveyed for the first time as an initial step to the formalisation of informal land rights that are held under customary land tenure. However, the former can be regarded as a top-down approach to land tenure formalisation that in principle opposes the very essence and spirit of the CLaRA, which is regarded as a bottom-up tenure formalisation approach. Also, the efficiency and cost-effectiveness of this approach are confutable, since community involvement, as is propagated by the CLaRA, in both the initial planning and eventual implementation of the "Administrative Areas Boundary Project" was minimal, and can for all practical purposes be regarded as non-existent.

1.6 Hypotheses

The CLaRA legislation is aimed at formalizing the *de facto* customary land tenure into *de jure* land tenure rights that can be integrated into the national land registration system. The CLaRA implementation process is designed to assist communities living communally on state owned land to formalize their customary land administration rules through land right enquiries, on the bases of which land rights adjudication, demarcation and appropriately lower accuracy surveys can be implemented, within an administrative area boundary accurately defined and mapped by the relevant Surveyor-General. The end product of this process is a communal general plan, from which the Minister of Land Affairs may award each community member a deed of communal land right. It is estimated that it will take approximately 6 years (the DLA having started the process in January 2004) to identify and survey administrative area boundaries of all communal lands in South Africa using the current method used by the Surveyors-General's offices. The successful implementation of the CLaRA will depend on the communal boundaries provided by the Surveyors-General for further demarcation of communal land rights for individuals. Delays in supplying these communal administrative area boundaries will in turn result in delays in the preparation of communal general plans and deeds of communal land rights.

Design of an alternative is therefore necessary in the form of a method which is of less accuracy, within acceptable limits with respect to the land in question and therefore legally viable, but which would be faster, cheaper and practical. Field-testing of such a methodology would be necessary for comparison against the conventional high accuracy method of the Surveyors-General and the Land Survey Profession. Various identification and surveying of communal administrative boundary activities have been commissioned and are on-going. A participatory GPS-based boundary identification method will be designed and field-tested on communal administrative area boundaries that have been mapped using the conventional methods prescribed by the Surveyors-General. A comparison will be made to compare time taken for in-field participatory boundary adjudication and survey using a GPS-based method against office based boundary identification followed by a conventional land survey performed by land survey professionals.

The following research hypotheses will be tested:

- The slow land survey methods due to the conventionally stipulated high accuracy standards employed by the Surveyors-General to identify and survey communal administrative area boundaries have a significant negative impact on the rate of the CLaRA implementation;
- Lower accuracy but significantly faster as well as legally viable land survey methods can be designed and tested for identifying and surveying administrative area boundaries by the Surveyors-General, which will significantly enable the efficient implementation of the CLaRA.

1.7 Objectives

CLaRA is an important and groundbreaking piece of legislation in its fledgling stages of implementation in South Africa. The extension of knowledge of the mechanisms of delivery under CLaRA requires intensive on-going research. This research investigates some of the mechanisms of delivery and, as its primary objectives, seeks to:

- Explain the impracticality of existing or newly formulated procedures of identifying and surveying administrative area boundaries for the timely implementation of the CLaRA;

- Design and field-test a more efficient, practical and legally viable alternative method for identifying and surveying communal administrative area boundaries than the methods that are employed by the Surveyors-General.

As a secondary objective, this research also seeks to determine whether the legally surveyed administrative area boundaries that are being surveyed in terms of the DLA's Administrative Areas Boundary Project also carry some form of legitimacy with the inhabitants of these administrative areas. Boundaries may be legal in terms of legislation, but should its credibility be disputed by the current occupants of the land units, there will be widespread disregard of the formal registration process by such occupants.

1.8 Research Questions

Given that certain top-down formalisation measures are being applied by national government departments, the specific questions that emanate directly from the problem statement and that relate to such national measures are as follows:

- What customary/social land tenure regularization requirements exist in terms of land surveys and timeframe with respect to CLaRA implementation?
- What is the productivity rate of the on-going identification and surveying of communal administrative boundaries by the Offices of the Surveyors-General?
- What are the possible implications of delays in the identification and surveying of administrative area boundaries on CLaRA implementation?
- Can more efficient, practical and legally viable (for integration into national cadastre) alternative methods be designed and tested in the field?

The research design specified in chapter three (3) below has been structured in order to explain how the answers to these research questions will be found.

CHAPTER TWO
LITERATURE REVIEW

2.1 Formal Registration of Rights in Property

South Africa has a formal deeds registration system that guarantees an individual's, a group's or a community's rights to land against any illegal claims to such land by a third party. The rights to the land is recorded in a public register in such a way that the courts are empowered to uphold the registered owner's rights in a piece of land and in whatever fixed improvements have been made to the land (Simpson and Sweeney 1973:9). Apart from ownership rights to land, the formal system of registration also allows for the registration of rights in underground minerals, leases and servitudes. Consequently, one person may legally use the land and the improvements made to the land by another person even by means of such extreme activities such as mining and/or cultivation.

An owner of a unit of land is defined by Section 102 of the Deeds Registration Act 47 of 1937 as follows: "Owner in relation to immovable property means the person registered as the owner or holder thereof and includes ...". As soon as registration in the name of an owner has been effected by the affixation of the Registrar of Deeds's signature to the deed, that person has acquired title to the property referred to in the registered deed. The title deed in respect to a unit of land consists of both a written deed and a duly registered diagram. Initial transfer of ownership of a unit of land from the State to a private individual/s is by means of a Deed of Grant, whilst transfer of ownership between private individuals will be by means of a Deed of Transfer.

The existing cadastral surveys and deeds registration system in South Africa has however been accused of being a colonial tool used by white settlers to deprive the native inhabitants from their rightful ownership of land. Claassens (1991:45,46) recites many instances in the past where whites annexed native land either by physically conquering the land or using softer methods such as missionary contacts and mineral concessions. Similarly, Kain and Baigent (1992:340,341) refer to cadastral maps as being "... symbols of state control over land". They allude to the fact that the cadastral map was used in colonial settlements as "... a measure of an individual settler's stake in a new nation" and that "[t]o the governments of imperial nations like Britain, France, and Spain, [...] cadastral maps were the actual

instruments of imperialism", which enabled such imperial states to alienate their colonial domains.

Larsson (1991:15) distinguishes between two types of land records: the first being a fiscal land record and the second a legal land record. The fiscal record comprises a systematic classification and valuation of land by means of a cadastre. A cadastre is usually defined as a systematic description of the land units within an area by means of a large-scale map, which indicates the outlines of the property together with its parcel designation or unique identifier. The legal land record, however, does not provide a description of the land unit itself, but provides a description and a determination of rights to and encumbrances on the land in the form of a public register of deeds and rights (Larsson 1991:15-17). Larsson also presents a useful schematic that indicates the close link between the legal status of a land register and the manner in which transactions are confirmed and documented:

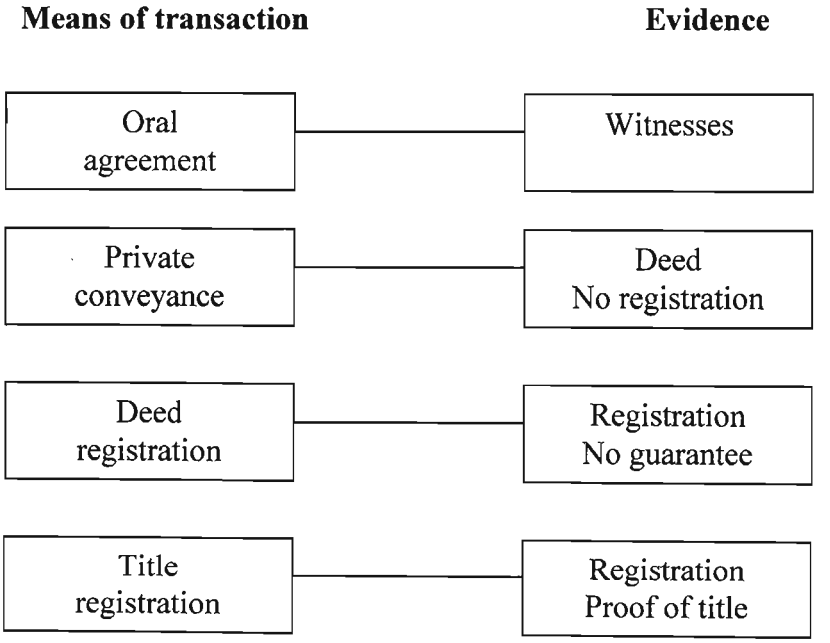


Figure 2.1: Types of transaction evidence (Larsson 1991:17)

A somewhat different view of a cadastre is expressed by McLaughlin (1975:60) in Barnes, Chaplin and Moyer (1998:19) when he/she defines a cadastre as being "... a record of interests in land, encompassing both the nature and extents of these interests", and thus in the words of Barnes, Chaplin and Moyer (1998:19) a cadastre is nothing else than "... an information system, based on [land] parcels, containing information about the ownership, use and value of these parcels." However, the difference in the interpretation of a cadastre

between Larsson (1991) and McLaughlin (1975) is purely of academic interest and is of no significance in practice, since it is widely accepted that a formal land registration system should include the nature of land rights, the owner/s of such rights, as well as the physical extents (or location) of such rights in land.

Ting and Williamson (1999:46) describe how Western cadastral systems have evolved with changes in the relationship between humankind and land. During the agricultural revolution and the feudal era land was considered to be the primary source of wealth and power, the primary function of the cadastre being as a record of ownership and as a fiscal tool. However, during the industrial revolution and with the birth of land markets, land became a mobile commodity that could be traded and converted to capital. Cadastres were consequently adapted to serve as land market tools in order to manage land transfers. After the 2nd World War land became a scarce resource and cadastres became urban and rural planning tools that assisted authorities to deliver vital services to citizens. Increased pressure from communities on the availability and use of scarce land resources in the 1980's raised concerns over environmental degradation, sustainable development and social equity. This prompted the development of multi-purpose cadastres to serve the multiple needs of societies (Ting and Williamson 1999:46-50). Cadastres are also evolving at a micro-level in order to serve the particular needs of specific communities. Cadastres are thus not static and change as mankind's relationships to land change.

In the middle of the 19th century, Sir Robert Torrens developed a system of land title registration in the Australian colonies and also in New Zealand known as the Torrens System. In this system, title to land depends not on private deeds of transfer, as in England, but on registration of land itself in an official register of titles and in land dealings that are open to public inspection (Kain and Baigent 1992:317). Cadastral maps and plans deposited by licensed surveyors form an integral part of the registration process. This method of registration known as title registration, contrasts with the older deeds registration system in that the title is registered and guaranteed by the state as being actual proof of ownership without having to provide historical evidence of all subsequent deeds transactions that was held against the property. Under a system based on the registration of deeds, however, the deed itself (that is only the transaction) is registered but provides no proof of the legal right of the transacting parties to enter into and consummate such an agreement (Larsson 1991:17,18). A deed is therefore considered to be an *agreement* between private parties on

transfer or change of ownership, whilst a title is a well-publicised *statement* by a competent authority regarding ownership of a particular land unit. Enemark, Williamson and Wallace (2005:54) provide further clarity on the difference between deeds (based on Roman law) and title systems (based on Germanic or common-Anglo law) by stating that "[d]eeds systems provide a register of owners focusing on *who owns what* while title systems register properties presenting *what is owned by whom.*"

The deeds registration system is regarded as being a *negative* registration system since deeds records do not provide an absolute guarantee of the correctness of the registered information. This is caused by the fact that in South Africa real rights can pass from one party to another (for example by prescription, accession, expropriation or marriage in community of property) without the deeds records being simultaneously amended. A deed registered under the deeds system can therefore be revoked as soon as legal evidence of induced fraud is proved after the fact. Because of the state guarantees attached to registration of titles, land rights registered under the title registration system is more secure than land rights registered under the deed registration system. Although South Africa has a formal registration of deeds system, in practice it has a very secure registration of title system though (Larsson 1991:24).

Pienaar (2001:112) states that a large part of the population is excluded from the deeds registration system. These people notably reside in either informal urban settlements or in rural areas where a system of communal property still prevails. The reason for their exclusion is that the land has either not been properly surveyed or that the individualisation of land-use rights in communal property is not at present possible.

The importance of a cadastre as a rational tool of government was expressed as far back as 1853 by a commission who investigated the advantages of a mapped cadastre and reported to the First International Statistical Congress held in Brussels that the mapped cadastre was "... the source of all information concerning properties. We consider, therefore, that a cadaster is one of the greatest benefits that a state can possibly procure" (Congrès Général de Statistique 1853:138 in Kain and Baigent 1992:342). The benefits of a cadastre were expressed by Robert Kearsley Dawson in 1836-37 as being "... the resolution of boundary disputes, the easier transfer of property, identification of the best lines for canals and railways, the possibility of obtaining information about the 'real capabilities of the country,' and the opportunity to decide where investment will be most beneficial" (Kain and Baigent

1992:341,342). Similarly, Jones (1965:114) states that the fundamental function of the cadastral survey system is "... to define beacons and boundaries unambiguously so that boundary disputes may be settled with finality, and to enable a lost beacon to be replaced in its former position to a degree of accuracy consistent with that demanded by circumstances."

Sir Robert Torrens, who was instrumental in the establishment of a system of title registration in Australia in 1858, listed the following as critical criteria of a sound land registration system, by stating that a system of title registration should be "reliable, simple, cheap, speedy, and suited to the needs of a country" (Jones 1965:70). Sir Charles Fortesque-Brickdale, who pioneered the introduction of effectual registration of title in the United Kingdom, replaced the word "reliable" in Torrens's explanation with the two words "security" and "accuracy". Furthermore, Messrs. Dowson and Sheppard added the factor "completeness of record" as another criterion of a sound registration system (Jones 1965:70).

In explaining the concept of security in tenure, Van den Brink (2003:3) states that "[p]roperty rights should be defined by the community (or the state), accepted and understood by all, and be able to be enforced. When a community, or the state, is able to enforce what it decides, property rights acquire a very desirable characteristic. They become certain—tenure, the holding of the right, becomes ***secure***."

Payne (2000) in Haldrup (2003:3,4) warns that "[c]onsidering tenure security as identical with titling could be an oversimplification." He argues that titling in urban areas (but even in rural areas) is not always necessary to provide secure tenure, and he describes the degree of informality of tenure, as a continuum of categories from complete illegality to formal tenure, a pattern which is found in many cities and may be listed from most informal to most formal as follows:

- Pavement dweller
- Squatter tenant
- Newly legalised freeholder of squatter house or plot
- Tenant in unauthorised subdivision
- Squatter `owner' - regularised
- Owner - unauthorised subdivision
- Legal owner - unauthorised construction
- Tenant with contract

- Lease-holder
- Free-holder.

Secure tenure gives people certainty about what they and others can do with their property. According to the Legal Entity Assessment Project (LEAP), security of tenure relates to:

- Defendable rights and enforceable duties to property, and benefits flowing from it;
- Procedures, rules and systems for managing these property rights and duties;
- Clarity about where authority resides in relation to these rights, duties and procedures;
- The absence of contradiction between laws and practices governing rights, duties and the tenure system (SAGI (n.d.)).

The relationships between an occupier or owner of land (as the subject), the rights held in the land, and the unit of land (as the object) are illustrated by means of a model developed by Henssen (1995) and Mattsson (2004) in Vaskovich (2004:5) as follows:

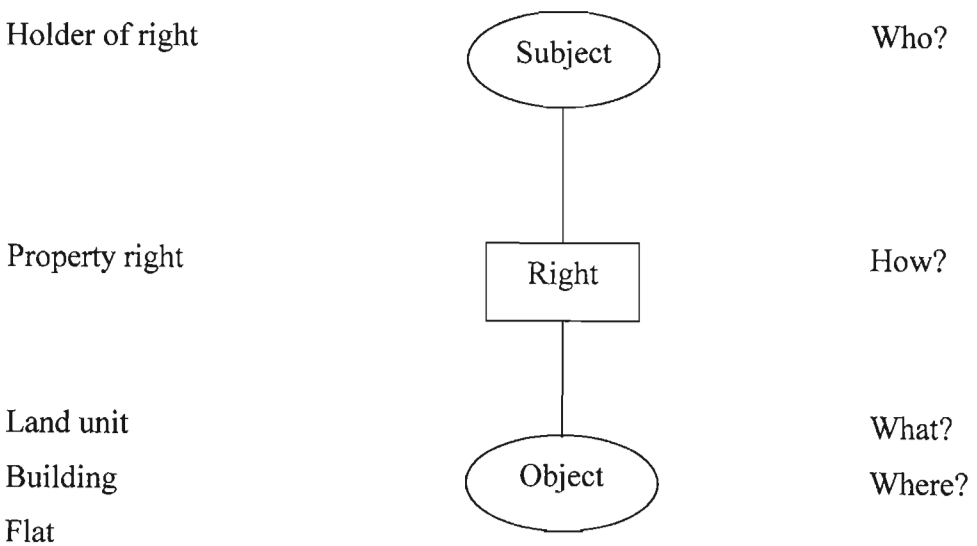


Figure 2.2: General relationships between subject of property right/s and a respective real property object (based on Henssen, 1995; Mattsson, 2004)

From aforementioned illustration it is evident that it is the right in the property that regulates the relationship between the holder of the right and the property unit. This relationship can

either be formal or informal depending on the manner of authorisation, and the legitimacy of the authorisation authority within the bounds of the law.

Ownership has traditionally been defined in South African private law as an "absolute", indivisible, "exclusive" and "abstract" right. In order to understand the true nature of the traditional ownership oriented model, each characteristic of the model will forthwith be explained individually (Freedman 2004).

The absoluteness of ownership guarantees that ownership is **in principle** unrestricted, tends to resist regulation, and has no natural ceiling. The owner can exercise his/her ownership right/s as he/she pleases, free from being burdened with any duties, obligations and social responsibilities emanating from its use. Freedom of use leaves the fate of the land in the sole discretion of the individual owner, allowing the owner to use his/her right to exploit others and even act against the community's interests. The owner may do with the object of his/her right whatever is not expressly forbidden by law. All restrictions (even substantial restrictions) are regarded as simply exceptions to the rule. Ownership thus exists and operates freely, even free from state control and intervention. State interference in the form of legislation is limited and for all practical considerations non-existent. Any limitation of the owner's rights requires justification and the owner's explicit consent, whereas the full power of landowners to dispose over their property requires no justification. Limited real rights in the form of leases and registration of mortgages are deemed to be temporary in nature, after which ownership reverts back to its unrestricted superior status giving rise to ownership being described as elastic (Pienaar 2001:109). However, Granger (1982:33) is of the opinion that "... the concept of absolute control in property is unusual in civilized society. ... In most civilized societies there are acknowledged norms which prevent the exercising of such control over property that may be to the detriment of other members of that society, or even to the detriment of the property over which the bundle of rights are held." Granger prefers the concept of stewardship as opposed to the absolute domination of property in which the holder of the bundle of rights has restricted rights, only insofar it can be tolerated by society. Private property can therefore not exist without due recognition and protection by a relevant authority or ruling group within the society (Granger 1982:33).

The indivisibility of ownership is reflected in its portrayal as only **one kind** of ownership that has uniform application with no intermediate degrees of ownership within the ownership

phenomenon. This concept of ownership is seen in the context of a hierarchical division of land rights with all other forms of tenure being less secure than ownership at the pinnacle (Freedman 2004). Ownership is thus considered to be the most important property right in a hierarchy of rights. There can be only one right of ownership in a particular thing; other land use rights over a particular property are derived from ownership with the consent of the owner, but exist external to the right of ownership and are viewed as only temporary limitations on the owner's entitlements. Limitations inherent in ownership is purely negative in nature emphasizing what owners may not do, thus not imposing any positive duty on the owner to treat the land as part of a natural system, the conservation of which is in the interest of the public. The indivisibility of ownership is also reflected by its 'elastic' nature, referring to its ability to revert back to its original full extent as soon as the limited rights fall away.

Ownership is also exercised exclusively, referring to ownership being held and exercised by the individual owner to the exclusion of all other non-owners who may also exercise certain use rights to the land that is being owned by the owner. The exclusive onerous perception of ownership contradicts the reality of land as a finite and an indispensable resource of value to society as a whole, and not solely of benefit to only the owner (Freedman 2004).

Ownership is also described as being an abstract right that confers to the owner more power than any other right. By this notion, the right of ownership can never be extinguished by the granting of limited real rights. Ownership is thus always more than the sum total of its entitlements (powers) in that it can never be exhausted or eroded by the granting of limited real rights in the thing to others (Freedman 2004).

True to the principles contained in Roman-Dutch Law, the following main powers or entitlements are, amongst many others, granted to the owner of property:

- to possess or recover the thing, i.e. may claim, reclaim or retain possession in the event of illegal deprivation;
- to use and enjoy the thing, i.e. may use it to its full potential as he/she pleases and may take the fruits produced from or on it unless it infringes the law or the rights of others;
- to destroy or consume the thing, i.e. may alter the substance or demolish;
- to alienate/transfer/sell the thing, i.e. may transfer right of ownership or part thereof, e.g. lease;

- to waive or abandon rights, i.e. may refrain from enforcing certain use rights to land;
- to enforce rights or exclude its use by others, i.e. may prevent others from trespassing on the land;
- to vindicate the thing, i.e. may claim back after a temporary waiver;
- to bequeath the thing, i.e. may pass rights of ownership to heirs, legatees and/or posterity;
- to raise money on the security of the thing, i.e. to obtain a loan using the land as collateral (Freedman 2004).

Each of aforementioned rights is but one right constituted in a "bundle of rights" to property, but is by no means the only rights to property.

The traditional private-law perception of ownership seems to be in conflict with constitutional law and the principles of protecting fundamental rights (Van der Walt 1998: 414-415). Whereas in private law the objects of property rights are confined to corporeals, the constitutional context gives more importance to incorporeals. Also, whilst private law focuses on ownership as a superior right of property that is fundamentally unlimited or unrestricted, constitutions extend the concept of property rights by focusing more on non-ownership rights that are on equal footing to other property rights, but admittedly more restricted than the full ownership right granted in private law. The traditional ownership model is therefore not aligned with the modern constitutional concept of land usage.

Although the traditional ownership concept intrinsically unites title and use, thereby providing absolute security of tenure, this form of ownership is perceived as being inflexible and restrictive by disallowing the registration of other use rights over the same piece of land. Pienaar (2001:109) states that the common law notion of ownership as being an absolute and individual right was used to resist regulation or limitations on ownership, effectively exempting the landowner from any social responsibilities towards society at large. Fortunately, changes in the Property Clause of the South African Constitution defines ownership within its social, political and economic context, thereby safeguarding the rights in property on a general basis and not within a hierarchical structure.

Haldrup (2003:6) criticises formal land administration systems and highlights the woeful plight of informal systems by stating that "[i]n many developing countries the state has defined norms for land registration and for urban development in a complex institutional

setting based on elitist norms, so that only the resourceful citizens can comply with them, with the result that only a minor part of the properties are within the formal system. When the majority of the potential beneficiaries of the public services, the largest part of the population, is outside the reach of the formal system, it can be argued that [it] (*sic*) is not the people, but the State system, which is marginalized. Consequently, the basic role and functions of the State in land administration need to be redefined, if it is to retain its credibility."

Williamson (1996:35) recommends that "... each cadastral system is designed *appropriately* to serve the needs of the respective country". Various options exist in designing and establishing cadastres which range along a continuum from very simple to very sophisticated. According to Williamson cadastral systems designed for poorer countries should be simple, flexible, freely accessible and low cost, having similarities with the operation of their informal markets. However, cadastral systems found in developed countries are usually complex, more rigid, expensive, relatively slow, and have high levels of technical sophistication. The success of a cadastral system is however not dependent on its legal or technical sophistication, but whether it protects land rights adequately and permits those rights to be traded efficiently, simply, quickly, securely and at low cost. Williamson (1996:35) adds that cadastres should be suitably flexible to record a continuum of land tenure arrangements from private and individual land rights through to communal and traditional customary land rights. A cadastre that records and provides for only the tenure arrangements of a minority of the citizens of a country to the exclusion of the majority (such as is the case in South Africa) is clearly inadequate in meeting the land administration requirements of any country.

2.2 Customary Tenures in the former Homeland Areas

Tenure systems are either formal or informal depending on whether it is governed by modern law, or by customs and traditions. African systems of land tenure differ from those found in Western countries in that "... everyone within the community of origin has rights to land, but that individual rights are balanced against their obligations to the social group. Rights are thus shared and relative. Systems tend to be inclusive, not exclusive, and rights and obligations are held at a number of levels of social organisation, from the neighbourhood to the village to the larger community" (SLSA team 2003b:12). Individual rights of ownership

in an African context are therefore more complex and are not as absolute as it is in the traditional Western concept of ownership. Cross (1991:77) is of the opinion that so-called " 'Communal' tenure is based on colonial understandings of the communitarian principles of indigenous African landholding, codified in a way that allows indirect rule by the state." According to Cross this was of course a deliberate misinterpretation in order to entrench the position of chiefs at the expense of productive competing social factions at the popular level.

Africans resided in the Eastern Cape Province of South Africa long before the first arrival of white settlers which is evident from Wagenaar (1988) and the Proceedings of Parlement, which state as follows: "The Abatembu as they term themselves, the Tembus or Tambookies as we term them, were found by shipwrecked seamen in 1688 occupying the country between the Bashee and Umtata rivers, and there they were still living at the commencement of the present century" (Proceedings of Parlement 1886:105). For all practical purposes, the present occupiers of the homeland areas in the Eastern Cape may be regarded as the indigenous people of the land, since they are the descendants of the likely first occupiers of this territory. In most instances the populace within the rural areas of the Eastern Cape still live under the same poor standards of living and in the same huts that their forefathers built more than 300 years ago.

Jones (1965:34) describes the social structure (with distinct colonial influences) that existed for many years and is still prevalent today within Black African societies by explaining that "[a]mong the Bantu tribes of Southern Africa two distinct political and social units with fixed territorial limits may be distinguished, namely, the chiefdom and the ward. The chiefdom, under the administrative control of the chief, who may be subject to a paramount chief, contains several wards, each of which is controlled by a headman or sub-chief. The chief delegates certain administrative functions to the ward headman, including the power to allocate land in the ward. Among many tribes a third political unit is distinguishable, namely, the kraal or village, under a village headman who has authority to allot land within the area assigned to the village" (Jones 1965:34).

Jones (1965:34) elaborates further by stating that "[t]he ward is usually demarcated by well-defined natural features such as rivers, streams and hills. Within the ward, exclusive allocations are made to family groups for the purposes of residence and cultivation, but over the remaining area of the ward communal rights operate. Within the family group, or within

the kraal in those tribes where the kraal is the smallest political unit, allocations of land are made to the individual family members or households by the family head or the kraal headman. In turn, allocations are made to the various individual members of the family, so that all members of the community enjoy individualised rights in addition to communal rights."

According to Cokwana (1988:305), the essence of communal tenure is that members of a village share certain rights in the land attached to their village. One portion of the commonage is used to graze their stock and gather firewood, whilst the balance is used as exclusive fields for cultivation purposes. In comparing Western notions of ownership with those of the Bantu people, one can thus deduce that the Bantu notion of ownership is more inclusive than that of the West, since whole communities share rights in the land.

Bundy (1979:21) describes the somewhat peculiar, non-Western, patrimonial relationship between land and its inhabitants in the rural areas of the Eastern Cape by explaining that "[t]he principal resource in Nguni society was land, but the relationship between man and land was not purely economic. The members of the society depended on land not only for subsistence, but also for recognition as members of the social group: the allocation of land to an individual was a badge of his membership of clan or tribe. Land was the communal 'property' of the political community, although property 'rights' vis-à-vis other communities were barely defined as long as land was a relatively plentiful resource." Bundy (1979:21) continues by stating that "[l]and occupied by a tribe 'belonged to' rather than being 'owned' by the tribe; it was treated as theirs by usage." Within the community, property rights were formally vested in the chief: he acted as the allocator of land to his followers. Conversely, it was on his generosity and equity in the distribution of land that his following depended. Once a piece of land had been allocated to a member of the community it was defined in terms of the claims of that particular family's rights of cultivation. Individual rights in property were not recognized: individual usage was; it was a system of communal ownership, central allocative powers and individual cultivation.

The difference between Western and Bantu notions of the human-to-land relationship is further described by Jones who states that "Western and Bantu concepts of security of tenure differ radically. Security of tenure is conceived by Western thought as individual rights, secured by a cadastral system, over a specific parcel of land. Traditional Bantu thought

conceives security of tenure, not as rights to a specific parcel of land, but as the fundamental right of a member of the community to participate in a reasonable share of the land available to the community, and its natural resources" (Jones 1965:33). Compared with Bantu tradition, ownership of customary land is thus not considered an individual right but a communal right to which individual usage rights are subjugated.

Hornby (2004:11) discusses the inherent problems of an informal property regime compared to that of a formal system of property rights by stating that "[t]he legal [property] system ...does what it needs to do for land markets, credit facilities, land use planning and urban zoning. The rich can afford it, and they are visible to the economy and the state...The extra-legal property system meets the needs of the poor for cheap access to land, relatively functional tenure security, oral based evidence and adjudication practices. Its major problem is [however] that it is invisible to those who determine and allocate government and private sector resources. It is a black box to the official systems."

2.3 Current productivity rate of communal Administrative Area boundary identification and survey

The ensuing table 3 displays the productivity rates for the identification and survey of administrative area boundaries in the communal areas of the Eastern Cape Province as at June 2005. The productivity rate refers to the average number of administrative area boundary surveys per month that have been approved in terms of the Land Survey Act by the Surveyor-General in Cape Town since commencement of the Administrative Area Boundary Project. The data in table 3 reflects the joint response of three (3) key informants to questions raised by the author (see Appendix 1 on page 104) during an interview conducted on 20th June 2005.

Table 3: Production status of Administrative Area Boundary Project as at 20th June 2005. (Source: Office of the Surveyor-General in Cape Town)

Area	No. of AA's surveyed before Jan 2004	No. of AA's unsurveyed before Jan 2004	No. of AA's surveyed since Jan 2004	Rate of Production per month	Projected completion date	Total Admin. Areas
Former Transkei	183	661	118			844
Former Ciskei	198	12	0			210
Totals	381	673	118	7	Dec 2011	1054

By the end of October 2005, one-hundred-and-forty (140) administrative area boundary surveys had been surveyed and approved as part of the project, which had started in January 2004. An additional 75 administrative area boundaries were being surveyed but had not as yet been approved by the Surveyor-General. A further 105 administrative areas were either in a research or tender phase as at October 2005. An intermediate target for the completion of 260 administrative area boundaries were set by the DLA for 1 April 2006. The revised projected completion date for the survey of all administrative area boundaries in the Eastern Cape is the end of year 2010. Appendix 2 (on page no. 107) provides a detailed breakdown of the progress made in each of the administrative areas as at 28th November 2005.

2.4 New approaches to identification and survey of cadastral boundaries

The need for new innovations in survey practises were emphasised as far back as 1604 when the then English government introduced legislation whereby all land held communally in England were to be "enclosed" and redistributed. Enclosure was a process whereby land (being commonage, open fields, or waste) that was exploited collectively, or over which their existed common rights, was divided into parcels owned in severalty. Each proprietor had to exchange his/her share of common rights over the wider area for exclusive rights in part of it (Kain and Baigent 1992:237). After the widespread sequestering of land in England during the seventeenth century civil wars, an elaborate administrative procedure was established in 1649 to determine the value of property to be transferred to Royalists who wished to regain possession of their estates. Although a surveyor-general together with a team of county surveyors was appointed to oversee this task, the nature of their task was more of a valuation than a surveying exercise. Because speed was an important consideration and in the absence of appropriate survey techniques, detailed survey measurements were forbidden. (Kain and Baigent 1992:236).

According to Ballantyne *et al.* (2000:18) "[l]and surveying is primarily concerned with establishing and re-establishing the spatial extent of rights in land." A cadastral survey, which is a survey of the boundaries of land units, is therefore normally performed to define the spatial extent of rights in land. Larsson (1991:9) states that historically the need for boundary delimitations arose as soon as anyone – a tribe, a family, or an individual – laid claim to a particular right in land. The limits of cultivation and building rights were usually carefully defined, whereas the limits of hunting, fishing and grazing rights were often

demarcated only vaguely. Larsson adds that property rights should not only be seen as a means of securing exclusive control over resources, but also as a method of protecting such resources. The boundaries of land parcels are simply the limits beyond which a right or a set of rights ceases to be effective. The Land Survey Act No. 8 of 1997 governs the establishment and re-establishment of rights in land by specifying that all cadastral boundaries that form part of the formal cadastre be defined accurately and unambiguously in relation to the national geodetic reference system.

Consequently, formal surveys are based on either international or national mathematical reference spheroids that define numerical cadastres. These numerical cadastres increasingly provide the means of accurately and unequivocally defining property boundaries. The requirement that all surveys have to be based on a national coordinate system implies that sophisticated survey techniques requiring the professional skills of a qualified land surveyor be applied. However, the use of modern technology has made it increasingly easier for even the layman to accurately survey land units to within the limits and specifications required by formal survey regulations.

Barnes and Eckl (1996:8) state that coordinate information on property corners serves three purposes, namely: the relocation of the physical beacon that demarcates the corner point in situations where the beacon still physically exists but needs to be relocated, the replacement of the beacon in situations where the beacon has been destroyed or removed, and the description of a land parcel usually graphically for transaction purposes. Barnes and Eckl (1996:8) mention that these may be regarded as the relocation, replacement and description functions of a coordinate.

There is widespread consensus that traditional cadastral survey methods and the central maintenance of comprehensive land records are very expensive and not appropriate for rural Africa. Modern techniques provided by Global Positioning Systems (GPS) and Geographical Information Systems (GIS) are better suited for the survey of land units in rural areas. It is for this reason that Quan (2000:15,16) suggests the following survey and documentation strategies for African rural settings:

- [Take care in managing the] ... risks of simplification in demarcating boundaries and registering property rights, depending on the methods used;

- An evolutionary process is often appropriate (as developed in Mozambique) – formalisation is a matter of degree – individual or collective boundaries can first be demarcated, then registered, and perhaps subsequently upgraded to title;
- In practice, responsibilities for surveying and registration of rights need to be delegated to decentralised bodies, such as village or district land registries, aided by local surveyors;
- However, computer based technologies do have the capacity to provide appropriate land information systems for Africa covering different types of land rights recorded at different levels. GPS is a cheaply available tool for spatial referencing and local demarcation of boundaries;
- In order for technologies such as GPS, maps, computers, and even pen and paper records to be understood, and applied effectively, their uses should be linked to literacy, education and training programmes for the users and at community level;
- Aerial photos and photomaps are extremely useful resources. [A]lthough (*sic*) detailed, plot[-]level boundary definition can be achieved with very large scale images, these are expensive and often not needed – much can be done with 1:10 000 or 1:50 000 scale maps which are more widely available;
- The surveying profession needs to be aware that high levels of precision and accuracy in mapping are often not required in rural Africa - nine tenths of the rights registration process is actually social and community development work. Surveyors need greater exposure to the cultural context of land tenure, and this should be properly addressed in professional training;
- The precise location and arrangements for maintenance and access to land records need to be linked to [a] (*sic*) level at which land rights are adjudicated (e.g. by councils of elders or village land tribunals, but records must also be accessible at higher levels for purposes of appeal) (Quan 2000:15,16).

Quan (2000:2) adds that "[t]he demarcation of community lands, recording of rights and resolution of disputes requires robust and transparent systems - procedures, documents and institutions, plus accessible, appropriate technologies - simple and cheap enough to be operated and understood at local level." Related to Quan's appeal for simple, cheap and accessible technology, Ballantyne *et al.* (2000:15) are of the opinion that "[a]ccuracy standards ... should reflect the users' needs rather than the capabilities of the technology." They add that "... accuracy standards should vary between the urban downtown, the suburbs,

rural areas, and remote [northerly] areas" in order to suit particular settings. It is thus pointless and wasteful to expect the same survey accuracies for land units in urban environments having high commercial value as for rural land units having relatively low commercial value. The latter is confirmed by Barnes and Eckl (1996:8,9), who (based on their experiences from Belize and Albania) suggest that an accuracy of less than one (1) metre is appropriate when considering low land value and low commercial agricultural use suitability of small to medium sized land parcels typical of rural areas. Additionally, they regard realistic accuracy as a trade-off between the cost for obtaining a particular level of accuracy and the value of the land to be surveyed.

There can be little doubt that the advent of modern Global Positioning System (GPS) equipment has had a profound influence in the way in which surveyors perform their work. The nature of not only their field tasks, but also their office tasks, has been simplified to a great extent. Not only has the use of the equipment been simplified, but at the same time, the processing of field data has become a non-issue. Technically complicated surveys that were previously difficult to execute, can now be performed with relative ease giving the surveyor more time to concentrate on the social aspects of the task at hand.

Barnes, Chaplin and Moyer (1998) have tested the cost-efficiency of a GPS methodology and compared it with that of traditional survey approaches. They proved quite convincingly that the use of GPS survey techniques (using the survey of cadastral land parcels in Albania as a case study) is twice as productive in the field and 7-8 times as productive in the office than traditional survey techniques (Barnes, Chaplin and Moyer 1998:52). Similarly, Rugege (2005:15) mentions (in a study to effect a comparative cost-benefit analysis of GPS-based participatory GIS as a method of identifying and recording boundaries in an adjudication process) that Lyons and Chandra (2001) established the cost of conventional survey methods to be 2.5 times higher than GPS surveys in Asian countries, while Louw (2004) found the conventional survey method to be 3 times more costly in Namibia. Earlier, Gerdan (1991) performed a rural cadastral survey using first GPS and thereafter a conventional total station technique for the same survey. In comparing the results of the two techniques he found positional differences of one to four centimetres, a cost saving, as well as a considerable time saving (seven hours for the GPS compared to thirteen hours for the total station technique) in favour of the GPS technique (Gerdan 1991:190-194). Modern GPS survey techniques therefore have significant cost and productivity gains over conventional survey methods.

Contrary to the top-down approach implemented by the DLA's Administrative Area Boundary Project and similar to Rugege (2005), Gustafson (2005:1-23) proposes bottom-up methods and procedures to adjudicate, demarcate and survey rural land parcels. These procedures involve on-site, active participation in the identification and demarcation of land by the present holders of rights in land in the presence of trained project team members and community representatives. Gustafson's proposals (2005:1) include on-the-spot adjudication of disputes and the issuing of titles in the field or soon thereafter. A single, customised, integrated software package is used in conjunction with GPS equipment, industry standard cameras, personal digital assistants (PDA's), field computers, field printers, 2-way radio sets, cordless drills, vehicles, and other disposable stores/equipment. Gustafson (2005:21,22) calculated that 32 to 36 teams can complete the combined adjudication, demarcation, survey and conveyance process of 16 000 villages or communities each consisting of an average of 50 land parcels within a period of 18 months at a cost of between US$6.25 to US$6.7 per property. This constitutes a huge saving when compared with the rate of R1 000 per property (and also considering the exchange rate) as quoted by Van Zyl (2005: interview) for only the demarcation and survey (excluding adjudication and conveyance) of individual parcels on a Communal General Plan (vide also paragraph 1.2.3). Combining and integrating land administration functions (such as the adjudication, demarcation and survey processes) in the field can also contribute to achieving huge economies of scale (Gustafson 2005:22).

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Research design

This research is an empirical case study in which the present land reform related survey practices of the Surveyors-General and more specifically the demarcation and survey of the 1054 administrative area boundaries (see table 3 on page no. 50) located in the Eastern Cape Province are the main focus (or units of analysis) of the research. A case study research design and methodology is used since it is "... a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence" (Robson, 1993). Essentially the design links and integrates the various research components (i.e. the research objectives, the conceptual framework and the research methodology) logically to the specified research questions.

A case study research strategy will be used in order to focus on the detail of a single real world phenomenon, which in this case is the process of demarcating administrative area boundaries in the Office of the Surveyor-General in Cape Town. Multiple methods of data collection will be used to provide sufficient evidence to either support or contradict the formulated hypotheses. The various modes of observation will include unstructured individual/group interviews with key informants (vide Appendix 1 on page 104), participation observation of processes, collection of evidence in the field using a Global Positioning System (GPS) for boundary mapping, as well as the analysis of existing documentary sources and archival records.

3.2 Research methodology

An analysis of secondary data sources based on literature, and key informant and stakeholder interviews was carried out to establish minimum land survey accuracy standards required for rural land with generally low re-sale and commercial agriculture productivity. The recommended accuracy forms a basis for the design of an alternative GPS-based participatory land survey that can be field-tested against the conventional method.

Projects for communal boundary identification and surveying commissioned by the Surveyor General at Cape Town were mapped to provide a sampling frame for productivity rate

comparisons of the two methods. A representative number of sample areas was randomly selected and surveyed, and thereafter a comparison was made based on the time spent and the survey accuracies attained using each methodology.

This research was predominantly empirical qualitative research that focused on the monitoring and direct observation of the implementation processes of land reform programmes performed by the Surveyors-General, and was conducted mainly through the exploration and evaluation of actual programme activities (evaluation aspect). It sought to understand and describe the processes by which contemporary events and actions take place. The research also involved familiarity with the Communal Land Rights Act (No. 11 of 2004), the Land Survey Act (No. 8 of 1997) and other relevant land reform legislation, as well as the overall system of land tenure and land delivery in South Africa (descriptive aspect).

Both primary and secondary sources of data (being textual and numeric) were collected as part of this research. Interviews with key informants involved in the identification of the administrative boundaries were a primary source of information. The key informants were largely in the employ of the Department of Land Affairs, and more specifically in the Office of the Surveyor-General in Cape Town. The reason for choosing only this site was that this office is the only institution in South Africa that has a specific operational programme for the identification of administrative boundaries in the Eastern Cape Province, a province that is renowned for large areas of unsurveyed land and a complex history of land mongering. Due to the vast amount of unsurveyed parcels of land within this province (compared to that of other provinces in South Africa), the implementation of CLaRA arguably poses its greatest threat and challenge within the Eastern Cape Province (Van den Berg 2004:3).

Secondary sources of information were documentary evidence on the current work methods employed by delegated staff who are actively involved in the identification of these boundaries, as well as the many source documents that are available in the archives of the Office of the Surveyor-General in Cape Town (analytical and exploratory aspects). The current projects or programmes were to be evaluated with respect to their content, structure and outcomes through a systematic collection of information. This research sought to draw a correlation between the rate of identifying and surveying administrative area boundaries in the Eastern Cape with the rate of delivery of land in terms of CLaRA.

CHAPTER FOUR

LAND AND TENURE REFORM IN SOUTH AFRICA

4.1 Significance of Land and Tenure Reform

Before looking at various land and tenure reform initiatives that have been and are being applied in South Africa, it will be worthwhile defining the concept "tenure" in order to fully understand the fundamental nature of tenure reform. Land tenure can be defined broadly as the system of access to and control over land and related resources. It defines the rules and rights which govern the appropriation, cultivation and use of natural resources on a given space or piece of land. Strictly speaking, it is not land itself that is owned, but rights and duties over it (Commission of the European Communities, 2004). Tenure is therefore a legal term that refers to the right to hold rights over land, rather than the simple fact of holding or possessing land. It refers to more than just rights of ownership, but also includes rights to land such as occupation, tillage and general usage. The latter concurs with Payne's (2002:5) definition of tenure as "the mode by which land is held or owned, or the set of relationships among people concerning land or its product".

However, the formal deeds registration system in South Africa still suffers from its colonial and apartheid legacies pertaining to rights in land, and needs to be radically reformed in order to accommodate the new social and political underpinnings of a true democracy. Other forms of tenure, apart from private freehold tenure, need to be legalised and formalised in order to recognise and secure the different forms of tenure held by all the inhabitants of South Africa. Van der Walt (1991:31,32) attests to the notion of multiple tenure arrangements by pronouncing that "... it is now widely accepted that ownership should be a fundamentally limited and restricted right, which allows the owner certain entitlements with regard to the object, but which contains certain inherent limitations within which the owner must exercise his entitlements, and which places him under certain inescapable duties, obligations and responsibilities towards others and towards society. Moreover, it is also recognised that a functionally divided concept of ownership might be more acceptable than the old-fashioned uniform concept. This means that more than one kind of ownership are recognised, and that the characteristics of ownership and of other property rights may vary according to the nature and function of the object involved."

Van den Brink (2003:1) explains the concept of property as being "... a social relation, defining what an individual (or a group) can and cannot do with a certain thing and which needs to be respected by others—think of it as a 'bundle' of 'my' rights and 'your' obligations." According to Granger (1982:36) "... it is more realistic to look upon ownership as a bundle of rights in a thing, rather than absolute control over that thing. In considering land ownership, the bundle can either be thick or thin, depending on the degree of power vested in the owner, or the security of tenure enjoyed by the holder of the rights." Denman (1972) in Granger (1982:36) emphasises the limitations of land rights by stating that "[a] bundle of rights is always an abstraction from absolute power."

The functionally divided concept of ownership is highlighted in Van der Walt (1999:268) when he compares the workings of the ownership-oriented model of property law with that of the fragmented use-rights model. In describing the ownership-oriented model, the construct of ownership is considered the strongest right in a hierarchy of rights, with all other use-rights being inferior to the right of ownership. With ownership the title and use are united. Tenure security depends on the title, and the title is absolute in the sense that it has no natural ceiling and tends to resist regulation. In contrast to the ownership-oriented model, the fragmented use-rights model of property law bases tenure security on legislation. The title and use is separated and there is no hierarchy of rights. With use-rights there is a guaranteed statutory security threshold as well as a natural ceiling of restrictions.

Van der Walt (1999:264) argues in favour of a fragmented use-rights model of property law because fragmented use-rights have no inherent power relations as is the case in ownership-oriented systems. Ownership systems uphold the hierarchy of rights and the underlying hierarchies of power that created existing inequalities in the land distribution pattern. A land reform programme that continues to privilege ownership above other property rights will uphold the existing hierarchical structures thereby entrenching existing unequal power relations that existed during the apartheid regime.

Pienaar (2001:110) disagrees with Van der Walt's exposition of separating title and use. Pienaar maintains that "[l]egislation alone is not sufficient to obtain security of tenure, but has to be confirmed by the additional registration of title. To separate title and use often leads to insecure tenure." Security of tenure should not be afforded by legislation only, but should be enhanced through the addition of the publicity principle that are offered by title

registration. Pienaar warns that "title" should not be equated to "ownership" alone, but that numerous other use-rights could be publicised by registration. Use-rights can be fragmented to the extent that different people exercise different use-rights in terms of different titles over the same property (Pienaar 2001:111).

Payne (2000) in Haldrup (2003:3) demonstrates that the provision of full, formal tenure status to informal settlements raises their commercial value and can therefore actually reduce tenure security for the most vulnerable social groups, such as squatter tenants. Quite ironically Payne argues that entry into a slum area and informal tenure arrangements may be the only access to urban residential areas, which the urban poor can afford. Therefore, caution has to be applied in introducing major tenure reforms in order not to harm the most vulnerable groups, as according to Payne (2000) in Haldrup (2003:3,4):

> *"A starting point may therefore be to regard every step along the continuum from complete illegality to formal tenure and full property rights as a move in the right direction, to be incrementally. This would minimise market distortion and the risk of undesirable social consequences."*

Claassens (1991:50-52) states that when one considers the history of land in South Africa, it is characterised by one of massive state intervention. Numerous laws were enacted not only to deny Blacks access to private ownership of land, but also to destroy the property rights of those Blacks who managed to acquire title deeds before the introduction of the notorious Natives (or Black) Land Act (No. 27 of 1913). The 1913 Black Land Act that commenced on 19 June 1913 (soon after South Africa gained its independence from British colonial rule in 1910) created so-called "scheduled areas" and effectively closed the land market to all Black South Africans. This Act officially segregated Black and White land holdings on a territorial basis. Farming by Blacks were only allowed in "native reserves", which comprised only 7,13% of all land in South Africa (Mamdani 1996:143). Considering that only about 12% of the 122 million hectares of land in South Africa is arable, Black farmers were restricted to a trickle of the total available agricultural land.

Thereafter followed amongst others the South African Development Trust and Land Act (No. 18 of 1936) that introduced so-called "released areas" (which together with the existing "scheduled areas" constituted about 13,7% of all land in South Africa), and the Group Areas Act (No. 41 of 1950) that separated the various races territorially. According to Claassens

(1991:50) "[t]he land was taken from the initial inhabitants of the country by force and trickery, not through 'fair' contractual relations." Claassens adds that "[t]he entire system of private property [was] built on racial dispossession and racial exclusion; the primacy of race over contractual considerations has been asserted by the state in a blatant and unashamed way for centuries." Under the apartheid regime alone 3,5 million people were forcibly removed from their land or properties (Blake 1998:89).

4.2 Land and tenure reform policy instruments

Numerous tenure reform legislation have been introduced in South Africa since the 1990's in order to recognise and legitimise the land rights of all South Africans. Policy instruments created under such legislation seek to redress the inequity in South African land distribution in which 12,6% of the population (almost exclusively Whites) owns 87% of the land in South Africa (Blake 1998:89).

Calls for a unified legal system consisting of a creative blend of customary and modern law should be a principle requirement of tenure reform policy that is long overdue. Additionally, the advent of democracy has introduced a new dispensation that places emphasis not only on the participation of the electorate in decision-making processes, but also the accountability of democratically-elected authorities to the electorate. The process of democratic decentralisation has created considerable tension between un-elected chiefs and elected local councillors. This is as a result of the considerable power that traditional leaders currently exercise in the rural areas, especially pertaining to the administration of communal land. The roles, powers and functions of traditional leaders have not been adequately clarified by government, hence the competition and strife with elected local councillors (SLSA team 2003a:10).

The Constitution of the Republic of South Africa (Act No. 108 of 1996) seeks to achieve a balance between the protection of existing property rights on the one hand, and constitutional guarantees of land reform on the other hand. Apart from constitutionally guaranteeing the security of existing property rights, the property clause of the Constitution (being Section 25) therefore also provides for clear constitutional authority for land reform.

The constitutional basis for land reform is found in Section 25 of the final Constitution 108 of 1996 specifically subsections (4), (5), (6), (7), (8) and (9). Whereas subsections (1) to (3) provide constitutional protection for property, subsections (4) to (9) provide for an extensive programme of land reform. Subsection (4) of Section 25 specifies that an act to the benefit or interest of the public include acts that serve the nation's commitment to land reform or reform to bring about equitable access to all South Africa's natural resources. The land reform programme is divided into three main sub-programmes, namely: restitution, redistribution and tenure security.

The aims and purposes of the various land reform programmes are:

- To redress the injustices of Apartheid;
- To foster national reconciliation and political stability;
- To underpin economic growth;
- To improve household welfare and alleviate poverty. (White Paper on South African Land Policy 1997(a):v).

Van der Walt (1998:409) specifies the following as some of the characteristics of the land reform programmes:

- The introduction of numerous new rights in land, for example, initial ownership, labour tenant rights and occupier rights;
- Greater statutory recognition of traditionally insecure or weak rights in land;
- A conglomeration of measures that support both common-law property structures as well as fragmented land rights;
- Strong policy-oriented efforts to change the current "white"-dominated distribution of land rights.

The key principles of tenure reform are stated in the White Paper on South African Land Policy (1997c:xi-xii,57-58) as being:

- People need tenure rights not permits;
- Tenure security must be part of a unitary non-racial system of land rights;
- People must be able to choose the tenure appropriate to their circumstances;
- The tenure system must be in keeping with the Constitutional principles of justice and equality;

- A rights based approach and adjudicatory principles have to be adopted which recognise and accommodate *de facto* vested rights;
- New tenure systems and laws should be in line with the situation as it exists on the ground and in practice.

Subsection (5) of Section 25 of the Constitution (No. 108 of 1996) provides that the state should take legislative and other steps to ensure equitable **access** (own emphasis) to land. The various redistribution programmes of the Department of Land Affairs (DLA) specifically apply in this regard. Redistribution programmes aim to provide the disadvantaged and the poor with access to land for residential and productive purposes in order to improve their livelihoods. Land is made available in an equitable manner to people who previously had no land or insufficient land. Its scope includes the urban and rural poor, labour tenants, farm workers as well as new entrants to agriculture. A few examples of current redistribution legislation are the following:

Less Formal Townships Establishment Act No. 113 of 1991
Provision of Certain Land for Settlement Act No. 126 of 1993
Provision of Certain Land for Settlement Amendment Act No. 26 of 1998
Development Facilitation Act No. 67 of 1995
Land Administration Act No. 2 of 1995
Land Reform (Labour Tenants) Act No. 3 of 1996
Housing Act No. 107 of 1997
Land Redistribution for Agricultural Development Programme (LRAD) Aug. 2001
Communal Land Rights Act No. 11 of 2004.

Subsection (6) of Section 25 of the Constitution addresses the issue of rights in land that are less than ownership, which are legally insecure as a result of apartheid laws and policies. It also provides that persons whose land tenure is **legally insecure** because of past racial discrimination are entitled to secure tenure as provided for by an Act of Parliament. A few examples of current tenure reform legislation that seeks to upgrade insecure tenure are the following:

Upgrading of Land Tenure Rights Act No. 112 of 1991
Amendments to the Upgrading of Land Tenure Rights Act No. 112 of 1991
Land Reform (Labour Tenants) Act No. 3 of 1996
Interim Protection of Informal Land Rights Act No. 31 of 1996

Communal Property Associations Act No. 28 of 1996
Extension of Security of Tenure Act No. 62 of 1997
Prevention of Illegal Eviction from and Unlawful Occupation of Land Act 19 of 1998
Communal Land Rights Act No. 11 of 2004
Transformation of Certain Rural Areas Act No. 94 of 1998
Land Affairs General Amendment Act No. 61 of 1998 (previously Act 11 of 1995).

A closer look at the purposes of some of these Acts provides a useful explanation of their intentions:

- The Upgrading of Land Tenure Rights Act No. 112 of 1991 allows for the upgrading of Permission to Occupy permits (PTOs) to title deeds, although later amendments have restricted the Act to residential or business sites in urban areas;
- The Interim Protection of Informal Land Rights Act No. 31 of 1996 is intended to protect people with insecure tenure from losing their rights in land until long-term tenure reform measures are introduced;
- The Communal Property Associations Act No. 28 of 1996 establishes the opportunity for a new form of legal body - the Communal Property Association - through which people may collectively acquire, hold and manage property in terms of a written constitution; and
- The Transformation of Certain Rural Areas Act No. 94 of 1998 provides for the transfer of commonage or township land to the relevant municipality in previous Coloured Rural Reserve areas.

Tenure reform aims to extend security of tenure to all South Africans under diverse forms of or lesser rights in land tenure, including types of communal tenure. This will enable citizens to hold and enjoy the benefits of their land, homes and property without fear of arbitrary action by the State, private individuals or institutions. Tenure reform programmes advocate a **rights-based** approach to tenure reform instead of the previous permit-based and informal systems of land holding.

Subsection (7) of section 25 of the Constitution provides that persons who lost their land as a result of past racial discrimination are entitled to **restitution** (own emphasis) as provided for by an Act of Parliament. The restitution programme aims to restore land and provide other

remedies to people dispossessed by racially discriminatory legislation and practice. A person or community forcefully removed or dispossessed of property after 19 June 1913 as a result of past discriminatory laws or practices is entitled, to the extent provided by an Act of Parliament, either to restitution of that property or to equitable redress. It is based on specific historical land claims. The primary legislation that addresses restitution issues is the Restitution of Land Rights Act 22 of 1994.

Subsection (8) of the Constitution provides that the constitutional protection of property in subsection (1) to (3) should not impede the state from taking legislative and other measures to promote land, water and similar reforms in order to address the imbalances created by past racial discrimination. Land reform initiatives and its beneficiaries thus have a legitimate base in contesting existing property rights in order to secure or upgrade their insecure tenure arrangements.

Constitutional provisions and appropriate legislation are however meaningless without adequate institutional capacity to implement such provisions. Haldrup (2003:5) argues that governments have to implement the necessary institutional arrangements that will enable successful tenure reform. "A precondition for a successful tenure reform is the sustainability of an institutional capacity to cope with large registration programmes and the services required. Shortcomings in institutional capacity have proven to be a limitation in tenure reforms, particularly in the disadvantaged countries, and this does not seem to be overcome by education programmes within the foreseeable future. In this respect it is perhaps necessary to reconsider the basic role of government, changing the focus from government to governance[,] (*sic*) recognizing that the State is but one of the three domains of governance, constituted by the loci of political (the State), economic (the private sector), and social power (the civil society)". According to Haldrup (2003:5) the general characteristics of good governance that should be applied to ensure successful tenure reform are that reform processes be:

- participatory;
- sustainable;
- legitimate and acceptable to the people;
- operates by rule of law;
- accountable;
- enabling and facilitative;

- regulatory rather than controlling;
- service-oriented.

These requirements may also serve as criteria for the evaluation of any tenure reform implementation programme.

CHAPTER FIVE

CASE STUDIES - THE PROCESSES OF IDENTIFICATION AND SURVEYING OF ADMINISTRATIVE AREA BOUNDARIES

5.1 Administrative area boundary project

In January 2004 the Department of Land Affairs (DLA) embarked on a program of surveying all administrative area boundaries that were defined by proclamation during or soon after the British colonial annexation of large areas of the Eastern Cape Province (during which these areas were placed under the British Crown) towards the end of the 19th century. Most of these areas had never been surveyed prior to 2004 due to the high costs of such surveys and the contentions over the boundaries that existed since the time of their creation. The DLA wishes to survey these boundaries despite the contentions that exist around their colonial origin and despite disregard of these boundaries by many local communities over a period of a hundred years.

The main objective of surveying the administrative area boundaries is to register these areas formally in the name of the State since the land has up to now been classified as unregistered state land. Once ownership of these land units has formally been registered in the name of the State, the ownership can be formally transferred to communities in terms of the CLaRA. The administrative area boundaries will serve as a framework for any subsequent lower-order surveys to be performed in these areas (Van den Berg 2004:3). Legitimate encroachments of these boundaries by the local communities will be resolved by adjusting the boundaries through the subdivision of registered administrative areas (Van Zyl, 20th June 2005: Interview). The surveys will thus be conducted through a dual process of first defining the outer limits of administrative areas in order to register the overall extent, and then to accommodate any legitimate boundary discrepancies by means of a second phase of surveys.

The point-to-point descriptions as promulgated in government gazettes at the beginning of the 20th century are sometimes described very ambiguously in such gazettes. Where a boundary is defined by a natural feature such as a river or a well-known mountain ridge, no ambiguity exists in the identification of the boundary on the ground if such a feature still exists in the present. However, where the boundary is described as being a ridge that happens to be very

flat, a land surveyor will experience difficulty in accurately defining the highest point on the ridge especially whence the height levels remain the same along broad cross sections of the ridge. Likewise, in the case of defining a wagon trail of which no evidence exists on the ground, re-establishing the wagon trial can prove to be an impossible exercise. The resolution of such ambiguities becomes even more contentious in considering the centimetre accuracies that are prescribed and required by the Land Survey Act in terms of the formal cadastre. How can a land surveyor define a now non-existent wagon trail to centimetre accuracy without physical evidence on the ground? It appears to be impossible to attain the accuracies required by the Land Survey Act, even with the aid of historic aerial photography. A river stream that has since disappeared, provides another example of the contention that surrounds point-to-point descriptions promulgated one-hundred years ago.

Aerial photography in the Eastern Cape only commenced in 1937, and then only in specific areas (Du Plessis, 31st October 2005: telephonic enquiry). It is highly unlikely that aerial photography of the homeland areas in the Eastern Cape were done before 1940, implying that aerial photographs of homeland areas were taken almost 40 years after the initial demarcation of the administrative area boundaries were performed. The author was unable to detect the wagon trails and small streams that existed at the beginning of the 20th century for his particular study area on 1937 digital aerial photographs covering the two study areas.

However, historical aerial photographs can provide a valuable source of evidence in the identification of administrative area boundaries, since such boundaries are predominantly represented by general boundaries and not as fixed or numerical boundaries. Furthermore, digital aerial photographs used in conjunction with geographic information systems are valuable tools for the analysis, interpretation and identification of spatial features. Such datasets can be viewed on-screen quite readily as three-dimensional images using sophisticated and even elementary stereoscopic glasses.

Administrative area boundaries in the Eastern Cape Province are contentious in that they reflect tribal areas as defined by colonial regimes and not the jurisdictional boundaries of established, democratically-elected local municipal structures. To add to the confusion, the CLaRA provides for the transfer of ownership to communities and not to tribes; a community being defined as "... a group of persons whose rights to land are derived from shared rules determining access to land held in common by such group." The community might be a tribe

in some cases, but not in all cases. If ownership is being conveyed to communities, why are tribal boundaries being surveyed? Should community boundaries established by means of a Land Rights Enquiry not form the basis of the surveys that are required to frame Communal General Plans? Or will tribal, municipal and community boundaries live side-by-side?

5.1.1 Process of identifying administrative area boundaries

In terms of the tender specifications (vide the sample specification document as Appendix 6 on page no. 132) for the supply of diagrams of administrative areas to the Surveyor-General for registration at the Deeds Office, the Land Reform component of the Office of the Surveyor-General in Cape Town is responsible for the supply of a sketch plan indicating the proposed interpretation of the administrative area boundaries (as proclaimed in Proclamation Number 1056 of 1905, and the few amendments to boundaries that were issued thereafter) to the successful contractor/bidder. The staff of this component uses the point-to-point descriptions as proclaimed to identify and annotate the administrative area boundaries on 1:50 000 topographical maps of the relevant areas. Both the identification and annotation are performed manually without any computer aids.

A portfolio of evidence is compiled by the land reform staff of every administrative area, which is then scanned and posted on an image database that can be readily accessed by a successful contractor (or any member of the public for that matter) via a 24-hour auto-emailer facility. Standard 1:50 000 topographical maps of the relevant areas are also available from the Chief Directorate Surveys and Mapping situated in Mowbray, Cape Town.

There are four staff members in the Land Reform division who are responsible for the identification and annotation of administrative area boundaries. These staff members have more than 50 years' experience of the formal cadastre on the whole. The point-to-point descriptions serve as a guide to identify boundary features on the 1:50 000 topographical maps. Any anomalies in the identification of such boundaries are recorded and specifically listed for the attention of and eventual resolution by the successful contractor. It is by exception only that the Land Reform staff make use of other source material (such as for example aerial photographs) to try and identify a boundary or boundaries that cannot readily be identified on the topographical maps. Once the boundary described in the proclamation has been identified as a particular feature on the topographical map, the identified boundary

feature is annotated by hand on the map using a coloured pencil. Distinctive points (not only end points, but also intermediate points) are lettered in order to correspond with a description of the boundary provided by the Land Reform staff. If possible, the approximate length of a boundary is also provided in this description. No digital data sources are used in the identification of boundaries, and limited access to the Cadastral Information System (CIS) databases are provided to the Land Reform staff. In conducting this research, the author discovered that the personal computers assigned to the Land Reform staff were incapable of performing even the most basic of image database queries.

5.1.2 Surveying of administrative area boundaries

The survey of administrative area boundaries are performed by contracted private land surveyors that were appointed by officials of the Department of Land Affairs. The successful contractor performs the survey of administrative area boundaries in terms of the Land Survey Act (No. 8 of 1997) and the Survey Regulations framed thereunder. Furthermore, the boundaries have to be identified, demarcated and surveyed in accordance with the proclaimed administrative area boundary locations, and existing registered properties must be excluded. State domestic facilities (SDF's) such as schools, clinics, municipal properties, etcetera, are surveyed as subdivisions of a particular administrative area. The boundaries of such SDF's are normally depicted by existing fence lines. All general boundaries, such as river boundaries as well as other natural features which depict the outer extent of the administrative area, may be adopted from 1:50 000 topographical maps or their digital representations/datasets. The data of common or shared boundaries of adjoining administrative areas must be adopted from the older survey into the newer survey in order to provide consistency in the location of such shared boundaries (vide the example of a tender specification as Appendix 6 on page no. 132).

The survey regulations (vide Government Notice 1130 dated 29th August 1997) promulgated in terms of section 10 of the Land Survey Act (No. 8 of 1997) specify the limits of allowable error in survey field work as follows:

The accuracy with which a survey shall be done is expressed by the following formulae, where -

Class A refers to-

(i) the determination of reference marks established in terms of regulation 16; and

(ii) such other determinations as may be prescribed in these regulations;

Class B refers to-

(i) the survey of new townships and settlements;

(ii) the resurvey or subdivision of an erf in an existing township or a lot in a settlement;

(iii) the survey for the replacement of a beacon in a township or a settlement; and

(iv) the survey for the preparation of a diagram required under the law relating to the registration of mining titles in respect of precious stones and precious metals;

Class C refers to-

all surveys not included in Class A or B, and shall include surveys for mining titles in respect of base minerals.

When the position of a point is determined by polars, traverse, triangulation, trilateration, GPS or a combination of these methods, the displacement between any observed ray, measured distance or GPS vector and the equivalent quantity derived from the final co-ordinates of the point fixed shall not exceed

for Class A: A metres;

for Class B: 1,5A metres;

for Class C: 3A metres;

where A is equal to

$$0{,}04 + \frac{S}{30\,000}$$

and S is the distance between the known and the unknown point: provided that in the case of a GPS vector the comparison is made between the vector derived from the final co-ordinates and the measured vector after the datum transformation has been applied.

However, due to the rapid progress made in GPS technology, most of the requirements specified in the Survey Regulations as well as in CSG Circular No. 2 of 1992 with respect to GPS vectors are not applicable anymore and may be ignored for all practical purposes. Since all surveys (not only GPS surveys) conducted in South Africa have to be based on the national control network (which is defined in terms of the WGS84 geocentric spheroid), and since the GPS equipment automatically generates coordinates on the appropriate datum (with only differential corrections to be applied to the measured vector in order to attain the final

coordinates of a beacon), the GPS technology has partially rendered most of the Survey Regulations requirements with respect to GPS surveys obsolete. The scaling down of requirements in terms of GPS survey standards is reflected in paragraph 2 of S.G. Circular No. 1 of 1999 in which all professional land surveyors, who submit GPS field records to the Surveyor-General in Cape Town for approval, have to comply with the following stipulated conditions only:

i) *a comprehensive reference to control transformation parameters is required in the survey report;*

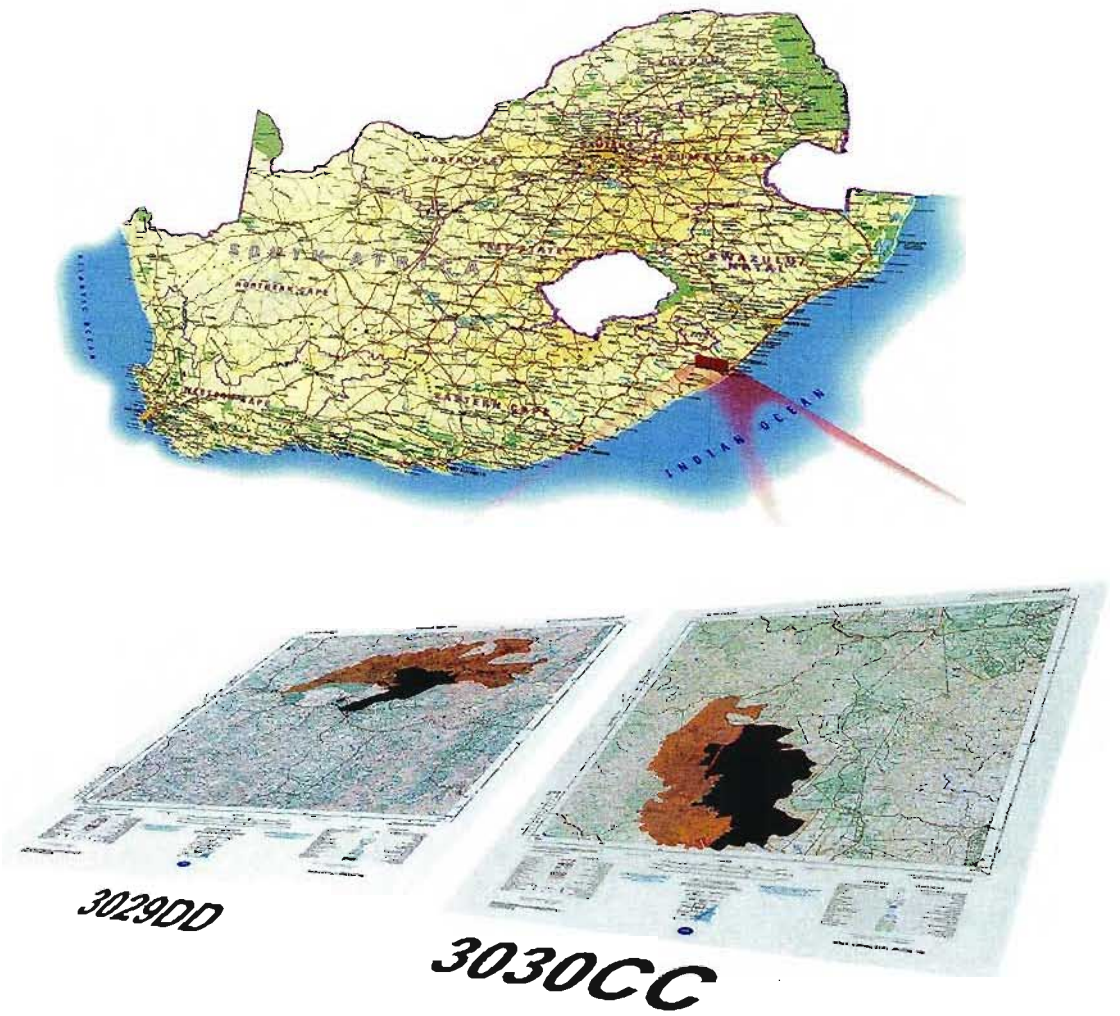
ii) *the minimum field record required in terms of Regulations for GPS surveys is a table comprising reference to both base and check stations together with the final coordinates and differences obtained.*

The latter is a clear indication of the simplicity and panoptic character of surveys conducted by means of GPS technology.

Greater accuracy is however obtainable with the skilful use of more than one base station (generating more than one vector) that will reveal possible errors in the position of base stations, the elimination of occupation errors, the execution of proper initialisation procedures, and the sensible selection of satellite geometry parameters to reduce errors associated with multi-path reflections or other interference from natural or man-made obstructions. The onus to ensure that proper GPS field procedures are followed is on the land surveyor who performs the particular survey. Although land surveyors are required in terms of the Land Survey Act to provide sufficient evidence to the Surveyor-General that correct GPS procedures were performed to remove, for instance, integer cycle ambiguities, and that adequate re-initialisation procedures were performed in the event of cycle slips, such evidence/provisions are not exercised or enforced by the Surveyor-General in practice. In terms of section 9 of the Land Survey Act, the Survey Regulations Board is responsible for regulating the quality of surveys through the establishment of standards that apply to survey procedures and even survey instruments (see section 10 subsections 1 (a), (b), (h) and (j) of the Land Survey Act). In terms of section 6 subsection 1 (b) of the Land Survey Act, the Surveyors-General have to examine and approve general plans and diagrams that represent land units in accordance with the provisions specified in the Act. However, their task is made difficult by the serious lack of proper standards for the execution of GPS surveys that are specified in the Survey Regulations.

5.2 Criteria used in the selection of the Intshamati and Etyeni Case Studies

Two case studies were conducted in the Eastern Cape Province in order to test the stated hypotheses. Case study area descriptions are provided in the form of a locality map denoted as Map 1 below.



Map 1: Locality map (top half) depicting the locations of the Case Study Areas and the Intshamati and Etyeni Administrative Areas, also in relation to the respective 1:50 000 topographical map series with references 3029DD and 3030CC (bottom half).

The prime objective of both case studies was to establish the location of the *de facto* administrative area boundaries in order to collect sufficient data to compare the location of the *de facto* boundaries with that of the *de jure* boundaries as surveyed by a professional land

surveyor. At the same time the author tried to establish whether the relevant communities agree with the location of the boundaries as demarcated by the professional land surveyors. It should be noted that the Administrative Area Boundary Project had been in operation for almost two years when the fieldwork for the case studies were conducted by the author.

The following factors determined the choice of the case study selections:

- The DLA's Administrative Area Boundaries Project commenced in the northern regions of the Eastern Cape Province working towards the south. The author was therefore constricted to these northern regions where the formal surveys of professional land surveyors had been executed and approved very recently in terms of the DLA's Project and the formal cadastre. The older completed administrative areas in the southern regions of the province do not comply with both aforementioned requirements, hence effectively disqualifying them from being selected.
- The field research was performed at a time when less than one quarter of the administrative area boundaries had been surveyed or was being surveyed in terms of the DLA's Project (vide table 3 on page no. 50).
- The availability of Traditional Authority members and chiefs, together with the five (5) working days limitation to conduct the field research, restricted the number of case studies that could be performed. Also, in order to adhere to the principle of randomness of selection, the author was prompted not to pre-select specific study areas, but to select areas only upon arrival in the study area. As a result it was difficult to pre-plan for a site-specific area, especially in terms of adequate documentation to support successful execution of the field survey. Since the case study areas were not predetermined, more documentation than usual had to be prepared and carried into the study area, and the author was obliged to improvise depending on the prevailing site-specific conditions encountered in the field.
- The single-frequency, static GPS-receiver (which requires both the reference and rover receivers to remain stationary for more than 20 minutes at each observation point) imposed restrictions in terms of initialisation time, occupation time, quality of data collection, and the accuracies obtainable. The availability of a fixed local base station relatively close to the study area (preferably within 5 kilometres of the areas to be surveyed), and which is on the national survey control system, was imperative to ensure the reliability of GPS survey measurements.

- Logistical arrangements such as adequate accommodation made it essential to reserve such accommodation within an 80-kilometre radius from the study area to allow the author sufficient daytime to conduct interviews and perform the necessary field surveys.

5.3 Case Study A: Intshamati administrative area

Since the Administrative Area Project of the DLA started its surveys from the north-eastern parts of the Eastern Cape Province proceeding systematically to the south, the author decided to randomly select two administrative areas in this northern region that had already been completed by the contractors and which surveys had already been approved in terms of the Land Survey Act. This would expedite the field research and ensure that no delays occurred in the execution of this research as a result of unanticipated slow progress of the Project.

The field research for the Intshamati region was conducted by the author for three days during the period 29th August 2005 to 31st August 2005. The aim of the field research was to survey the boundaries of the administrative area belonging to and occupied by the Intshamati tribe, and to compare this *de facto* survey with the *de jure* survey performed previously by a professional land surveyor in terms of the Land Survey Act (No. 8 of 1997). Consequently, the primary objective of the field survey was to establish the *de facto* location of the administrative area boundary as it has been observed and enforced by the relevant indigenous tribal community/communities over an extensive period of almost a century.

The Intshamati tribe is an impoverished community, who lives in the northern Pondoland areas of the Eastern Cape Province and makes use of mainly subsistence cattle farming for their daily livelihoods. Hardly any crop farming exists, and the few patches of cultivated land are mainly rain-fed cash crops, which do not generate any substantial revenue. Even the infrastructure in terms of roads, water supplies and electricity supplies are either non-existent or very primitive indeed.

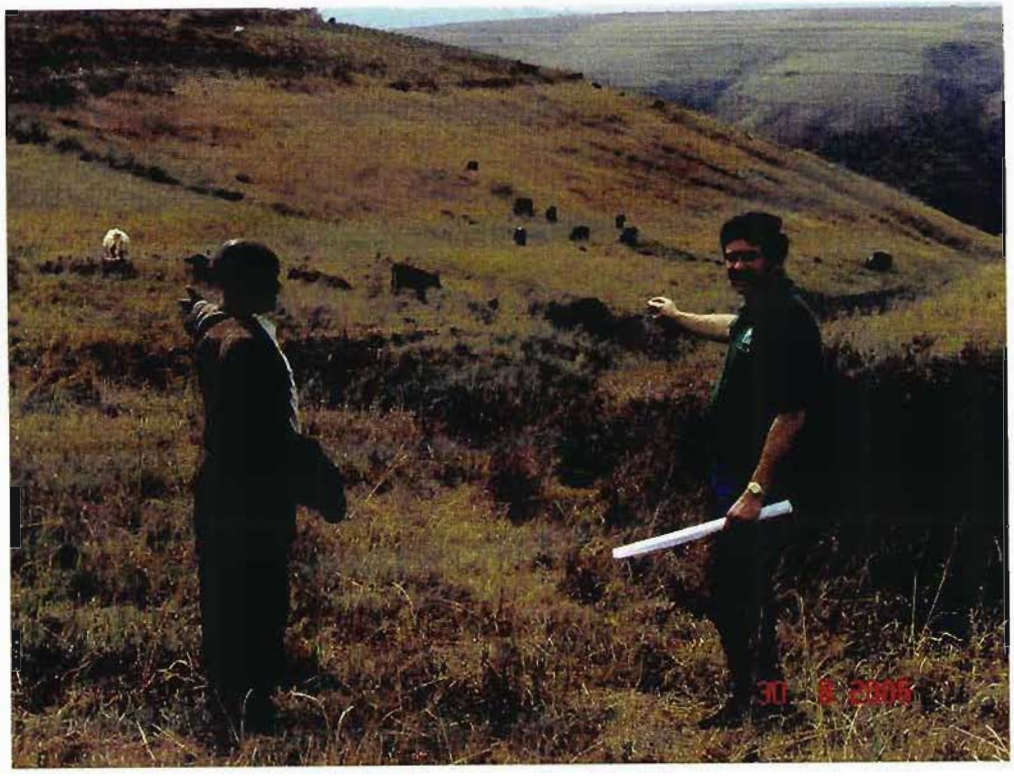
The execution of this field research required that members or representatives of the Intshamati community themselves identify and indicate the administrative area boundary to the author in the field, and that the author then proceeds to survey the boundary as indicated by the community by means of GPS-equipment. A comparison is then made between the position of the researched boundary (called the *de facto* boundary) and that of the boundary

as surveyed by the professional land surveyor (called the *de jure* boundary) in terms of both positional accuracies and instances of boundary misinterpretation or identification.

The GPS survey equipment used by the author during the field research was a single-frequency, static mode, Leica SR20 GPS-receiver, which differs from that used by professional land surveyors, who normally use dual-frequency, kinematic mode, geodetic-type GPS-receivers. Single-frequency GPS-receivers (using L1 carrier frequency only) have a much longer initialisation period and are less accurate than its dual-frequency equivalents (which use both L1 and L2 carrier frequencies). Also, static receivers have no radio link for the real time downloading of error differentials and are thus restricted to post-processing techniques, whereas kinematic receivers receive these error differentials immediately via a radio link for real time processing and reduction of survey measurements. Differential techniques (using a base receiver and a rover receiver as opposed to using a single, autonomous receiver) were used to obtain error anomalies, which were applied afterwards to the raw GPS-measurements in order to correct for such errors. Additionally, the author used only one local base station (being TR62 or Trig.62), whereas professional land surveyors are required to use two base stations in order to comply with the requirement of having two vectors to determine the position of a point. Two vectors enable the land surveyor to determine whether a shift has occurred in the differentially corrected points due to a shift in the true position of either one or both base stations (also referred to as residual error). The author used the TrigNet base station at Mthatha (or Umtata) (a distance of 100 kms away from the study area) as secondary base station, to verify both the positional accuracy and the differential corrections received from the primary base station. No positional shifts in the true positions of the primary local base stations were detected in the surveys of both case study performed by the author (see survey calculations/reductions in this regard as Appendix 5 on page no. 125).

The author met with the Chief of the Intshamati Traditional Authority, Ms. N. Sontsele, on Monday the 29th August 2005. Ms. Sontsele was briefed on the aims of this research and the reasons for the field survey. A follow-up meeting was scheduled for the day thereafter, at which the Intshamati Traditional Authority appointed an elder to indicate the position of the administrative area boundary to the author in the field. Due to the roughness of the terrain, some stretches of the boundary had to be walked on foot, although much of it was travelled

by vehicle. The Intshamati administrative area covers an area of almost 2000 hectares (vide Surveyor-General diagram number 1294/2005).

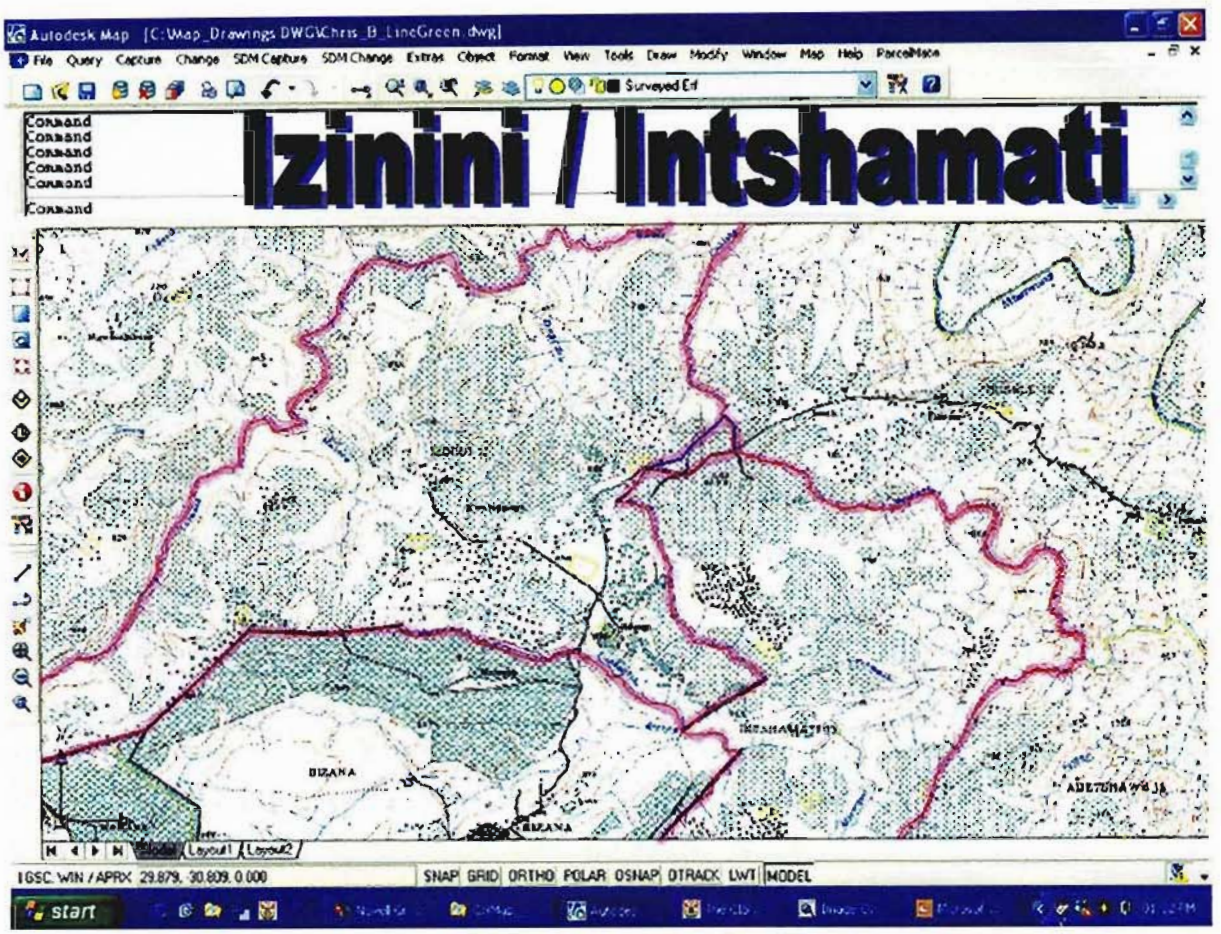


Photograph 1: An elder from the Intshamati Traditional Authority indicates the position of the administrative area boundary to the author. (Erratum: Date on photograph should be 30/08/2005)

A large part of the boundary consists of general boundaries in the form of rivers, roads and footpaths that do not require any field surveys, since it can be extracted from topographical datasets available from the DLA's Chief Directorate of Surveys and Mapping (CDSM). The two datasets, that is those obtained from the field survey (being the fixed boundaries) and those obtained from CDSM (being the general boundaries), are combined in order to produce the entire boundary of the administrative area concerned.

A comparison between the boundary as surveyed by the author and that of the professional land surveyor (Mr. Alan Lewis) (vide Lewis's survey report as Appendix 3 on page no. 117) was effected by means of GIS overlay operations (using AutoDesk Map2004™ software), but also using the relevant 1:50 000 topographical, geo-referenced dataset for that particular area (with reference 3029DD) as a raster backdrop. In addition, the administrative area

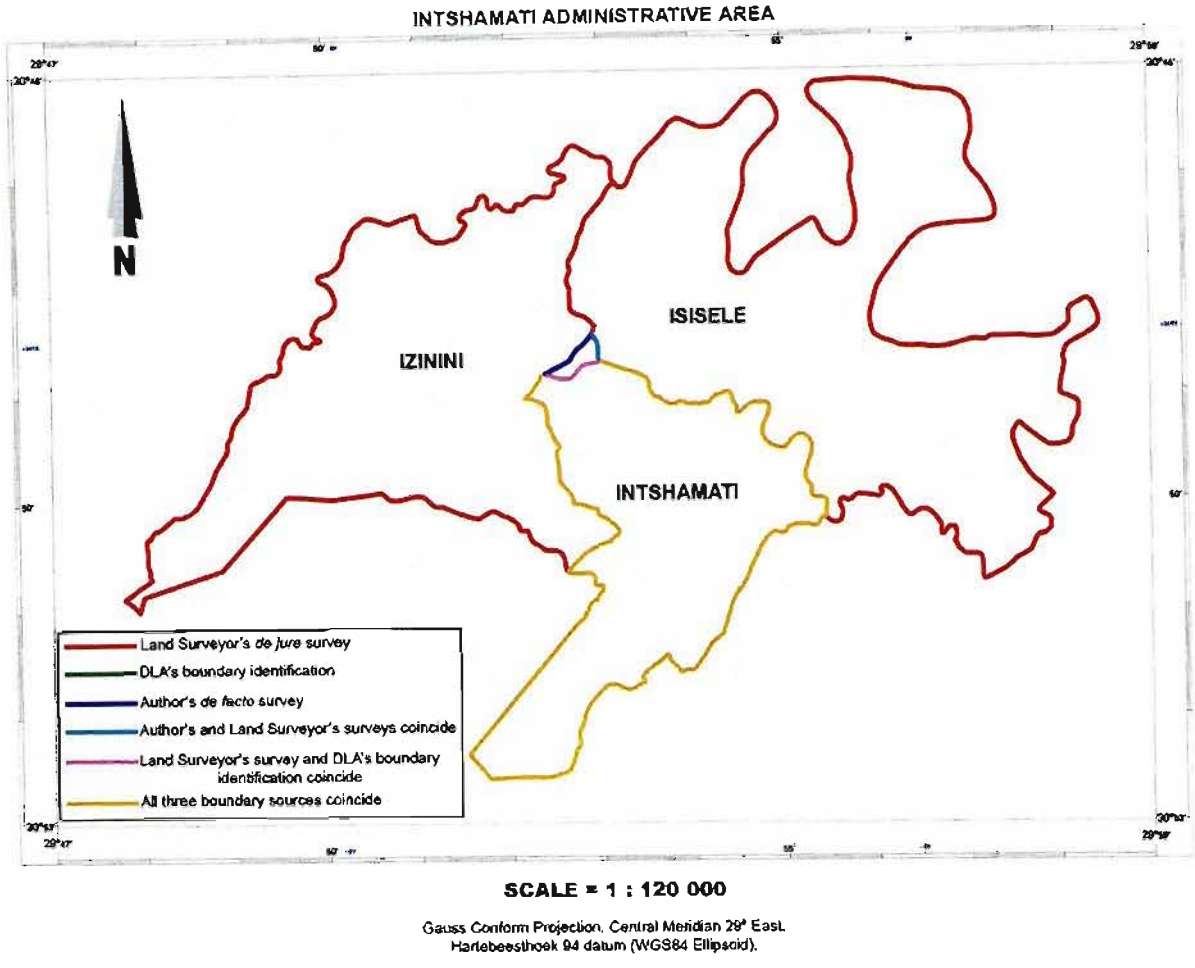
boundary as identified and plotted by DLA staff as part of the tender specifications was digitised in order to provide another overlay that were compared spatially to the aforementioned datasets.



Map 2: A geographical database extract of a portion of the common boundary between the Izinini (to the left) and Intshamati (to the right) Administrative Areas, which indicates the GIS vector overlay operations performed by the author by means of AutoDesk Map2004™ software and using the georeferenced 1:50 000 digital topographical map image as a raster backdrop.

In analysing the results, no marked difference could be found between the survey performed by land surveyor Lewis (the *de jure* boundary) and that as presented to him by the DLA staff. However, quite a large difference in the location of the boundary is evident in the northernmost part of the administrative area between aforementioned two datasets (indicated as red polygon on the GIS map shown as Map 3 on page no. 79 below) and the *de facto* boundary as indicated to the author (and subsequently surveyed by the author) by the Intshamati tribe (vide the sliver of land at the northernmost boundary point of the Intshamati

Administrative Area indicated by a blue line). Although land surveyor Lewis revealed this boundary dispute in his survey report, the DLA has approved his survey despite the existence of a boundary dispute and without an agreement on the boundary between contiguous 'owners'.



Map 3: GIS map of the Intshamati Administrative Area comparing the field survey undertaken by the author (blue polygon) with that of the land surveyor (red polygon) and the portfolio of the DLA's Land Reform staff (green polygon)

The significance of this survey approval is that the Intshamati tribe is now effectively cut off from two sources of water supply from two rivers, which would have been the common boundary between them and the Izinini and Isisele tribes respectively. Of note is the coordinate differences achieved between two mutual beacons surveyed by both land surveyor Lewis and the author as reflected in table 4 below. This is an indication of the relative accuracy between the two surveys using two different GPS survey techniques and equipment.

Table 4: Comparison of relative GPS survey accuracies achieved in the field surveys. (Formulas used to calculate the differences between the two sets of coordinates are: distance $S = \sqrt{dY^2+dX^2}$, and direction $D = \cos^{-1}(dX/S) + 180°$)

Point name	Lewis's survey	Author's survey	Difference
IS 7	-84 518,93 +3410 439,53	-84 519,52 +3410 439,05	S=0,76m D=230° 52' 11"
IS 2	-83 869.69 +3410 728,96	-83 870,49 +3410 727,76	S=1,44m D=213° 41' 24"

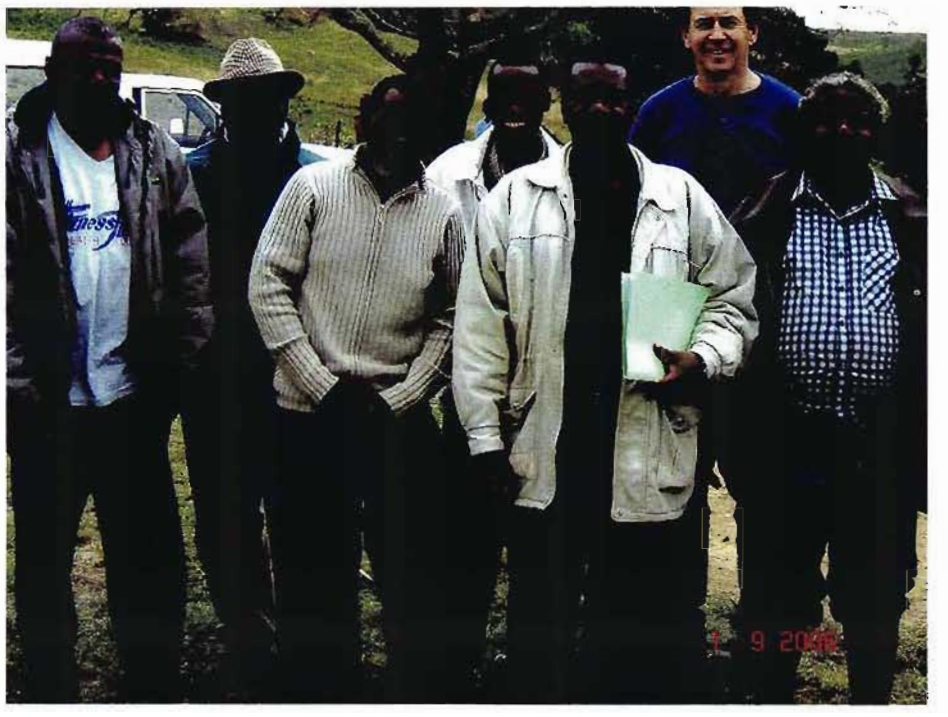
Although the results are not conclusive due to an insufficient number of mutual observation points, the relative accuracy between the two surveys appears to be approximately one (1) metre with a commensurate shift/swing in a north-easterly direction. Also, time constraints and the nature of the boundaries (administrative area boundaries being predominantly general boundaries and not fixed boundaries) made it difficult to do a proper comparison between the two surveys. The GPS equipment and methods used by the professional land surveyor are also unknown, which effectively invalidates a proper comparison.

5.4 Case Study B: Etyeni administrative area

Unlike the Intshamati tribe, the Etyeni community is quite affluent and is involved in high production commercial farming. Four thousand hectares of the approximately 5000 hectares of the Etyeni administrative area (vide Surveyor-General diagram number 3690/2004) are irrigated, cultivated land, of which 3000 hectares are sugar cane plantations and the rest forestry plantations (mainly blue gum tree plantations). The Etyeni administrative area is also in northern Pondoland, having as its eastern border the Umtamvuna river, which also serves as the border between the Eastern Cape Province and the Province of KwaZulu-Natal.

The same survey techniques and equipment was used in this field survey as was used in the Intshamati field survey. Again the community representatives were approached to indicate the administrative area boundary that delineate their tribal area. The author met with the paramount-chief of the area, Mr. D.J. Mditshwa, on the morning of the 1st September 2005. Mr. Mditshwa was accompanied by four other chiefs from surrounding administrative areas

(see photograph 2 below). The author then performed the survey measurements in accordance with the position of the boundary as indicated by the community representatives.

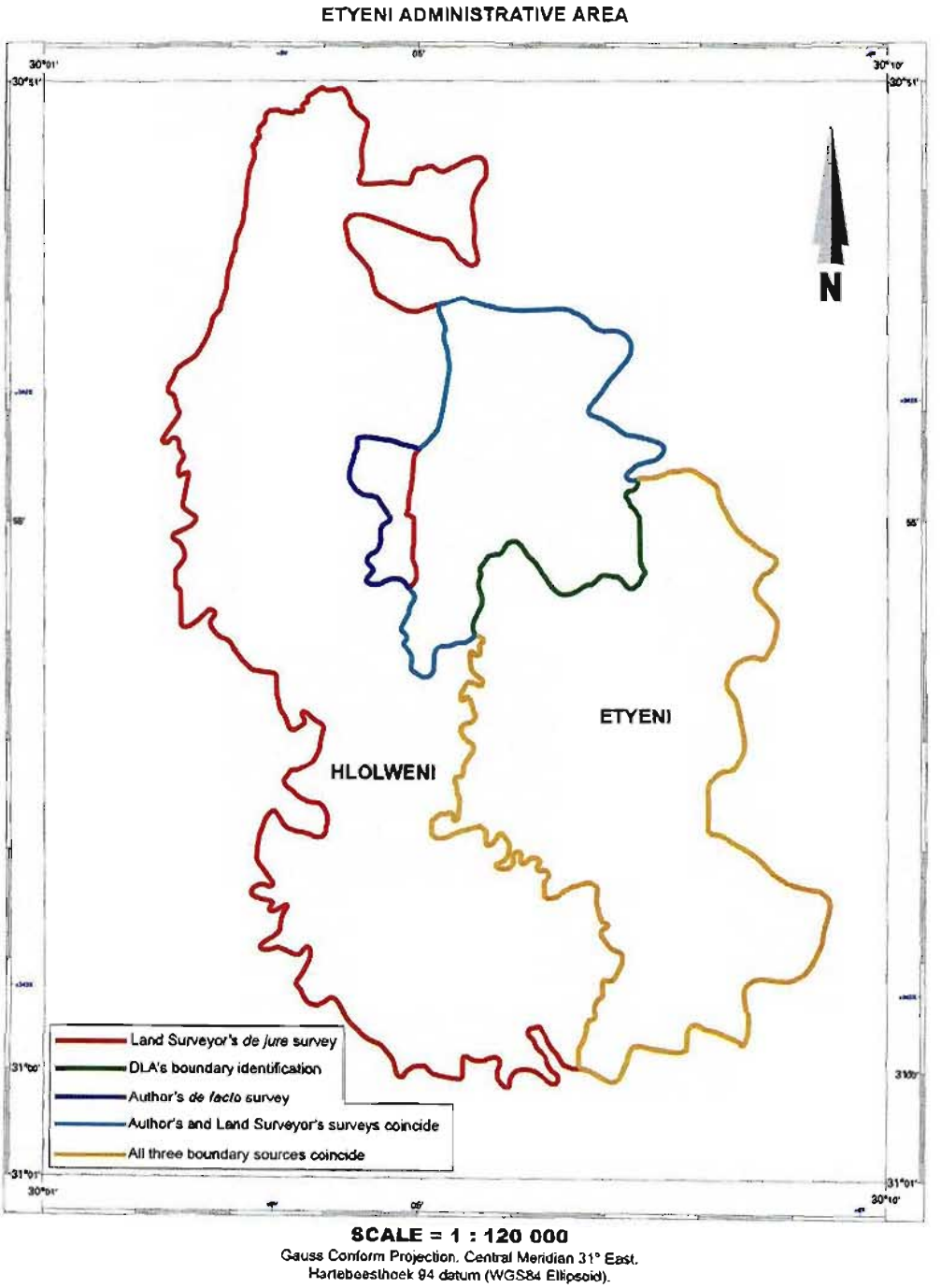


Photograph 2: The author posing with Paramount-Chief D.J. Mditshwa and four chiefs of surrounding administrative areas during discussions on the location of the Etyeni administrative area boundary. (Erratum: Date on photograph should be 01/09/2005)

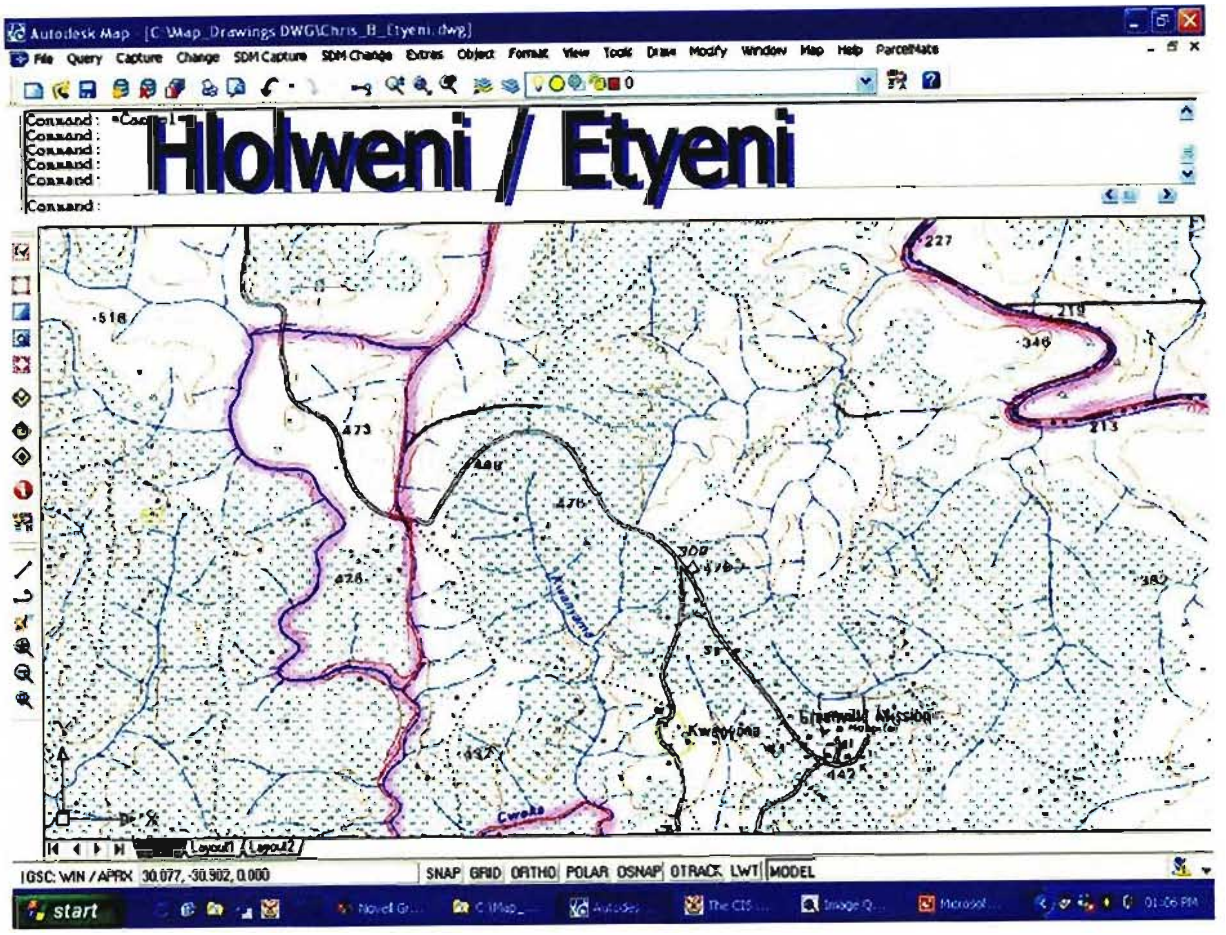
The field survey for the Etyeni region was conducted by the author for a duration of two days during the period 1st September 2005 to 2nd September 2005. The primary GPS base station was established at trigonometrical beacon number 309 (Trig. 309) approximately five kilometres from the area where the field survey was performed. The results of the field survey was again plotted through GIS overlay operations (vide spatial database extract on page no. 83 below) again using a 1:50 000 digital, geo-referenced, topographic map (with reference 3030CC) as a raster backdrop.

The red polygons on the GIS map (Map 4 on page 82 below) represent the boundary of the administrative area as surveyed by professional land surveyor Mr. M. Nzelenzele. The green polygon was digitised by the author using AutoDesk Map2004™ software from the tender specification map compiled by DLA staff, which purportedly represents the position of the boundary as promulgated in the 1905 Government Gazette (as point-to-point boundary descriptions) defining the limits of the Etyeni administrative area. The blue polygon

represents the *de facto* boundary of the administrative area as indicated by the community representatives.



Map 4: GIS map of the Etyeni Administrative Area comparing the field survey undertaken by the author (blue polygon) with that of the land surveyor (red polygon) and the portfolio of the DLA's Land Reform staff (green polygon).



Map 5: A geographical database extract of a portion of the common boundary between the Hlolweni (to the left) and Etyeni (to the right) Administrative Areas, which indicates the GIS vector overlay operations performed by the author by means of AutoDesk Map2004™ software and using the georeferenced 1:50 000 digital topographical map image as a raster backdrop.

From the GIS map (shown as Map 4 on page 82) it is clear that there are three interpretations of the position of the administrative area boundary, that is, the boundary as surveyed by the professional land surveyor, the boundary as interpreted by the DLA officials, and the *de facto* boundary recognised by the relevant tribal communities as the true boundary. Important to note is that there is no dispute between the communities themselves as to the true position of the administrative area boundary, and all the relevant chiefs agree on the location of the boundary. Yet again, the DLA did approve the land surveyor's representation of the boundary despite unanimous disagreement by all the relevant chiefs to the position of the boundary as surveyed by the land surveyor.

CHAPTER SIX
DATA ANALYSIS AND RESULTS

The desktop study (using secondary on-line data sources) into communal tenure arrangements has revealed that such tenure arrangements are rather complex and to such an extent that it cannot be modelled by the traditional, one-dimensional, hierarchical, Western-type ownership model. The existing *de facto* tenure arrangements instituted in the form of quitrent and permission to occupy certificates were restrictive and did not have the desired effect of securing the tenure of the poor, since these tenure types were regarded by colonial and apartheid regimes as second-rate, and the locals frequently disregarded such arrangements due to its reluctant and haphazard implementation and enforcement by designated land administration authorities.

The study of secondary data sources into the South African land administration system (in terms of the registration of deeds and the survey of land parcels in particular) has revealed that the system is too rigid and inflexible and therefore not suited to accommodate existing customary tenure arrangements. The notion of changing the customary tenure arrangements in order to suit the South African land administration system (as is implied by the CLaRA) appears to be socio-economically, financially and technically flawed. Surely, the system should be adapted to accommodate the customary tenure arrangements, as is also being suggested by Van der Molen and Lemmen (2004:5,6). In terms of their recommendations seven (7) and eight (8) respectively, land administration systems should be able to accommodate various land tenure arrangements and should even cope with new forms of statutory tenure. In South Africa though, the cadastre has to date failed to make the important translation from being provider-driven (supply side) to being user-driven (demand side) resulting in a very rigid system.

The formal cadastre (and its digital equivalent called the Cadastral Information System or CIS) in South Africa is nothing more than a record of ownership and, by frequent own admission by DLA managers working in offices of the Surveyors-General (SG's), remains "an index system to formal land parcels". This is a far cry from the multi-purpose cadastres found in more modern economies. This also poses a huge restriction on the application of the Surveyor-General's spatial database in settings other than as a cadastral index. Additionally, the accuracy and completeness of the existing digital cadastres are questionable due to

"holes" (that is, sporadic missing data) in the spatial database, and rather incomplete and haphazard compilation of metadata. A further restriction on the applicability of the formal cadastre and its digital equivalent is the exclusion of all informal tenure types that are held by more than 70% of households in South Africa. This is a serious impediment that annuls any efforts to modernise land administration systems in former homeland areas.

The work methods and procedures used by the Land Reform Division in the office of the Surveyor-General are very primitive to say the least. The methods used are the same that have been used for decades and work processes have as a result not benefited from the immense advances in technology that have been made over the years, especially with regards to the spatial information tools provided by geographical information systems software (GIS). The staff working in this division has not benefited from the multi-skilling strategy that exists, but which is purportedly only selectively applied to primarily new recruits or "problem children" in the establishment. Not only do the staff lack appropriate GIS skills, but the total lack of GIS technology prevents the staff from exploiting the huge number of external digital data sources that are available. A somewhat misguided over-reliance exists on the supervisor of the division to resolve anomalies that arise from the identification of boundaries. Unfortunately, even the supervisor does not have ready access to digital datasets, which restricts his ability to resolve even minor problems effectively and speedily.

The field research conducted from 28th August 2005 to 02nd September 2005 in the north-eastern parts of the Eastern Cape Province has revealed that three sources of error emanating from the three different role-players involved in the identification and survey of administrative area boundaries exist. From the Etyeni case study it is evident that the description of the administrative area boundary as presented in the relevant Government Gazette was misinterpreted and misrepresented by DLA officials in the drafting of the tender documents. Consequently, the land surveyor responsible for the identification, demarcation and survey of the boundary in the field deviated quite substantially from the graphical representation presented by the DLA officials in the tender documents and provided (admittedly after consultation with the relevant traditional authorities) his own interpretation of the location of the boundary. Furthermore, the identification of the Etyeni administrative area boundary as indicated to the researcher by the relevant traditional authority differs quite substantially from that of both the DLA officials and the land surveyor that performed the initial survey.

The Intshamati case study revealed that the greater enforcement of power by influential tribes can rob the smaller, less powerful tribes from valuable sources of livelihood, in this case access to the rivers that serve as shared boundaries between the three tribes. Whereas there is disagreement between three adjoining tribes (the Izinini, the Isisele, and the Intshamati) as to the exact location of their adjoining boundaries, the relevant land surveyor has nevertheless obtained the approval of the Surveyor-General for his survey of such administrative area boundaries. This is also in spite of the fact that the sliver of land causing the dispute is indicated by a 1968 reclamation proposals plan compiled by the former Transkei Department of Agriculture and Forestry as being part of "Ntshamati Administrative Area No. 13". The *de facto* boundary as indicated to the author by the Intshamati representative complies with the position of the boundary as indicated on aforementioned plan, but differs significantly from the *de jure* boundary as surveyed by the professional land surveyor.

Despite the provisions stipulated in the tender specification, one of which compels the successful contractor to provide duly signed boundary certificates to the Surveyor-General upon lodgement of survey documents for examination and approval (vide paragraph 4.3 in the Tender Specification document shown as Appendix 6 on page no.'s 132-144), surveys are still (irrespective of their quite obvious misrepresentations) being approved by the Surveyor-General for registration purposes without any agreement by the affected parties concerning the location of such surveyed administrative area boundaries in cases where the boundaries are being disputed. Both case studies undertaken by this researcher bears witness to the latter.

Even more devastating is the discovery by this author that GPS surveys are being performed without the existence of minimum standards or specifications for the execution of such surveys. The lack of proper GPS standards or prescripts is further compounded by the unholy and unheard of practice of unseemly adopting the coordinate values of common beacons from a previously surveyed, adjoining land parcel (however inaccurate) into the newer survey without knowing or checking the accuracy of such beacons first. These are serious injunctions against acceptable survey practices, since such surveys represent huge infringements on well-established and renowned survey techniques promoting professionally executed and high-quality surveys. The lack of standards is evident from the inadequate survey reports, field notes and computations that have been submitted to the office of the

Surveyor-General in Cape Town with respect to the Administrative Area Boundary Project. Initial or former surveys normally provide historical evidence as a basis for any subsequent surveys, and the land surveyors "... usually abide by the established practice of 'following in the footsteps of the original surveyor'" (Barnes and Eckl 1996:13). However, since there are no standards regulating either the GPS field survey methods or the presentation of the results of GPS surveys, the subsequent use of the original/initial survey (in particular administrative area boundary surveys) by other surveyors is effectively terminated. Surveys conducted under such precarious arrangements cannot be relied upon for any future surveys due to the many inconsistencies (irregular shifts) that will occur between the original and any subsequent surveys. Contrary to the statement made at the beginning of this thesis (also mentioned in Van den Berg, 2004), the surveys of the administrative area boundaries will therefore not serve as adequate tools or as a framework for any subsequent lower-order sub-divisional surveys. This is as a result of the inferior and indeterminable quality of the GPS-related administrative area boundary surveys. Many (if not most) of these surveys can therefore not be used by land surveyors to reconstruct a trail of historical survey evidence that will convince the Surveyor-General that their later surveys are correct and are consequently justified and registerable.

Another controversial factor which influences the registerability of the administrative areas as surveyed is whether the boundaries match the unit of "community" entrusted by affected communities to receive ownership in terms of the provisions of the CLaRA. Administrative area boundaries define the extent of the occupation rights of tribes as they existed a century ago. However, a lot of political and social changes (forced removals in particular) have occurred in the many years that followed the enactment of the original proclamations. The basic premise or inference that the **original** tribe is the unit of "community" is thus not only pretentious and arrogant, but can also be construed as being politically insensitive and unjust. Apart from disputes between tribes over the location of boundaries, there also appears to be disagreements within tribes as to who belongs to a particular tribe. What about those communities that live within the bounds of an administrative area but are not affiliated to that particular tribe, or are descendants of another tribe in a remote location from whom they have become estranged? South Africa's history of forced removals is evidenced in the relocation of many communities to various tribal areas resulting in a conglomeration of mixed tribal groupings/identities who do not necessarily ascribe to the original administrative area demarcations. The DLA's Administrative Area Boundary Project can therefore be seen as an

attempt by the South African government to reinforce and re-establish tribal affiliations and hierarchies, contrary to prevailing social and political realities.

CHAPTER SEVEN
CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusive evidence to support the research hypotheses, and to draw conclusions that support both the primary and secondary objectives of this research. The evidence and conclusions will be presented in accordance with the following schematic:

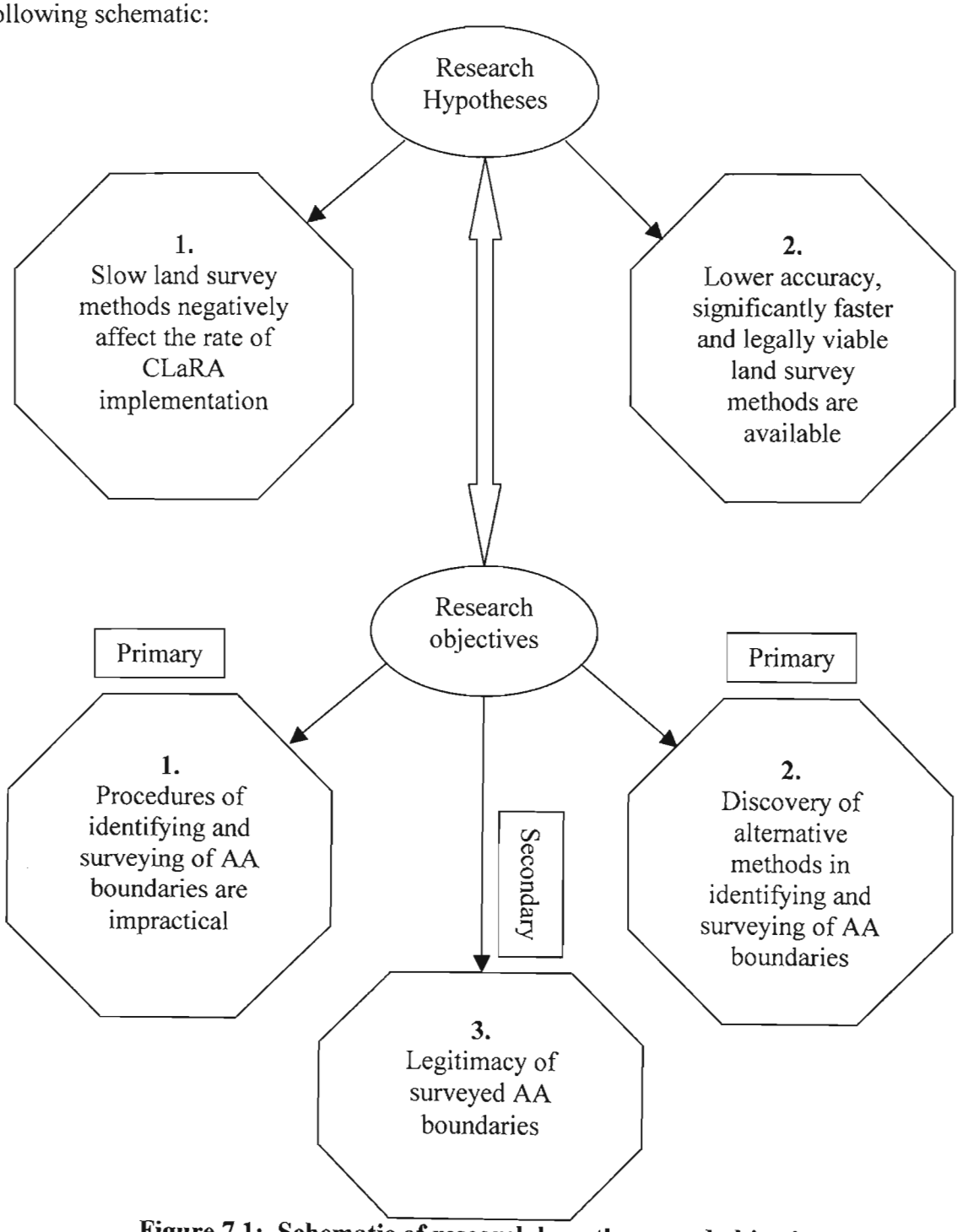


Figure 7.1: Schematic of research hypotheses and objectives

The first hypothesis, which suggests that slow land survey methods negatively affect the rate of CLaRA implementation, is evident from the fact that the compilation of Communal General Plans (which is a requirement for the registration of ownership in terms of the CLaRA) is dependant on the formal surveying of communal land units. Since formal surveying not only entails high standards of accuracy, but also the application of additional or tediously protracted survey techniques to achieve such accuracies, the rate of implementation of CLaRA is slowed down considerably.

The DLA has even made it a requirement that the survey of administrative area boundaries be executed before conducting the land rights enquiries in terms of CLaRA. However, this notion that administrative area boundaries should be surveyed prior to the survey of land units required for Communal General Plans is confutable, since advanced technologies have effectively replaced older survey conventions that required the 'whole to be surveyed before the part'. 'Absolute' accuracies (but admittedly always relative to a specific mathematical reference spheroid) can readily be obtained using modern survey equipment based on a national or international control network. No administrative area boundary framework is therefore necessary as a prerequisite to the execution of surveys for the framing of Communal General Plans. The surveys of the administrative area boundaries therefore hamper the implementation of CLaRA due to the DLA's insistence on the formal surveying of these boundaries before commencing with the implementation of the CLaRA.

Furthermore, the desktop study into new survey technologies and methods revealed the existence of advanced technologies and the successful application of such technologies in order to accelerate and streamline survey production processes. The survey process forms an integral part of the formal registration process and could therefore have a significant negative impact on delivery in terms of the CLaRA implementation process, especially if outdated survey techniques are used. Unfortunately, there is no requirement compelling land surveyors to use advanced technologies such as GPS equipment. This allows the land surveyors the freedom to use even primitive equipment and traditional survey methods as long as it complies with the Survey Regulations. However, the tender contract does specify a reasonable timeframe for the execution of administrative area boundary surveys (vide example of tender specification document as Appendix 6 paragraph 5.3 on page no. 138).

The second hypothesis relates directly to that of the first in that the availability of significantly faster and legally viable, though of lower accuracy, survey methods were explored. A number of the desktop studies (secondary on-line data sources) showed that vast improvements in the productivity of both office and fieldwork could be achieved whence using, for instance, modern GPS survey techniques combined with GIS mapping technology (vide Barnes, Chaplin and Moyer 1998, Rugege 2005, Lyons and Chandra 2001 in Rugege 2005:12,15, and Gerdan 1991). Particularly useful is the alternative bottom-up strategy proposed by Gustafson (2005) in which he reveals capturing techniques in which improved efficiencies in the accurate determination, recording and dissemination of land information can be obtained.

In terms of the field survey conducted by the author, it was proven that a relative accuracy of less than one metre is achievable with static, single-frequency GPS equipment. This relative accuracy was achieved with the use of only one base station (and thus one vector), compared to the two or more vectors that were supposedly used (but could not be confirmed by the author due to the confidentiality of such information) by the professional land surveyors in the *de jure* surveys. However, due to the danger of unanticipated and hard-to-detect shifts in the position of base stations, the use of only one vector from a single base station is not recommended.

One of the primary objectives of this research was to establish whether the procedures that are being used for identifying and surveying of administrative area boundaries are impractical. The Etyeni case study proved a complete misidentification of the Etyeni administrative area boundary by the responsible DLA staff. Also, the methods used by such staff appear to be slow, monotonous and lacking ingenuity. The misidentification of the boundary may be attributed to archaic work methods and practices, since no computer aids or digital data sources are used during the data analysis and interpretation phase. Similarly, the field surveys of the administrative area boundaries as performed by professional land surveyors do not comply with the high quality standards normally associated with professionally sound land surveys. The poor quality of these surveys is due to a lack of minimum specifications or standards for GPS surveys, which inevitably results in the execution of undesirable survey practices that cause the serious degradation in the quality of such surveys. Even the offices of the Surveyors-General have no formal prescripts as to what constitutes acceptable survey practice with respect to GPS surveys.

The second primary objective of this research was to design and field-test a more efficient, practical and legally viable alternative method for identifying and surveying communal administrative area boundaries than the methods that are employed by the Surveyors-General. Although this objective could not be achieved in its entirety due to time constraints, sufficient proof in the desktop study was presented to indicate that the introduction of modern survey equipment and techniques (vide Louw (2004) with respect to the use of digital orthophotos as a viable alternative to traditional survey methods) can lead to substantial productivity gains compared to the equipment and techniques that are presently being used in the Administrative Area Boundary Project.

The third and also a secondary objective of this research was to establish whether the surveyed administrative area boundaries in terms of the *de jure* surveys are considered legitimate in the eyes of the relevant communities. Although the surveys were legally approved in terms of the Land Survey Act, both case studies showed outright rejection by the relevant communities of the demarcation and survey of the boundaries as performed by the DLA-appointed professional land surveyors.

In conclusion it may be said that land administration is arguably the most expensive part of the entire land management process (having administration, policy and an information infrastructure as its principal components). Land administration as a sub-component of the land management process includes land tenure activities such as land adjudication, land demarcation, surveying and deeds registration (Enemark, Williamson and Wallace 2005:56). The survey costs alone could well prove to be higher than the value of the rural property being surveyed. The execution of administrative area surveys by the DLA acts as a precursor to the land rights enquiry process stipulated by the CLaRA. This creates a dilemma in that the administrative area boundary surveys are first approved in terms of the formal cadastre before representations from communities in terms of these boundaries are considered. Due to the considerable cost of land administration, the recurring costs for the correction of errors by means of subdivisional surveys will also be high. As it stands, the land administration processes of survey and deeds registration are not wholly integrated, and are executed independent and as auxiliaries to the processes that are stipulated in CLaRA. This lack of integration creates tremendous inefficiencies in terms of economies of scale.

Barry and Fourie (2001:1) are of the opinion that integration problems are often a result of the implementation of cadastral systems, or elements of cadastral systems such as titling programmes, in order to formalise property programmes in developing countries without fully understanding the endemic, situation-specific complexities involved. Barry and Fourie (2001:8) further add that "[i]n rapidly changing situations and situations in which transforming land tenure and introducing cadastral systems involves substantial social change, attempts to reduce land tenure management to a few simple outcomes is naïve and likely to result in outcomes that the formulators of such strategies are incapable of contemplating." Instead of rashly applying conventional, time-honoured tenure formalisation procedures, they recommend the introduction of an action-oriented, soft-system methodology that uses processes of modelling, iteration, reflection and negotiation to interpret and consolidate different perceptions, assumptions and points of view of different people who are involved in a problem situation in a cycle of learning. Barry and Fourie (2001) therefore clearly support a bottom-up approach to tenure formalisation instead of the traditional top-down approach that is currently being used in the identification and survey of administrative area boundaries.

In view of the research findings and conclusions, this author recommends the following:

1 The survey and registration processes should be wholly integrated with the CLaRA processes in order to eradicate organisational inefficiencies and attain the common goals of all the stakeholders;

2 A bottom-up approach involving greater participation by and consultation with local communities be followed not only to identify and to survey administrative area boundaries, but also to establish the registerable unit of "community" (tribe, group, household or individual);

3 Land information management tools (such as participatory mapping tools) be developed and implemented to assist in community participation forums such as the land rights enquiry process;

4 Similarly, proper digital data acquisition, processing and analysis tools be acquired by the Land Reform Division in the office of the Surveyor-General in Cape Town in order to replace or upgrade their outdated equipment and to modernise their work methods;

5 Proper national standards or minimum specifications for the execution of GPS surveys be established by the Survey Regulations Board to enhance the integrity and quality of all GPS-related surveys;

6 The Chief Surveyor-General formulates minimum procedural standards for the presentation of GPS surveys to be submitted for examination and approval. Proper standards will enable future land surveyors to reconstruct their surveys based on the survey evidence contained in the original administrative area boundary surveys.

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Appendix 1

Interview : 20th June 2005

Mr. Hendrik van Zyl (Deputy Surveyor-General: Cape Town)

Mr. Fezile Flatela (Assistant-Director: Land Reform Section)

Mr. Chris Esterhuizen (Chief Technician: Land Reform Section)

1 How many Administrative Areas (AA's) are there in total in the Eastern Cape Province?

Answer: 1054 AA's in total

comprising: Transkei 844 (183 previously surveyed, 118 recently surveyed, 543 unsurveyed)

Ciskei 210 (198 previously surveyed, 12 unsurveyed).

2 When did the project to identify state assets and AA boundaries within the Eastern Cape begin?

Answer: January 2004

3 Why are AA boundaries being surveyed?

Answer: Most AA boundaries have never been surveyed before.

To frame diagrams containing accurate areas of AA's.

Makes it easier to perform subsequent subdivisions on the land.

To survey state domestic facilities (SDF's) in relation to these boundaries.

4 Whose budget is being used to survey state assets? The DLA or PWD?

Answer: DLA's Public Land Support Services Directorate.

5 Whose budget is being used to survey administrative area boundaries? The DLA or PWD?

Answer: DLA's Public Land Support Services Directorate.

6 What is the estimated total cost for the survey of all Eastern Cape AA's?

Answer: R52 157 500

comprising : R37 015 000 for AA's (R55000 x 673)

R15 142 500 for SDF's (R4500 x 673 x 5)

7 How many AA's have gone out on tender?

Answer: Approximately 120 thus far.

Estimated about 100 per year.

8 How many tenders have been allocated to tenderers thus far?

Answer: 23 tenders (approximate 5 AA's per tender)

9 What is the total amount of the tenders that have been allocated to date?

Answer: R4.5 million

10 How many AA's have been surveyed to date?

Answer: 118 AA's

11 How many surveys of AA's have been approved by the Surveyor-General to date?

Answer: Almost all of them.

12 How many of the approved surveys are affected by boundary disputes?

Answer: Only 4 or 5 official disputes in total thus far.

13 Was any prior survey performed in order to determine how many communities will benefit directly from the survey of AA boundaries?

Answer: Yes, a PTO audit as well as a SDF audit.

If yes (under question 13):

14.1 How many communities were consulted?

Answer: Not sure.

14.2 Of the communities that were consulted, how many of them indicated that they will stand to benefit directly from the survey of promulgated AA boundaries?

Answer: Not determined.

14.3 Of the communities that were consulted, how many boundary disputes were raised during consultation sessions by such communities?

Answer: Not known.

14.4 Of the communities that were consulted, how many indicated that they disagree with the boundary descriptions of the AA's as promulgated?

Answer: Not determined.

15 What is the projected cost of resurveys that need to be performed as a result of both existing and impending boundary disputes that might emerge after the initial survey of AA boundaries have been completed?

Answer: Cannot be determined or estimated now, since these will only be performed at a later phase of the project.

Department of Land Affairs

Eastern Cape Province

Administrative Area Boundaries Project

Progress Report

28th November 2005

ADMIN. AREAS - UNSURVEYED

TOTAL A/A's = 323 | A/A's LODGED = 120 | A/A's WITH SDF's = 90
A/A's TENDER = 141 | A/A's UNDER EXAM. = 47 | TOTAL SDF's = 426
A/A's APPROVED = 73 | A/A's OUTSTANDING = 21 | AVERAGE SDF's per A/A = 4.73

NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
1	Xhora		Hobeni	27		Hobeni	No	29	5528/1999	1999-04-11		G Palmer
2	Xhora		Cwebe	25		Cwebe	No	30	5529/1999	1999-04-12		G Palmer
3	Gatyana		Mpume			Mpume	No	289	5532/1999	1999-04-13		G Palmer
4	Gatyana		Ngoma	4		Ngoma	No	290	5533/1999	1999-04-14		G Palmer
5	Gatyana		Ntlangano			Ntlangano	No	291	5534/1999	1999-04-15		G Palmer
6	Gatyana		Mendwane			Mendwane	No	292	3335/1999	1999-04-16		G Palmer
7	Gatyana		Ntubeni			Ntubeni	No	294	5537/1999	1999-04-17		G Palmer
8	Herschel		Wittenbergen	1		Wittenbergen	No	78	1630/2004	2004-12-05		S P de Waal
9	Herschel		Tugela	2		Tugela	No	77	1629/2004	2004-12-05		S P de Waal
10	Herschel		Madakana	3		Madakana	No	73	1625/2004	2004-12-05		S P de Waal
11	Herschel		Khiba	4		Khiba	No	71	1623/2004	2004-12-05		S P de Waal
12	Herschel		Bamboespruit	5		Bamboespruit	No	66	1618/2004	2004-12-05		S P de Waal
13	Herschel		Josanas Hoek	6		Josanas Hoek	No	70	1622/2004	2004-12-05	1	S P de Waal
14	Herschel		Sterkspruit	8		Sterkspruit	No	75	1627/2004	2004-12-05		S P de Waal
15	Herschel		Kromspruit	9		Kromspruit	No	72	1624/2004	2004-12-05		S P de Waal
16	Herschel		Tynindini	11		Tynindini	No	79	6593/2004	2005-01-04		S P de Waal
17	Herschel		Ndofela	18		Ndofela	No	74	1626/2004	2004-12-05	6	S P de Waal
18	Herschel		Governors Drift	19		Governors Drift	No	69	1621/2004	2004-12-05	3	S P de Waal
19	Herschel		Thabalesoba	20		Thabalesoba	No	81	1628/2004	2004-12-05	4	S P de Waal
20	Bizana		Amadiba	21	BIZANA/21	Amadiba	No	39	2812/2004	2004-08-16		MEH Surveys
21	Bizana		Amampise	22	BIZANA/22	Amampise	No	40	2813/2004	2004-08-16		MEH Surveys
22	Bizana		Umkolora	20	BIZANA/20	Umkolora	No	41	2509/2004	2004-05-08		I Hansen
23	Bizana		Imizizi	16	BIZANA/16	Imizizi	No	55	3687/2004	2004-04-11		Nzelenzele, P & M
24	Bizana		Umnyaka	17	BIZANA/17	Umnyaka	No	56	3688/2004	2004-08-20		Nzelenzele, P & M
25	Bizana		Hlolweni	18	BIZANA/18	Hlolweni	No	57	3689/2004	2004-08-20		Nzelenzele, P & M
26	Bizana		Etyeni	19	BIZANA/19	Etyeni	No	58	3690/2004	2004-08-20		Nzelenzele, P & M
27	Siphaqeni		Siphaqeni	2	SIPHAQ/2	Siphaqeni	No	37	3086/2004	2004-06-09		CGIS/Stemela
28	Siphaqeni		Twazi	13	SIPHAQ/13	Twazi	No	38	3087/2004	2004-06-09		CGIS/Stemela
29	Siphaqeni		Qogo	14	SIPHAQ/14	Qogo	No	39	3253/2004	2004-10-14		L Gqiba
30	Siphaqeni		Mxopo	15	SIPHAQ/15	Mxopo	No	40	3254/2004	2004-10-14		L Gqiba
31	Siphaqeni		Umsikaba	19	SIPHAQ19	Umsikaba	No	41	3255/2004	2004-10-14		S M Cossie
32	Siphaqeni		Hlwahlwazi	22	SIPHAQ/22	Hlwahlwazi	No	42	3256/2004	2004-10-14		S M Cossie
33	Siphaqeni		Upper Mketengeni	9	SIPHAQ/9	Upper Mketengeni	No	43	4911/2004	2004-10-17		A A Reabow
34	Siphaqeni		Lower Mketengeni	9A	SIPHAQ/9A	Lower Mketengeni	No	44	4910/2004	2004-10-17		A A Reabow
35	Siphaqeni		Qasa	10	SIPHAQ/10	Qasa	No	45	4909/2004	2004-10-17		A A Reabow
36	Siphaqeni		Ndimakude	12	SIPHAQ/12	Ndimakude	No	46	4005/2004	2004-10-26	4	M M Cokwana

NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
37	Siphaqeni		Mbadango	19A	SIPHAQ/19A	Mbadango	No	47	4011/2004	2004-10-26	6	M M Cokwana
38	Bizana	A	Isikelo	1	BIZANA/1	Isikelo	No	42	1325/2005	2004-10-26	18	D A Lewis
39	Bizana	A	Izinini	11	BIZANA/11	Izinini	No	43	1285/2005	2005-09-06	5	D A Lewis
40	Bizana	A	Isisele	12	BIZANA/12	Isisele	No	44	1289/2005	2005-09-06	3	D A Lewis
41	Bizana	A	Intshamati	13	BIZANA/13	Intshamati	No	45	1294/2005	2005-09-06	4	D A Lewis
42	Bizana	A	Amanikwe	14	BIZANA/14	Amanikwe	No	46	1119/2005	2005-03-06	7	D A Lewis
43	Bizana	A	Abatshwawu	15	BIZANA/15	Abatshwawu	No	47	1121/2005	2005-03-06	1	D A Lewis
44	Bizana	B	Amandela	10	BIZANA/10	Amandela	No	48	1616/2005	2005-08-02	5	S Cossie
45	Bizana	B	Entsimbini	7	BIZANA/7	Entsimbini	No	49	1622/2005	2005-08-02	10	S Cossie
46	Bizana	B	Esikumbeni	3	BIZANA/3	Esikumbeni	No	50	1633/2005	2005-08-02	4	S Cossie
47	Bizana	B	Emonti	8	BIZANA/8	Emonti	No	51	1638/2005	2005-08-08	9	S Cossie
48	Bizana	B	Amangutyana	6	BIZANA/6	Amangutyana	No	52	1648/2005	2005-08-02	11	S Cossie
49	Bizana	C	Amakanyayo	23	BIZANA/23	Amakanyayo	No	53	1013/2005	2005-09-12	4	CGIS/Stemela
50	Bizana	C	Amandengane	9	BIZANA/9	Amandengane	No	54	1018/2005	2005-09-12	4	CGIS/Stemela
51	Lusikisiki	C	Ngqusa Hill	4	LUSIKI/4	Ngqusa Hill	No	85	1024/2005	2005-09-12	4	CGIS/Stemela
52	Lusikisiki	C	Mtentu	1	LUSIKI/1	Mtentu	No	86	1029/2005	2005-09-12	3	CGIS/Stemela
53	Lusikisiki	C	Mtshayelo	19	LUSIKI/19	Mtshayelo	No	87	1033/2005	2005-09-12	1	CGIS/Stemela
54	Lusikisiki	C	The Vlei	5	LUSIKI/5	The Vlei	No	88	1035/2005	2005-09-12	6	CGIS/Stemela
55	Lusikisiki	D	Lambazi	32	LUSIKI/32	Lambazi	No	89	3623/2005		15	MEH Surveys
56	Lusikisiki	D	Umsikaba	31	LUSIKI/31	Umsikaba	No	90	3640/2005		0	MEH Surveys
57	Lusikisiki	D	Mateku	30	LUSIKI/30	Mateku	No	91	3641/2005		3	MEH Surveys
58	Lusikisiki	D	Lower Hlabati	38	LUSIKI/38	Lower Hlabati	No	92	3648/2005		4	MEH Surveys
59	Lusikisiki	D	Mbotyi	33	LUSIKI/33	Mbotyi	No	93	3650/2005		1	MEH Surveys
60	Lusikisiki	D	Upper Hlabati	39	LUSIKI/39	Upper Hlabati	No	94	3652/2005		5	MEH Surveys
61	Lusikisiki	D	Gosa Forest	26	LUSIKI/26	Gosa Forest	No	101	3658/2005		4	MEH Surveys
62	Lusikisiki	E	Goqwani	15	LUSIKI/15	Goqwani	No	95				H P Reabouw
63	Lusikisiki	E	Umzimhlava	23	LUSIKI/23	Umzimhlava	No	96				H P Reabouw
64	Lusikisiki	E	Lower Ntafufu	35	LUSIKI/35	Lower Ntafufu	No	97				H P Reabouw
65	Lusikisiki	E	Ntambalala	41	LUSIKI/41	Ntambalala	No	98				H P Reabouw
66	Lusikisiki	E	Mzimvubu	37	LUSIKI/37		No	99				H P Reabouw
67	Lusikisiki	E	Ntafufu	36	LUSIKI/36	Ntafufu	No	100				H P Reabouw
68	Lusikisiki	E	Gqubeni	34	LUSIKI/34	Gqubeni	No	102				H P Reabouw
69	Bizana	F	Izilangwe	4	BIZANA/4	Izilangwe	No	60	1743/2005	2005-09-12	4	M Cokwana
70	Bizana	F	Amatshangase	5	BIZANA/5	Amatshangase	No	61	1744/2005	2005-09-12	1	M Cokwana
71	Bizana	F	Enkantolo	2	BIZANA/2	Enkantolo	No	59	1742/2005	2005-09-12	8	M Cokwana
72	Siphaqeni	F	Ntashangase	11	SIPHAQ/11	Ntashangase	No	63	1745/2005	2005-09-12	12	M Cokwana
73	Siphaqeni	F	Bipa	5	SIPHAQ/5	Bipa	No	48	1741/2005	2005-09-12	2	M Cokwana
74	Siphaqeni	G	Tonti	18	SIPHAQ/18	Tonti	No	53	1684/2005		1	M Cokwana
75	Siphaqeni	G	Maramzi	1	SIPHAQ/1	Maramzi	No	61	1696/2005		2	M Cokwana

NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
76	Siphaqeni	G	Emfundisweni	3	SIPHAQ/3	Emfundisweni	No	59	1686/2005		8	M Cokwana
77	Siphaqeni	G	Bukuveni	6A	SIPHAQ/6A	Bukuveni	No	50	1678/2005		5	M Cokwana
78	Siphaqeni	G	Mabofu	21	SIPHAQ/21	Mabofu	No	63	1695/2005		1	M Cokwana
79	Siphaqeni	G	Ntshangase	21	SIPHAQ/21	Ntshangase	No	63	1745/2005		12	M Cokwana
80	Siphaqeni	H	Nqabeni	7	SIPHAQ/7	Nqabeni	No	51	1605/2005	2005-08-30	3	S Cossie
81	Siphaqeni	H	Ntlenzi	6	SIPHAQ/6	Ntlenzi	No	49	1593/2005	2005-08-30	11	S Cossie
82	Siphaqeni	H	Tekwini	23	SIPHAQ/23	Tekwini	No	55	1612/2005	2005-08-30	3	S Cossie
83	Siphaqeni	H	Bala	8	SIPHAQ/8	Bala	No	52	1609/2005	2005-08-30	2	S Cossie
84	Lusikisiki	J	Ramzi	2	LUSIKI/2	Ramzi	No	103	1047/2005	2005-09-22	5	CGIS/Stemela
85	Lusikisiki	J	Pumlo	28	LUSIKI/28	Pumlo	No	123	1064/2005	2005-09-22	6	CGIS/Stemela
86	Lusikisiki	J	Malangeni	29A	LUSIKI/29A	Malangeni	No	121	1058/2005	2005-09-22	1	CGIS/Stemela
87	Lusikisiki	J	Nkunzimbini	29	LUSIKI/29	Nkunzimbini	No	105	1056/2005	2005-09-22	2	CGIS/Stemela
88	Lusikisiki	J	Teweleni	7	LUSIKI/7	Teweleni	No	105	1050/2005	2005-09-22	2	CGIS/Stemela
89	Lusikisiki	K	Mbudu	24	LUSIKI/24	Mbudu	No	126				S Vena
90	Lusikisiki	K	Mevana	24A	LUSIKI/24A	Mevana	No	127				S Vena
91	Lusikisiki	K	Dubana	24B	LUSIKI/24B	Dubana	No	125				S Vena
92	Lusikisiki	K	Hombe	29B	LUSIKI/29B	Hombe	No	122				S Vena
93	Lusikisiki	K	Lower Xura	27A	LUSIKI/27A	Lower Xura	No	119				S Vena
94	Lusikisiki	K	Xura	27	LUSIKI/27A	Xura	No	132				S Vena
95	Lusikisiki	L	Mhlungu	6	LUSIKI/6	Mhlungu	No	104				Z Gqiba
96	Lusikisiki	L	Tshonya	8	LUSIKI/8	Tshonya	No	106				Z Gqiba
97	Lusikisiki	L	Bukazi	9	LUSIKI/9	Bukazi	No	107				Z Gqiba
98	Lusikisiki	L	Xurana	18	LUSIKI/18	Xurana	No	115				Z Gqiba
99	Lusikisiki	L	Zalo	20	LUSIKI/20	Zalo	No	116				Z Gqiba
100	Lusikisiki	M	Zalo Heights	13	LUSIKI/13	Zalo Heights	No	111	4179/2005	2005-09-22	4	S Cossie
101	Lusikisiki	M	Nyati	14	LUSIKI/14	Nyati	No	112	4183/2005	2005-09-22	5	S Cossie
102	Lusikisiki	M	Mbomvini	16	LUSIKI/16	Mbomvini	No	114	4189/2005	2005-09-22	7	S Cossie
103	Lusikisiki	M	Ngobozana	21	LUSIKI/21	Ngobozana	No	117	4197/2005	2005-09-22	4	S Cossie
104	Lusikisiki	M	Nyosana	22	LUSIKI/22	Nyosana	No	118	4202/2005	2005-09-22	4	S Cossie
105	Lusikisiki	N	Mantlani	10	LUSIKI/10	Mantlani	No	124	4243/2005		4	S Cossie
106	Lusikisiki	N	Mfinizo	17	LUSIKI/17	Mfinizo	No	128	4248/2005		7	S Cossie
107	Siphaqeni	N	Nkozo	16	SIPHAQ/16	Nkozo	No	57	4232/2005		6	S Cossie
108	Siphaqeni	N	Mantlane	17	SIPHAQ/17	Mantlane	No	58	4339/2005		3	S Cossie
109	Lusikisiki	P	Gcuda	10A	LUSIKI/10A	Gcuda	No	108	4207/2005		4	S Cossie
110	Lusikisiki	P	Ntontela	11	LUSIKI/11	Ntontela	No	109	4208/2005		7	S Cossie
111	Lusikisiki	P	Lutshaya	12	LUSIKI/12	Lutshaya	No	110	4209/2005		6	S Cossie
112	Lusikisiki	P	Ngcoya	14A	LUSIKI/14A	Ngcoya	No	113	4210/2005		4	S Cossie
113	Umzimvubu	Q	Nomandi	1	UMZIMV/1	Nomandi	No	38	5249/2005		7	NPM MHP JV
114	Umzimvubu	Q	Majola-Lundini	6	UMZIMV/6	Majola-Lundini	No	34	5232/2005		8	NPM MHP JV

NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
115	Umzimvubu	Q	Bokoda		UMZIMV/7	Bokoda	No	36	5241/2005		7	NPM MHP JV
116	Umzimvubu	Q	Mvinjelwa	8	UMZIMV/8	Mvinjelwa	No	40	5257/2005		5	NPM MHP JV
117	Umzimvubu	R	Tshubela	2	UMZIMV/2	Tshubela	No	44	4864/2005		1	CGIS/Stemela
118	Umzimvubu	R	Mqakama	3	UMZIMV/3	Mqakama	No	35	4851/2005		2	CGIS/Stemela
119	Umzimvubu	R	Zinonga	9	UMZIMV/9	Zinonga	No	37	4854/2005		7	CGIS/Stemela
120	Umzimvubu	R	Siposo	10	UMZIMV/10	Siposo	No	41	4863/2005		0	CGIS/Stemela
121	Umzimvubu	S	Mtshubandaba	4	UMZIMV/4	Mtshubandaba	No	39	4916/2005		4	CGIS/Stemela
122	Umzimvubu	S	Makotsheni,Manqina	11	UMZIMV/11	Makotsheni,Manqina	No	42	4921/2005		3	CGIS/Stemela
123	Umzimvubu	S	Gxumasa	12	UMZIMV/12	Gxumasa	No	33	4909/2005		6	CGIS/Stemela
124	Umzimvubu	S	Lujecwini,Ndlumben	13	UMZIMV/13	Lujecwini,Ndlumbeni	No	47	4925/2005		3	CGIS/Stemela
125	Umzimvubu	T	Gomolo	14	UMZIMV/14	Gomolo	No	43				NPM MHP JV
126	Umzimvubu	T	Magingqi	15	UMZIMV/15	Magingqi	No	46				NPM MHP JV
127	Umzimvubu	T	Qandu	16	UMZIMV/16	Qandu	No	45				NPM MHP JV
128	Umzimkulu	U	iNsikeni	3	UMZIMK/3	iNsikeni	No	514	4874/2005		1	Cokwana
129	Umzimkulu	U	New Intsikeni	4	UMZIMK/4	New Intsikeni	No	515	4885/2005		2	Cokwana
130	Umzimkulu	U	Malenge	5	UMZIMK/5	Malenge	No	530	4894/2005		4	Cokwana
131	Umzimkulu	U	Gungululu	6	UMZIMK/6	Gungululu	No	519	4888/2005		5	Cokwana
132	Umzimkulu	V	Dumakude	7	UMZIMK/7	Dumakude	No	516	5670/2005		11	Lewis
133	Umzimkulu	V	Cabane	8	UMZIMK/8	Cabane	No	513	5561/2005		8	Lewis
134	Umzimkulu	V	Intsikeni	9	UMZIMK/9	Intsikeni	No	523	5685/2005		7	Lewis
135	Umzimkulu	V	Imvubukazi	10	UMZIMK/10	Imvubukazi	No	533	5722/2005		4	Lewis
136	Umzimkulu	V	Cancele	11	UMZIMK/11	Cancele	No	520	5682/2005		2	Lewis
137	Umzimkulu	W	Indhlozana	12	UMZIMK/12	Indhlozana	No	522	5531/2005		5	CGIS/Stemela
138	Umzimkulu	W	Nomeva	13	UMZIMK/13	Nomeva	No	521	5526/2005		4	CGIS/Stemela
139	Umzimkulu	W	Ndzimankulu	15	UMZIMK/15	Ndzimankulu	No	527	5543/2005		2	CGIS/Stemela
140	Umzimkulu	W	Madwala	16	UMZIMK/16	Madwala	No	528	5546/2005		2	CGIS/Stemela
141	Umzimkulu	W	Ibisa	17	UMZIMK/17	Ibisa	No	524	5537/2005		5	CGIS/Stemela
142	Siphaqeni	Y	Xopozo	4	SIPHAQ/4	Xopozo	No	56				
143	Siphaqeni	Y	Lutulini	20	SIPHAQ/20	Lutulini	No	54				
144	Libode	AA	Mbalisweni	25	LIBODE/	Mbalisweni	No	59				
145	Libode	AA	Ncaloshe	26	LIBODE/26	Ncaloshe	No	60				
146	Libode	AA	Kwam	27	LIBODE/27	Kwam	No	55				
147	Libode	AA	Endwe	28	LIBODE/28	Endwe	No	54				
148	Libode	AA	Nogaya	29	LIBODE/29	Nogaya	No	53				
149	Libode	BB	Ezinkumbini	3	LIBODE/3	Ezinkumbini	No	35				
150	Libode	BB	Mhlanganiso	4	LIBODE/4	Mhlanganiso	No	32				
151	Libode	BB	Coza	6	LIBODE/6	Coza	No	56				
152	Libode	BB	Mtombi	15	LIBODE/15	Mtombi	No	36				
153	Libode	BB	Mgaqweni	16	LIBODE/16	Mgaqweni	No	43				

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NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
154	Libode	CC	Marubeni	13	LIBODE/13	Marubeni	No	52				
155	Libode	CC	Mboboleni	14	LIBODE/14	Mboboleni	No	46				
156	Libode	CC	Lukuni	17	LIBODE/17	Lukuni	No	49				
157	Libode	CC	Mkankato	23	LIBODE/23	Mkankato	No	44				
158	Libode	CC	Maqingeni	24	LIBODE/24	Maqingeni	No	45				
159	Libode	DD	Zibungu	18	LIBODE/18	Zibungu	No	47				
160	Libode	DD	Merana	19	LIBODE/19	Merana	No	33				
161	Libode	DD	Ecibeni	20	LIBODE/20	Ecibeni	No	40				
162	Libode	DD	Umgazi	21	LIBODE/21	Umgazi	No	41				
163	Libode	DD	Mgwenyana	22	LIBODE/22	Mgwenyana	No	42				
164	Libode	EE	Mdlankomo	1	LIBODE/1	Mdlankomo	No	50				
165	Libode	EE	Nyandeni	2	LIBODE/2	Nyandeni	No	51				
166	Libode	EE	Weyi	5	LIBODE/5	Weyi	No	57				
167	Libode	EE	Ncolora	7	LIBODE/7	Ncolora	No	58				
168	Libode	EE	Zandukwana	8	LIBODE/8	Zandukwana	No	37				
169	Libode	FF	Sibangweni	9	LIBODE/9	Sibangweni	No	38				
170	Libode	FF	Ncambedlana	10	LIBODE/10	Ncambedlana	No	48				
171	Libode	FF	Zitatela	11	LIBODE/11	Zitatela	No	39				
172	Libode	FF	Corana	12	LIBODE/12	Corana	No	34				
173	Ngqeleni	FF	Ndonyeni	10	NGQEL/10	Ndonyeni	No	66				
174	Ngqeleni	GG	Masamini	11	NGQEL/11	Masamini	No	63				
175	Ngqeleni	GG	Amafini	12	NGQEL/12	Amafini	No	60				
176	Ngqeleni	GG	Ndunkunyini	16	NGQEL/16	Ndunkunyini	No	59				
177	Ngqeleni	GG	Maqanyini	17	NGQEL/17	Maqanyini	No	74				
178	Ngqeleni	GG	Mampondomosini	29	NGQEL/29	Mampondomosini	No	57				
179	Ngqeleni	HH	Manduleni	13	NGQEL/13	Manduleni	No	61				
180	Ngqeleni	HH	Ngojini	14	NGQEL/14	Ngojini	No	62				
181	Ngqeleni	HH	Bukweni	15	NGQEL/15	Bukweni	No	64				
182	Ngqeleni	HH	Ntsonyeni	30	NGQEL/30	Ntsonyeni	No	86				
183	Ngqeleni	HH	Ekulambeni	31	NGQEL/31	Ekulambeni	No	83				
184	Ngqeleni	JJ	Nkomandini	25	NGQEL/25	Nkomandini	No	71				
185	Ngqeleni	JJ	Butongweni	26	NGQEL/26	Butongweni	No	72				
186	Ngqeleni	JJ	Godini	27	NGQEL/27	Godini	No	76				
187	Ngqeleni	JJ	Zizi	28	NGQEL/28	Zizi	No	75				
188	Ngqeleni	JJ	Amandileni	33	NGQEL/33	Amandileni	No	84				
189	Ngqeleni	JJ	Noxova	42	NGQEL/42	Noxova	No	88				
190	Ngqeleni	KK	Lujecwini	1	NGQEL/1	Lujecwini	No	98				
191	Ngqeleni	KK	Buntingville	2	NGQEL/2	Buntingville	No	52				
192	Ngqeleni	KK	Ntsaka	3	NGQEL/3	Ntsaka	No	56				

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NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
193	Ngqeleni	KK	Mandlovini	4	NGQEL/4	Mandlovini	No	53				
194	Ngqeleni	KK	Edumasi	5	NGQEL/5	Edumasi	No	54				
195	Ngqeleni	KK	Esixolosini	8	NGQEL/8	Esixolosini	No	58				
196	Ngqeleni	KK	Mazangwa	9	NGQEL/9	Mazangwa	No	65				
197	Ngqeleni	LL	Mangwaneni	6	NGQEL/6	Mangwaneni	No	51				
198	Ngqeleni	LL	Mngqwangqweni	7	NGQEL/7	Mngqwangqweni	No	55				
199	Ngqeleni	LL	Bangi	18	NGQEL/18	Bangi	No	77				
200	Ngqeleni	LL	Malungu	19	NGQEL/19	Malungu	No	69				
201	Ngqeleni	LL	Nqanda	20A	NGQEL/20A	Nqanda	No	67				
202	Ngqeleni	LL	Nqanda	20B	NGQEL/20B	Nqanda	No	68				
203	Ngqeleni	MM	Lujizweni	21	NGQEL/21	Lujizweni	No	70				
204	Ngqeleni	MM	Mapalu	22	NGQEL/22	Mapalu	No	78				
205	Ngqeleni	MM	Tekweni	23	NGQEL/23	Tekweni	No	85				
206	Ngqeleni	MM	Nkantini	23A	NGQEL/23A	Nkantini	No	82				
207	Ngqeleni	MM	Mabomvana	44	NGQEL/44	Mabomvana	No	91				
208	Ngqeleni	NN	Mpoza	43	NGQEL/43	Mpoza	No	96				
209	Ngqeleni	NN	Mgojweni	44	NGQEL/44	Mgojweni	No	80				
210	Ngqeleni	NN	Mahamzini	45	NGQEL/45	Mahamzini	No	81				
211	Ngqeleni	NN	Ntsimbini	48	NGQEL/48	Ntsimbini	No	94				
212	Ngqeleni	NN	Matshezi	49	NGQEL/49	Matshezi	No	93				
213	Ngqeleni	PP	Lucingweni	41A	NGQEL/41A	Lucingweni	No	99				
214	Ngqeleni	PP	Mamolweni	46	NGQEL/46	Mamolweni	No	73				
215	Ngqeleni	PP	Ndungunyini	47	NGQEL/47	Ndungunyini	No	95				
216	Ngqeleni	PP	Makosi	50	NGQEL/50	Makosi	No	90				
217	Ngqeleni	QQ	Magoza	32	NGQEL/32	Magoza	No	87				
218	Ngqeleni	QQ	Ezindunini	34	NGQEL/34	Ezindunini	No	97				
219	Ngqeleni	QQ	Katini	35	NGQEL/35	Katini	No	92				
220	Ngqeleni	QQ	Cwele	38	NGQEL/38	Cwele	No	89				
221	Ngqeleni	QQ	Kanunu	41	NGQEL/41	Kanunu	No	100				
222	Mqanduli	5A	Qokollweni	1	MQAND/1	Qokollweni	No	62				
223	Mqanduli	5A	Jixini	2	MQAND/2	Jixini	No	63				
224	Mqanduli	5A	Magombe	3	MQAND/3	Magombe	No	64				
225	Mqanduli	5A	Nqwara	28	MQAND/28	Nqwara	No	51				
226	Mqanduli	5A	Cezu	29	MQAND/29	Cezu	No	39				
227	Mqanduli	5B	Hlabatshane	4	MQAND/4	Hlabatshane	No	65				
228	Mqanduli	5B	Ntlangaso	5A	MQAND/5A	Ntlangaso	No	51				
229	Mqanduli	5B	Qingqolo	6	MQAND/6	Qingqolo	No	57				
230	Mqanduli	5B	Mbozisa	7	MQAND/7	Mbozisa	No	67				
231	Mqanduli	5B	Zance	26	MQAND/26	Zance	No	35				

NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
232	Mqanduli	5C	Mahlamvu	24	MQAND/24	Mahlamvu	No	43				
233	Mqanduli	5C	Ncanisini	25	MQAND/25	Ncanisini	No	44				
234	Mqanduli	5C	Mgomanzi	27	MQAND/27	Mgomanzi	No	46				
235	Mqanduli	5C	Cacadu	30	MQAND/30	Cacadu	No	38				
236	Mqanduli	5C	Zibodhla	31	MQAND/31	Zibodhla	No	37				
237	Mqanduli	5D	Lwandlwana	8	MQAND/8	Lwandlwana	No	68				
238	Mqanduli	5D	Mncwasa	10	MQAND/10	Mncwasa	No	70				
239	Mqanduli	5D	Ntshitshana	12	MQAND/12	Ntshitshana	No	72				
240	Mqanduli	5D	Lucwecwe	20	MQAND/20	Lucwecwe	No	55				
241	Mqanduli	5D	Nqunqu	23	MQAND/23	Nqunqu	No	36				
242	Mqanduli	5E	Wilo	9	MQAND/9	Wilo	No	69				
243	Mqanduli	5E	Ncenduna	11	MQAND/11	Ncenduna	No	71				
244	Mqanduli	5E	Upper Mpako	13	MQAND/13	Upper Mpako	No	73				
245	Mqanduli	5E	Mgcwanguba	15	MQAND/15	Mgcwanguba	No	75				
246	Mqanduli	5E	Mapuzi	15A	MQAND/15A	Mapuzi	No	58				
247	Mqanduli	5F	Nenga	14	MQAND/14	Nenga	No	74				
248	Mqanduli	5F	Lower Mpako	16	MQAND/16	Lower Mpako	No	61				
249	Mqanduli	5F	Enzulweni	17	MQAND/17	Enzulweni	No	60				
250	Mqanduli	5F	Ntonjane	18	MQAND/18	Ntonjane	No	48				
251	Mqanduli	5F	Nenga	19	MQAND/19	Nenga	No	49				
252	Mqanduli	5G	Mahlungulu	21	MQAND/21	Mahlungulu	No	56				
253	Mqanduli	5G	Tungwane	22	MQAND/22	Tungwane	No	53				
254	Mqanduli	5G	Darabe	33	MQAND/33	Darabe	No	52				
255	Mqanduli	5G	Gengqe	42	MQAND/42	Gengqe	No	50				
256	Mqanduli	5G	Xorana	43	MQAND/43	Xorana	No	45				
257	Mqanduli	5H	Rara	34	MQAND/34	Rara	No	42				
258	Mqanduli	5H	Roza	35	MQAND/35	Roza	No	41				
259	Mqanduli	5H	Kwenxura	36	MQAND/36	Kwenxura	No	40				
260	Mqanduli	5H	Reletya	37	MQAND/37	Reletya	No	78				
261	Mqanduli	5H	Kalalo-Ncinase	38-39	MQAND/38	Kalalo-Ncinase	No	76				
262	Xhora	5J	Upper Mncwasa	15	Xhora/15	Upper Mncwasa	No	57				
263	Xhora	5J	Ntlansana	16	Xhora/16	Ntlansana	No	58				
264	Xhora	5J	Qinqana South	17	Xhora/17	Qinqana South	No	59				
265	Xhora	5J	Qinqana North	19	Xhora/19	Qinqana North	No	61				
266	Xhora	5J	Xora	20	Xhora/20	Xora	No	64				
267	Xhora	5K	Mbwaka	6	Xhora/6	Mbwaka	No	53				
268	Xhora	5K	Bafazi	12	Xhora/12	Bafazi	No	56				
269	Xhora	5K	Nkwalini	13	Xhora/13	Nkwalini	No	45				
270	Xhora	5K	Bufumba	14	Xhora/14	Bufumba	No	55				

ADMIN. AREAS - UNSURVEYED

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NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
271	Xhora	5K	Mtshekelo East	18	Xhora/18	Mtshekelo East	No	60				
272	Xhora	5L	Mncwasa	1	Xhora/1	Mncwasa	No	38				
273	Xhora	5L	Mpame	2	Xhora/2	Mpame	No	39				
274	Xhora	5L	Sikolokota	5	Xhora/5	Sikolokota	No	54				
275	Xhora	5L	Mncwasa East	7	Xhora/7	Mncwasa East	No	40				
276	Xhora	5L	Mncwasa West	8	Xhora/8	Mncwasa West	No	41				
277	Xhora	5M	Sitimbili	3	Xhora/3	Sitimbili	No	73				
278	Xhora	5M	Xora Mouth	4	Xhora/4	Xora Mouth	No	42				
279	Xhora	5M	Xorana	9	Xhora/9	Xorana	No	72				
280	Xhora	5M	Mbutye	10	Xhora/10	Mbutye	No	44				
281	Xhora	5M	Mkatazo	11	Xhora/11	Mkatazo	No	46				
282	Xhora	5N	Ngqatyana	21	Xhora/21	Ngqatyana	No	62				
283	Xhora	5N	Gusi	22	Xhora/22	Gusi	No	47				
284	Xhora	5N	Nkanya	23	Xhora/23	Nkanya	No	48				
285	Xhora	5N	Qatywa	24	Xhora/24	Qatywa	No	43				
286	Xhora	5N	Upper Nthlonyane	31	Xhora/31	Upper Nthlonyane	No	63				
287	Xhora	5P	Shinira	32	Xhora/32	Shinira	No	64				
288	Xhora	5P	Mgazana	33	Xhora/33	Mgazana	No	66				
289	Xhora	5P	Dabane	34	Xhora/34	Dabane	No	67				
290	Xhora	5P	Xama	35	Xhora/35	Xama	No	68				
291	Xhora	5Q	Amakameso	28	Xhora/28	Amakameso	No	50				
292	Xhora	5Q	Kwelomtombe	29	Xhora/29	Kwelomtombe	No	51				
293	Xhora	5Q	Mbanyana	30	Xhora/30	Mbanyana	No	52				
294	Xhora	5Q	Sholora	36	Xhora/36	Sholora	No	69				
295	Xhora	5Q	Mcelwana	37	Xhora/37	Mcelwana	No	70				
296	Maxesibeni	5R	Brooks Nek	9	MAXES/9	Brooks Nek	No					
297	Maxesibeni	5R	Gugwini	10	MAXES/10	Gugwini	No					
298	Maxesibeni	5R	Dundee	11	MAXES/11	Dundee	No					
299	Maxesibeni	5R	Cabazana	19	MAXES/19	Cabazana	No					
300	Maxesibeni	5S	Betshwana	14	MAXES/14	Betshwana	No					
301	Maxesibeni	5S	Nzongiseni	22	MAXES/122	Nzongiseni	No					
302	Maxesibeni	5S	Dutyeni	23	MAXES/23	Dutyeni	No					
303	Maxesibeni	5S	Mnceba	24	MAXES/24	Mnceba	No					
304	Kwa-Bhaca	5T	Lubacweni	15	KWABHA/15	Lubacweni	No					
305	Tabankulu	5T	Umzimvubu	20	TABAN/20	Umzimvubu	No					
306	Tabankulu	5T	Mnceba	24	TABAN/24	Mnceba	No					
307	Tabankulu	5T	Ngwemnyama	25	TABAN/25	Ngwemnyama	No					
308	Kwa-Bhaca	5U	Mpendla	14	KWABHA/14	Mpendla	No					
309	Kwa-Bhaca	5U	Marwaqa	26	KWABHA/26	Marwaqa	No					

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NO.	ADMIN. DIST.	BLOCK	ADMIN. AREA	LOC. NO.	S.G. NUMBER	NEW DESIGNATION			Dgm. No.	Date	Portion	Surveyor
310	Kwa-Bhaca	5U	Ntshazi	27	KWABHA/27	Ntshazi	No					
311	Kwa-Bhaca	5U	Tshungwana	28	KWABHA/28	Tshungwana	No					
312	Kwa-Bhaca	5U	Mvuzi	35	KWABHA/35	Mvuzi	No					
313	Kwa-Bhaca	5V	Nxabaxa	31	KWABHA/31	Nxabaxa	No					
314	Kwa-Bhaca	5V	Lwandlana	32	KWABHA/32	Lwandlana	No					
315	Kwa-Bhaca	5V	Dangwana	33	KWABHA/33	Dangwana	No					
316	Kwa-Bhaca	5V	Toleni	34	KWABHA/34	Toleni	No					
317	Qumbu	5V	Ncolokini	22	QUMBU/22	Ncolokini	No					
318	Qumbu	5W	Lower Roza	1	QUMBU/1	Lower Roza	No					
319	Qumbu	5W	Balasi	3	QUMBU/3	Balasi	No					
320	Tsolo	5W	Sidwadweni	1	TSOLO/1	Sidwadweni	No					
321	Tsolo	5W	Xokonxa	2	TSOLO/2	Xokonxa	No					
322	Tsolo	5W	Mbokotwana	3	TSOLO/3	Mbokotwana	No					
323	Tsolo	5W	Gungululu	27	TSOLO/27	Gungululu	No					
324						0						
325						0						
326						0						
327						0						
						0						
						0						
						0						
						0						
						0						

Appendix 3

Land surveyor's report on his survey of the Intshamati Administrative Area boundary

.NZELENZELE, PRESTON & MEDCALF cc

2002/014459/23

PROFESSIONAL LAND SURVEYORS
TOWN AND REGIONAL PLANNERS
LAND-REFORM & GIS CONSULTANTS

Member of the South African Excellence Foundation

Our Ref: 02/269.survey report
Your Ref:
24 July 2004

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SURVEY REPORT

BIZANA AA16,17,18 & 19 PROCLAMATIONS
Situate in the MBIZANA Municipality
Administrative District of BIZANA

PURPOSE OF THE SURVEY

The purpose of the survey was to determine clearly the following administrative areas boundaries:

1. Imizizi (16) : FARM IMIZIZI No 56
2. Umnyaka (17) : THE FARM UMNYAKA No 56
3. Hlolweni (18) : FARM HLOLWENI No 57
4. Etyeni (19) : THE FARM ETYENI No 58

TRIG SYSTEM

The survey was connected to the trig system WG29 by using trig T74, T336, T307 and T80) by GPS survey. The entire survey was carried out by means of GPS survey equipment.

BOUNDARIES

To determine these boundaries, proclamations of 1056/1905 were used.

FARM IMIZIZI No 55 (AA16)

At this AA chief Zamukulunga provided us with Mr Dova Duka who was born in 1901 to help us with the boundary. The boundary is as the proclamation starting on the 'wagon road' (now replaced by a tar road) to its fork near Cavic's shop where line IND8-IND7 intersect the 'wagon road'. It then goes along the gravel road to a point where it intersect with the line IND6 – SUB1 and to IND5 which is an indicatory beacon to the source of Dengwana stream. It goes down with stream into Mbodla stream and to Mlumo stream where it then goes into Hlolweni stream. Down that stream to its junction with Umtamvuna stream. It then goes down the Umtamvana stream to a point where it bends to the south-westerly direction of the river which could not be determined because of boundary disputes in this area. But it then somehow crosses the road to Port Edward and into Zikhuna stream. Down that stream to its junction

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with Mzamba and up this stream to its junction with Ntlakwe and up the Ntlakwe to its source. (This area of conflict has been left for MEH surveys to resolve as this boundary forms part of their survey of FARM AMADIBA No 39). IND10 is an indicatory to this stream. SUB2 is point in the boundary and IND9 is an indicatory to the 'wagon road'. The chief was present on the day of survey.
This diagram has been framed from data from the surrounding diagrams.

THE FARM UMNYAKA No 56 (AA17)

Starting at IND11 which is an indicatory to the 'wagon road' to IND12 which is an indicactory to the stream, down the stream to Lungence, down that Lungence stream to Londobezi, down the Londobezi river to its junction with Umtamvuna river , down Umtamvana to its junction with Mlambondaba river, up the Mlambondaba river to its source at IND2 and over the nek to IND1, down the stream (Ndala river) to its junction with Mlumo river, up the Mlumo river into the Mbodla stream, up the Mbodla stream to the Dengwana stream, up the Dengwana to its source at IND5. It then goes to SUB6 and IND1 which is an indicatory beacon to the gravel road which is used as a boundary. Up this road to a point where line IND8 – IND7 intersects the gravel and the 'wagon road' (now a tar road) on the fork near Cavic's shop. It then takes the 'wagon road' to a point where line IND11 – IND12 intersects the wagon road.

The chief of AA17 had died who was the brother of chief Zamukulunga. It is then that Mr Dova Duka also showed us the boundary of AA17. The boundaries were confirmed by the wife of the late chief ,Mrs Mzize.

FARM HLOLWENI No 57 (AA18)

Chief Themba presented us with Mr B Ntshayise who was an acting chief in 1964 – 1965 for Hlolweni. Starting at the junction of Umtamvana with the Mlambondaba stream, the line goes up the stream to its source, through IND2 and over the neck to IND1 and down that stream (Ndala river) to its junction with Mlumo, down Mlumo to its junction with Hlolweni, down the Hlolweni to its junction with the Cwaka, up that stream to its source at IND4 and over the neck to IND3 which is a source to Bokwe stream, down the Bokwe to its source with Umtamvana and back to the first mentioned point.

THE FARM ETYENI No 58 (AA19)

The paramount chief Jongamampondo presented us with Mr B Ntshayise who is his counsellor. Starting at the junction of Umtamvuna with Bokwe it goes up the stream to IND3 to the source of Cwaka, down the Cwaka to its junction with the Hlolweni, down that stream to its junction with Umtamvuna and up that stream to the first mentioned point.

BEACONS

All beacons placed were section of iron standard.

EXCLUDED FIGURES

Farms 11, 12, 18 and 19 were surveyed in 1926 on the Ingeli system. WGS84 scales of trig beacons T6 [DS3130], T10 [DS3130], T12 [DS3029], T62 [DS3029] and T80 [DS3030] were used to transform the Ingele co-ordinates to WGS84. The Helmants transformation

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produced a standard deviation of 0,16m which was adadapted. The printout of the transformation is attached to this report.

Farms 10 and 17 were both surveyed on the Clarke 1880 trig system. WGS84 value of Trig 336 was used to derive a transformation of dy=32,50 and dx=292,84 which was used to transform the Clarke co-ordinates, to WGS84.

GENERAL

I was assisted with the survey by survey technician Thulani September.

....26/7/2004.....

M NZELENZELE (PLS 0456)
Professional Land Surveyor

DATE

Appendix 4

Land surveyor's report on his survey of the Etyeni Administrative Area boundary

REPORT ON SURVEY

PROFESSIONAL LAND SURVEYOR: D. A. Lewis

ASSISTANT: G Fountain, R Douthwaite, S Memela, A Mpinda

DATE: February, March 2005

SURVEY OF:

1. The Farm Izinini No. 43.
2. Portions 1 - 5 of The Farm Izinini No. 43 (Zinini, Gecelo, Guqa, Ntukayi and Ndunge Schools).
3. The Farm Isisile No. 44.
4. Portions 1 – 3 of The Farm Isisile No. 44 (Tsawana School, Tsawana Clinic, Jali School).
5. The Farm Intshamati No. 45:
6. Portions 1 – 4 of The Farm Intshamati No. 45 (Sontsele School, Mdela School, Ingwe College, Umhlanga School).

PURPOSE:

Implementation of letter of instruction dated 7 January 2005 from the Department of Land Affairs ref. DLA 65/02C (2004/05) to survey the above.

METHOD:

1. The Farm Izinini No. 43.
Beacon BZP and BZS (planted stones) were found and fixed. A Helmert Transformation using SR 3069/1934 and SR E 275/1999 and the values of beacons BZP and BZS was used to determine the values of missing beacons BZA, BZO, BZQ and BZR (refer to calc pages 109 and 110).

Refer to calc page 111 for the Data Comparison Sketch. Agreement is very good.

The Isikelo and Izinini Inkosi's pointed out II1, II2 and II3 as their common boundary. However, after survey of the three pegs, it was apparent that II1 relates to BFP, and that II3 relates to BFA. This was brought to the attention of the two Inkosi's and beacon II4 was placed in accordance with the description given in the Government Gazette. I am awaiting a Beacon Receipt in respect of this new boundary.

2...

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2. The Farm Isisile No. 44.
A meeting was held on 3 March which was attended by the Isisile and Izinini Inkosi's. The Intshamati Inkosi could not attend due to her being at University in Umtata.

Pegs IS1, IS2, IS3 and IS4 were placed in accordance with the advice othe above Inkosi's and Tribal elders. Refer to Inset 11 of the Working Plan. IS1 was not surveyed. These boundaries were to run from IS1 - TR62 – IS2 – IS3 and IS1 – TR62 – IS2 – IS4 A Beacon Receipt to this effect was signed by the two Inkosi's.

However, we were subsequently advised by a member of the Intshamati Tribal Authority that the boundaries which had been pointed out to us were incorrect. However, the Intshamati Authority were not able to show us the correct position of the boundaries without their Inkosi being present. Although two subsequent meetings were arranged, to which all Inkosi's were invited, the relevant individuals failed to attend. A third meeting was then arranged, which was only attended by the Intshamati Inkosi and tribal elders, who pointed out various boundary positions. Pegs IS5, IS6, IS7, IS8 and IS9 were thus placed. Subsequently, pegs IS5 to IS8 were accepted as beacons which correctly represent the description as given in the Government Gazettes.

The Intshamati Tribal Authority believe that a portion of land to the north of the Wagon Road is included in their area. This portion of land has been highlighted on the attached Plan which has been prepared by the Transkei Department of Agriculture and Forestry. I advised the Intshamati Tribal Authority that the portion of land in question could not be included in their area since it is not so defined in the Government Gazettes.

In view of the above, it was not possible to obtain the required signatures from any of the three Traditional Authorites. However, I am firmly of the conviction that the boundaries surveyed and shown on the three Diagrams are in accordance with the original Government Gazettes. If the Surveyor General is in agreement with this, please confirm this in writing in order that we may present this document to the Traditional Authorities in an effort to obtain the required signatures.

Insets 11 and 12.

EXCLUDED FIGURE:

A transformation was used to determine values for beacons 9A, 9B, 9C and 9D of The Farm Tsawana Trading Site No. 9. Refer to calc pages 107 and 108.

3. The Farm Intshamati No. 45.
On 4 March 2005, pegs IZN1 – IZN5 were placed to define the boundary between the Intshamati and Izinini Traditional Areas. No problems were encountered and the Beacon Receipt is attached.

Beacons INT1 – INT6 and DJM1 - DJM3 were adopted from our previous submission (Ph 1).

3...

4. State Domestic Use Portions 1 – 5 of The Farm Izinini No. 43, Portions 1 – 3 of The Farm Isisele No. 44 and Portions 1 – 4 of The Farm Intshamati No. 45.

In most cases, beacons were placed at the corner fence posts. In instances where the schools were not fenced, the principal and members of the Governing Body assisted in deciding the positions of the beacons. All beacons were fixed by GPS.

PLACED BEACONS:

All beacons (20mm iron pegs) which define the boundaries of the various Administrative Areas have been placed in concrete.
20mm iron pegs have been placed to define the subdivisions of the Farms. These have not been placed in concrete.

D. A. LEWIS.
PROFESSIONAL LAND SURVEYOR.

22 March 2005

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Appendix 5

GPS field survey reductions as performed by the author using Leica Geo Office software

Point Id	Latitude	Longitude	Coordinate class	Std. deviation lat		Std. deviation lon	Time
INSHAM1	30 49 3.074967 S	29 52 8.845739 E	MEAS	0.00		0.00	08/31/2005 10:13:15
INSHAM1	30 49 3.105075 S	29 52 8.870547 E	NAV	2.31	1.94		08/31/2005 10:13:15
INSHAM10	30 48 27.913062 S	29 52 53.804662 E	NAV	2.07	1.72		08/31/2005 14:30:11
INSHAM11	30 48 27.940884 S	29 52 53.758050 E	NAV	3.44	4.08		08/31/2005 15:00:43
INSHAM12	30 48 27.937518 S	29 52 53.762357 E	NAV	3.43	4.07		08/31/2005 15:00:59
INSHAM13	30 48 42.361825 S	29 52 59.644986 E	NAV	1.61	1.30		08/31/2005 15:58:16
INSHAM2	30 49 3.075000 S	29 52 8.845655 E	MEAS	0.00	0.00		08/31/2005 10:36:17
INSHAM2	30 49 3.110912 S	29 52 8.868065 E	NAV	3.17	2.63		08/31/2005 10:36:17
INSHAM3	30 48 55.465356 S	29 52 16.511561 E	MEAS	0.00	0.00		08/31/2005 10:50:12
INSHAM3	30 48 55.494225 S	29 52 16.548966 E	NAV	2.30	1.99		08/31/2005 10:50:12
INSHAM4	30 48 49.634145 S	29 52 21.179976 E	MEAS	0.00	0.00		08/31/2005 11:18:07
INSHAM4	30 48 49.612888 S	29 52 21.234212 E	NAV	2.45	1.69		08/31/2005 11:18:07
INSHAM5	30 48 47.967744 S	29 52 24.983126 E	MEAS	0.00	0.00		08/31/2005 11:49:52
INSHAM5	30 48 47.900510 S	29 52 25.051346 E	NAV	2.13	1.35		08/31/2005 11:49:52
INSHAM6	30 48 51.901403 S	29 52 35.315802 E	NAV	1.65	1.31		08/31/2005 12:29:15
INSHAM7	30 48 46.375970 S	29 52 31.289720 E	MEAS	0.00	0.00		08/31/2005 12:57:16
INSHAM7	30 48 46.300390 S	29 52 31.362650 E	NAV	1.40	1.24		08/31/2005 12:57:16
INSHAM8	30 48 45.045697 S	29 52 37.101251 E	MEAS	0.00	0.00		08/31/2005 13:31:13
INSHAM8	30 48 44.980894 S	29 52 37.182542 E	NAV	2.05	1.32		08/31/2005 13:31:13
INSHAM9	30 48 40.148314 S	29 52 40.352882 E	MEAS	0.00	0.00		08/31/2005 13:53:50
INSHAM9	30 48 40.102899 S	29 52 40.424822 E	NAV	2.15	1.28		08/31/2005 13:53:50
POINT00001	30 48 53.257222 S	29 52 49.939715 E	NAV	2.69	1.95		08/31/2005 09:43:32
TEMP0000_0000000	30 48 53.255198 S	29 52 49.936996 E	REF	2.83		2.04	08/31/2005 09:44:31
TEMP0000_0000000	30 48 53.255198 S	29 52 49.936996 E	NAV	2.83		2.04	08/31/2005 09:44:31

Intshamati_TrigNet.txt

Point Id.	Latitude	Longitude	Coord	class	Std.dev.lat	Std.dev.lon.	Time
INSHAM1	30 49 3.034868 S	29 52 8.884993 E		MEAS	0.00	0.00	08/31/2005 10:13:15
INSHAM1	30 49 3.105075 S	29 52 8.870547 E		NAV	2.31	1.94	08/31/2005 10:13:15
INSHAM10	30 48 27.954500 S	29 52 53.751357 E		MEAS	0.03	0.03	08/31/2005 14:59:47
INSHAM10	30 48 27.969158 S	29 52 53.783750 E		MEAS	0.00	0.00	08/31/2005 14:30:11
INSHAM10	30 48 27.913062 S	29 52 53.804662 E		NAV	2.07	1.72	08/31/2005 14:30:11
INSHAM11	30 48 27.947983 S	29 52 53.747214 E		MEAS	0.05	0.04	08/31/2005 15:00:43
INSHAM11	30 48 27.940884 S	29 52 53.758050 E		NAV	3.44	4.08	08/31/2005 15:00:43
INSHAM12	30 48 27.942602 S	29 52 53.747497 E		MEAS	0.06	0.05	08/31/2005 15:00:59
INSHAM12	30 48 27.937518 S	29 52 53.762357 E		NAV	3.43	4.07	08/31/2005 15:00:59
INSHAM13	30 48 42.375724 S	29 52 59.628650 E		MEAS	0.01	0.01	08/31/2005 15:58:16
INSHAM13	30 48 42.373328 S	29 52 59.645740 E		MEAS	0.00	0.00	08/31/2005 15:59:47
INSHAM13	30 48 42.361825 S	29 52 59.644986 E		NAV	1.61	1.30	08/31/2005 15:58:16
INSHAM2	30 49 3.064737 S	29 52 8.861100 E		MEAS	0.07	0.05	08/31/2005 10:36:17
INSHAM2	30 49 3.110912 S	29 52 8.868065 E		NAV	3.17	2.63	08/31/2005 10:36:17
INSHAM3	30 48 55.434187 S	29 52 16.563211 E		MEAS	0.00	0.00	08/31/2005 10:50:12
INSHAM3	30 48 55.427302 S	29 52 16.546014 E		MEAS	0.00	0.01	08/31/2005 10:59:47
INSHAM3	30 48 55.494225 S	29 52 16.548966 E		NAV	2.30	1.99	08/31/2005 10:50:12
INSHAM4	30 48 49.608933 S	29 52 21.212818 E		MEAS	0.00	0.00	08/31/2005 11:18:07
INSHAM4	30 48 49.612888 S	29 52 21.234212 E		NAV	2.45	1.69	08/31/2005 11:18:07
INSHAM5	30 48 47.931101 S	29 52 24.988489 E		MEAS	0.00	0.01	08/31/2005 11:59:47
INSHAM5	30 48 47.926218 S	29 52 25.022221 E		MEAS	0.00	0.00	08/31/2005 11:49:52
INSHAM5	30 48 47.900510 S	29 52 25.051346 E		NAV	2.13	1.35	08/31/2005 11:49:52
INSHAM6	30 48 51.954495 S	29 52 35.319303 E		MEAS	0.00	0.00	08/31/2005 12:29:15
INSHAM6	30 48 51.901403 S	29 52 35.315802 E		NAV	1.65	1.31	08/31/2005 12:29:15
INSHAM7	30 48 46.326236 S	29 52 31.325091 E		MEAS	0.00	0.00	08/31/2005 12:59:47
INSHAM7	30 48 46.358865 S	29 52 31.358483 E		MEAS	0.06	0.04	08/31/2005 12:57:16
INSHAM7	30 48 46.300390 S	29 52 31.362650 E		NAV	1.40	1.24	08/31/2005 12:57:16
INSHAM8	30 48 44.996932 S	29 52 37.136150 E		MEAS	0.00	0.00	08/31/2005 13:31:13
INSHAM8	30 48 44.980894 S	29 52 37.182542 E		NAV	2.05	1.32	08/31/2005 13:31:13
INSHAM9	30 48 40.080565 S	29 52 40.370068 E		MEAS	0.00	0.00	08/31/2005 13:59:47
INSHAM9	30 48 40.091250 S	29 52 40.367702 E		MEAS	0.01	0.01	08/31/2005 13:53:50
INSHAM9	30 48 40.102899 S	29 52 40.424822 E		NAV	2.15	1.28	08/31/2005 13:53:50
UMTATA	31 32 55.577838 S	28 40 21.020589 E		REF	0.00	0.00	08/31/2005 08:59:47
UMTATA	31 32 55.577838 S	28 40 21.020589 E		NAV	0.00	0.00	08/31/2005 08:59:47
UMTATA (2)	31 32 55.577838 S	28 40 21.020589 E		REF	0.00	0.00	08/31/2005 09:59:47
UMTATA (2)	31 32 55.577838 S	28 40 21.020589 E		NAV	0.00	0.00	08/31/2005 09:59:47

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 49 03.10507	29 52 08.87055	29	Insham1	-83164.847	3411067.327	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 55.49422	29 52 16.54897	29	Insham3	-83370.772	3410834.517	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 49.61289	29 52 21.23421	29	Insham4	-83496.726	3410654.356	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 47.90051	29 52 25.05135	29	Insham5	-83598.604	3410602.410	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 51.90140	29 52 35.31580	29	Insham6	-83870.488	3410727.764	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 46.30039	29 52 31.36265	29	Insham7	-83766.757	3410554.442	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 44.98089	29 52 37.18254	29	Insham8	-83921.780	3410515.016	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 44.98089	29 52 37.18254	29	Insham8	-83921.780	3410515.016	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo

	30 48 40.10290	29 52 40.42482	29	Insham9	-84009.147	3410365.460	29
WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 27.91306	29 52 53.80466	29	Insham10	-84367.776	3409992.836	29
WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 48 42.36182	29 52 59.64499	29	Insham13	-84519.519	3410439.052	29

Point Id	Latitude			Longitude			Coordinate class	Std. deviation lat	Std. deviation lon	Time
ETYENI6	30 54 15.431977 S			30 4 33.396285 E			MEAS	0.00	0.00	09/01/2005 15:22:26
ETYENI6	30 54 15.435802 S			30 4 33.392704 E			NAV	1.51	1.71	09/01/2005 15:22:26
ETYENI1	30 54 16.020312 S			30 4 20.087028 E			MEAS	0.00	0.00	09/01/2005 13:44:51
ETYENI1	30 54 16.009465 S			30 4 20.089218 E			NAV	1.76	1.16	09/01/2005 13:44:51
ETYENI3	30 54 14.974049 S			30 4 28.795530 E			MEAS	0.00	0.00	09/01/2005 14:36:27
ETYENI3	30 54 14.972253 S			30 4 28.809118 E			NAV	2.35	1.98	09/01/2005 14:57:15
ETYENI4	30 54 14.974272 S			30 4 28.795324 E			MEAS	0.00	0.00	09/01/2005 14:57:36
ETYENI4	30 54 14.972044 S			30 4 28.809343 E			NAV	2.34	1.97	09/01/2005 14:57:36
TEMP0000_0000000	30 55 10.384077 S			30 5 59.167346 E			NAV	2.00	1.93	09/01/2005 12:49:58
TEMP0000_2232241	30 54 14.974230 S			30 4 28.795351 E			MEAS	0.00	0.00	09/01/2005 14:57:51
TEMP0000_2232241	30 54 14.973394 S			30 4 28.809819 E			NAV	2.46	2.07	09/01/2005 14:57:51
TRIG309	30 55 10.380885 S			30 5 59.185925 E			REF	0.74	0.62	09/01/2005 12:51:45
TRIG309	30 55 10.380885 S			30 5 59.185925 E			NAV	0.74	0.62	09/01/2005 12:51:45

Chief Directorate : Surveys and Mapping

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 54 15.4358	30 04 33.3927	29	Etyeni6	-102862.454	3420858.913	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 54 14.97225	30 04 28.80912	29	Etyeni3	-102740.862	3420843.462	29

WGS84	Latitude	Longitude	Lo	Point	y	x	Lo
	30 54 16.00946	30 04 20.08922	29	Etyeni1	-102508.975	3420873.179	29

Appendix 6

Department of Land Affairs
Tender Specification Document

TENDER SPECIFICATION FOR THE SUPPLY OF DIAGRAMS OF ADMINISTRATIVE AREAS TO THE SURVEYOR-GENERAL: CAPE TOWN FOR REGISTRATION AT THE DEEDS OFFICE

DESCRIPTION	COMPLY YES/NO	PARAGRAPH REF. NO

SPECIFICATION

1.	**GENERAL**
	The Surveyor-General Cape Town is mandated to: • Approve diagrams and general plans in terms of the Land Survey Act 8 of 1997 • **Render support for the surveying of State Land and Land Reform services.**

1.2	**CONTENTS OF THIS SPECIFICATION**		
1.2.1	*Tenderers are specifically encouraged to ensure that the contents of this tender specification are brought to the attention of the professional and technical staff, employed within their organisation, to ensure a complete understanding of its requirements prior to the tenders being submitted.*	.....	....

2.	**SCOPE OF TENDER**		
2.1	The work required to fulfill this tender is the following: ▪ Cadastral Survey as indicated on the supplied provisional plan showing the proclaimed Administrative Area boundaries. ▪ Framing of diagrams/plans in accordance with the Land Survey Act 8 of 1997. ▪ Lodgment of diagrams/plans and records for approval, (in accordance with the Land Survey Act 8 of 1997,) with the Surveyor-General: Cape Town	.....	....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
2.2	**Surveys of the following Administrative Areas are required:** **BLOCK N** – LUSIKISIKI AND SIPHAQENI ADMINISTRATIVE DISTRICTS: PROVINCE OF THE EASTERN CAPE A. ADMINISTRATIVE AREA – MANTLANI No. 10 ADMINISTRATIVE DISTRICT LUSIKISIKI * (SG No. LUSIKI/10) B. ADMINISTRATIVE AREA – MFINIZO No. 17 ADMINISTRATIVE DISTRICT LUSIKISIKI * (SG No. LUSIKI/17) C. ADMINISTRATIVE AREA - NKOZO No. 16 ADMINISTRATIVE DISTRICT SIPHAQENI * (SG No. SIPHAQ/16) D. ADMINISTRATIVE AREA - MANTLANE No. 17 ADMINISTRATIVE DISTRICT SIPHAQENI * (SG No. SIPHAQ/17) **INCLUDING** All the **State Domestic Facilities** (SDFs) to be **identified and surveyed** as subdivisions of the above Administrative Areas. Relevant diagrams and records must be lodged to form part of the individual Administrative Area surveys. * S.G. Reference Number (in brackets above) indicates digital information available on the auto-emailer.	.....	....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
3.	**DATA AND INFORMATION TO BE SUPPLIED BY THE SURVEYOR GENERAL: CAPE TOWN**		
3.1	The Surveyor-General: Cape Town will supply the following data. For each Administrative Area the following: A. The new Administrative Area designation. B. The 1:50000-topo-sheet reference. C. The point-to-point description of the Administrative Area as proclaimed. D. The proposed boundaries of the Administrative Area to be surveyed. E. The copies of diagrams of registered properties to be excluded from the Administrative Area surveys. F. A plan showing the proposed interpretation of the Administrative Area boundaries as proclaimed. Mapping (vector) data for the (administrative area) river boundaries can be ordered from CD: Surveys & Mapping (CDSM). Tel: (021) 658 4300	.....	.....
3.2	Auto E-mailer Services will be available to access Reference Cadastral Data. Mr. Fezile Flatela/Chris Esterhuizen at the office of the Surveyor General: Cape Town. Tel: (021) 467 4800 can be contacted for information/data.	.....	.....

4.	**CADASTRAL SURVEY AND SERVICES REQUIRED OF TENDERER**		
4.1	***SURVEY REQUIREMENTS***		
4.1.1	ALL SURVEYS TO BE DONE IN ACCORDANCE WITH THE LAND SURVEY ACT AND REGULATIONS (Act 8 of 1997).	.....	.....
4.1.2	Survey of all the Administrative Areas as indicated on the accompanying plans and maps. Boundaries must be determined in accordance with the Proclaimed Administrative Area boundaries and existing registered properties must be excluded.	.....	.....
4.1.3	All SDFs must be surveyed as subdivisions of 4.1.2 and must follow existing fence lines. In cases of uncertainty the position of SDF - boundaries must be cleared with D: PLSS before framing the final subdivision diagram.	.....	.....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
4.1.5	River boundaries, of the administration areas, may be adopted from the Mapping Database of the Chief Director: Surveys and Mapping. (CDSM)	.....	.....
4.1.6	Records to be lodged must comply with provisions/specifications of the Surveyor-General: Cape Town.	.....	.....
4.1.7	Designations must be in accordance with the proclaimed Administrative Area name as well as the farm number reserved by the Surveyor-General: Cape Town.	.....	.....
4.1.8	Common boundaries and beacons must be adopted from existing approved diagrams, where applicable.	.....	.....
4.1.9	Common boundaries and beacons of adjoining blocks must be surveyed in consultation between the appointed Land Surveyors/firms, unless otherwise specified. (If in doubt please contact SG)	.....	.....
4.1.10	Where a river forms the boundary of an Admin. Area, the river name must be adopted from the 1/50000 Topo sheet, if available.	.....	.....
4.1.11	The tenderer must indicate in his/her survey report all differences (whether in dispute or by agreement) between common and proclaimed boundaries.	.....	.....
4.1.12	For block N all Administrative Area boundaries must be surveyed as shown on the index maps except for the boundaries common to the following adjacent blocks: • Block L • Block M • Block P Data must be adopted from the appointed Land Surveyors/firms who survey the adjoining blocks Admin Areas previously surveyed: Data must be adopted from the approved Diagrams/Plans of the following Admin Areas: • Farm No. 37 Sipaqeni 2 (S.G. No. 10001/2003) • Farm No. 47 Mbadango Sipaqeni (S.G.No. 4011/2004)	.....	.....
4.1.13	The common boundaries/beacons of block P will be surveyed as phase one. This data will be made available to the appointed land surveyors for the completion of the adjoining Administrative Areas.	.....	.....
4.2	**SURVEY OF STATE DOMESTIC FACILITIES**		
4.2.1	All State Domestic Facilities must be surveyed as subdivisions of the relevant Administrative Area.	.....	.....
4.2.2	Diagrams for all the State Domestic Facilities must be submitted for examination and approval simultaneously with the records of the relevant Administrative Area.	.....	.....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
4.2.3	Separate quotations per SDF must be provided. For assessment purposes a ceiling price for a total of 20 (twenty) SDF's will be considered, for comparison purposes, and for adjudication of the Total Tender price (i.e. a combined price for 4 Admin. Areas and 20 SDF's for block N). The successful tenderer will be paid according to the actual number of SDFs identified and surveyed for the specific block and the total price will be adjusted accordingly on completion of the project.	.....	.....
4.3	***AGREEMENTS & COMMUNITY LIAISON***		
4.3.1	The responsible Land Surveyor must provide a Boundary Certificate stating that the boundaries have been pointed out to representatives of the Mthatha District Land Reform Office (DLA) and the relevant community representatives or admin officer of the Department of Agriculture and Land Affairs: Eastern Cape Provincial Government	.....	.....
4.3.2	The Boundary Certificates must be signed by the responsible Professional Land Surveyor, representatives of the Mthatha District Land Reform Office (DLA) and the relevant community representatives or admin officer of the Department of Agriculture and Land Affairs: Eastern Cape Provincial Government.	.....	.....
5.	**TENDER PRICING**		
5.1	Tenderers quotations must include, all subsistence and travel costs, the supply of all materials, the supply and use of tools and equipment, the supply and supervision of all labour, the payment of research fees and all the services necessary for the execution and completion of the work as specified and shown on the drawings, all in strict accordance with the Land Survey Act, 1997 (Act No. 8 of 1997) as amended. **S.G. Examination fees will not be payable.**	.....	.....
5.2	The Department may, at its discretion request the contractor to: (a) Increase or reduce the quantity of the work Included in the contract. (b) Cancel specific parts of the survey (c) Execute additional work (excluding SDF's) of any kind necessary for the completion of the task, provided the resultant cost variation does not exceed 20% of the tendered price.	.....	.....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
5.3	After award of the tender and notification by the Department, the submission date must be strictly adhered to unless alternative arrangements are made with the Surveyor-General: Cape Town.	.....	.....
5.4	If the contractor fails to supply the documents or render the services within the period stipulated in the contract, the State shall have the right, at its sole discretion either to deduct a penalty, amount of 1/14% from the value of the contract sum an amount of one-fourteenth per cent thereof per day for the period of delay or to claim any damages or loss suffered in lieu of such penalty: Provided that where beneficial use of the completed portion is enjoyed, the penalty shall be applied to the value of the outstanding portion only.	.....	....
5.5	The name of successful tenderer may be made public.	.....	.....

6.	***PRE - QUALIFICATION TO TENDER AND A CONDITION TO TENDER***		
6.1	***Only tenderers meeting the following requirements qualify to tender.*** ▪ A person who is registered with the SA Council for Professional and Technical Surveyors as a Professional Land Surveyor. Such a person will be required to take personal responsibility for the work undertaken in terms of this contract. ▪ **IT IS A *CONDITION OF TENDER* THAT TENDERERS ARE NOT ALLOWED TO *SUB-CONTRACT* ANY PORTION OF THIS PROJECT/TENDER**	.....	....
7.	***COLLECTION OF DATA***		
7.1	The data, as listed under paragraph 3.1 of this specification, will be available From: The Surveyor-General's Office: Cape Town 90 Plein Street Cape Town 8000 Contact persons: Fezile Flatela or Chris Esterhuizen Tel: 021-467 4800	.....	....
8	**LODGMENT OF COMPLETED DOCUMENTS AND RECORDS**		
8.1	The documents, records and certificates as per paragraph 2.1 of the tender specifications must be completed and delivered to the Surveyor-General: Cape Town on or before (unless written arrangements were made in advance and agreed upon with the SG) 01 July 2005.	.....	....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
8.2	The DLA will under no circumstances accept any delivery after the due date and reserves the right to terminate the contract should the contractor fail to deliver the completed products by the specified date.	.....	....
8.3	If the contractor **fails to submit** the completed documentation by the date specified, the Director PLSS (DLA) reserves the right to cancel the instruction issued in terms of this tender to such contractor. In such a case, no payment or part thereof, need be made to the contractor. In addition any costs incurred by the Directorate Public Land Support Services (PLSS) in obtaining an alternative solution as a result of non-delivery of the completed task/s will be borne by that contractor.	.....	....
9	**QUALITY CONTROL AND PROGRESS MONITORING**		
9.1	Please Note that a **compulsory tender information session** will be held at: Department of Land Affairs Offices: **E.Cape: Provincial Land Reform Office** **40 Blakeway Road** **Mthatha Tel: 047 532 5959** On **8 April 2005 at 10H00.** **NB: TENDERERS NEED TO OBTAIN A COPY OF THE TENDER DOCUMENT BEFORE ATTENDING THE INFORMATION SESSION. NO COPIES WILL BE DISTRIBUTED AT THE SESSION.**	.....	.....
9.2	The DLA reserves the right to request progress reports, from the responsible Land Surveyor at any time during the course of the contract.	.....	.....
9.3	The successful tenderer(s) will remain responsible, for the correction of any errors/problems relating to the survey that may be discovered after the completion of the contract. The costs of this service will be at the tenderer's expense.	.....	.....
10	**COPYRIGHT**		
10.1	All records supplied by the Surveyor-General: Cape Town and any produced from these records and in documentation accordance with this specification shall become the property of the State (*regardless of whether they are accepted or not*). The copyright of all records will be vested in the State and no copies, other than those to be delivered to the Surveyor-General: Cape Town shall be made.	.....	.....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
11	**ACCEPTANCE AND PAYMENT FOR WORK**		
11.1	The acceptance of and payment for the documents produced in accordance with this tender do not absolve the contractor from differences that are discovered subsequent to the completion of the contract.	.....	....
11.2	**Payment will be authorized upon acceptance of the completed assignment as required in paragraph 2.1 of the tender specification. The Director PLSS is responsible for processing the order for payment on official appointment of the service provider. Full payment will be effected by means of an electronic funds transfer once the requirements of paragraph 11.4 have been met.**	.....	.....
11.3	Only surveys done in accordance with the instructions shall be paid for. The Directorate Public Land Support Services (DLA) will be responsible for payment. Invoices to be directed to: Director: Public Land Support Services Department of Land Affairs Private Bag X833 Pretoria 0001 ATTENTION: Mr. Chris Schalkwyk	.....	.....
11.4	Full payment of the value of the work will be authorized, after the task has been satisfactorily completed and submitted to the Surveyor-General: Cape Town for approval. (The SG will need 10 working days for preliminary examination and clearance of the task)	...	...
12	**CORRESPONDENCE**		
12.1	All correspondence relating to tender, community and any legal requirements shall be addressed to: Director: Public Land Support Services Department of Land Affairs Private Bag X833 Pretoria 0001 ATTENTION: Mr. Chris Schalkwyk	.....	.....
12.2	All other correspondence (relating to survey matters) must be addressed to: The Surveyor-General: Cape Town For Attention: H. van Zyl Private Bag X 9028 CAPE TOWN 8000	.....	.....

TENDER SPECIFICATION FOR THE SUPPLY OF DIAGRAMS OF ADMINISTRATIVE AREAS TO THE SURVEYOR-GENERAL: CAPE TOWN FOR REGISTRATION AT THE DEEDS OFFICE

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
13	**INTERPRETATION OF TERMS**		
13.1	"PLSS" means the Directorate Public Land Support Services (DLA)	.....	....
13.2	"CDSM" means the Chief Directorate Surveys and Mapping	.....	.....
13.3	"Tenderer/ Contractor" shall mean any person or persons undertaking the performance of part or whole of the work included in this contract. The successful tenderer becomes the contractor and the requirements of the tender become the contract	.....	.....
13.4	In the case of persons forming a consortium, the "principal tenderer" will be that person as indicated in paragraph 13.1 who will represent the consortium on all issues surrounding the contacts relating to the tender. This person will be held responsible for any loss or damage to any materials or property of the State supplied in terms of this contract.	.....	.....
13.5	"SG" means the Surveyor General: Cape Town.	.....	.....
13.6	"Admin Area" means Administrative Area as proclaimed.	.....	.....
13.7	"SDF" means State Domestic Facilities of a permanent nature (e.g. Building) for the purpose of a school, clinic, police station, military use or any other national or provincial function.	.....	.....
13.8	"DLA" means Department of Land Affairs		
14	**MINIMUM SPECIFICATIONS**		
14.1	These specifications are only the minimum specifications. Any shortcomings in the specifications should be indicated in the tender and provided for in the tender price. Any additional costs incurred by the tenderer because of shortcomings in the tender specifications will be for the tenderer's own account.	.....	.....
15	**COMPLIANCE**		
15.1	The tenderer must indicate at each item of the specifications (i.e. items 1.2 – 18.1) in the tender whether he/she complies with the statement made. Each item must be answered with a "Yes," "No" or "Noted." **Failure to comply with this stipulation will result in the disqualification of the tender.** Any condition imposed by the tenderer that is restrictive or contrary to any part of this tender will automatically disqualify the tenderer.	.....	.....

DESCRIPTION		COMPLY YES/NO	PARAGRAPH REF. NO
16	**CLARIFICATION**		
16.1	In case of uncertainty of any requirement or intention of any part of the specification or any other documents such quarries must be referred to: Surveyor-General: Cape Town (Attention H. van Zyl Tel: 021 467 4800) for explanations. The contractor will be held responsible for any errors, which may result from the neglect of this precaution.	.....	.....
16.2	The Department may request clarification or additional information regarding any aspect of the tender. The tenderer must supply the requested information within 72 hours after the request has been made. Failure to comply may result in the tender being disqualified.	.....	.....
16.3	No alterations to, or departures from, the specification, or from the terms of the contract, shall in any way be made without written consent from the Surveyor-General: Cape Town.	.....	....
17	**PROGRESS REPORTING**		
17.1	The contractor shall submit a report detailing the progress on the work on a monthly basis.	.....	....
18	**SECURITY ARRANGEMENTS**		
18.1	Any staff commissioned by the tenderer must submit to security arrangements in place at the point of delivery.	.....	....

19. TENDER EVALUATION PROCESS

Tenders will be evaluated on price, functionality and economic empowerment in accordance with State Tender Board Procurement Policies:

Price = 50 , Functionality requirements = 50 **Total = 100**

The following criteria will be used in particular as the criteria for appointment, apart from those laid down in the Preferential Procurement Regulations, 2001 pertaining to the Preferential Procurement Policy Framework Act 5 of 2000.

NO	CRITERIA	WEIGHT
19.1	Understanding of the Project Brief	15
	19.1.1 Extent of nature of task 5	
	19.1.2 Availability to commence immediately 5	
	19.1.3 Delivery period 5	
19.2.	Appropriateness of qualification and experience as a land surveyor .	10
	19.2.1 Applicable qualification 5	
	19.2.2 Former experience in State Surveys (Transkei region). 5	
19.3	Experience and skills in the survey environment	25
	19.3.1 Coastal surveys 5	
	19.3.2 River surveys 5	
	19.3.3 Mountain area surveys 5	
	19.3.4 State domestic surveys 5	
	19.3.5 Tribal and administrative area survey 5	
	TOTAL	50

The tender documents will be evaluated individually on score sheets, by a representative evaluation panel according to the evaluation criteria indicated above. During Phase 1 a shortlist will be established and the short-listed

tenderers may be invited to do a presentation on their proposals at their own cost, should it deem necessary for the Department to do so.

During the 2nd phase the tenderers doing the presentation will be evaluated by the same evaluation panel individually on score sheets as per above.

The 80/20 principle will be applied in terms of the Preferential Procurement Policy Framework.

The Department of Land Affairs is an equal opportunity, affirmative action employee. It shows the same commitment to those who wish to provide services to the Department via the procurement process. It should be noted that regard will be given to those proposals from persons or companies who were previously disadvantaged, and which show evidence of skills transfer and representivity. This does not preclude the formation of consortiums or the inclusion of proposals on how this project can best be used to further the broader aims of transformation.

The Service Provider, Subcontractor (Directors, members of close corporation and employees) involved with the Contract or having access to information relating to the contract/Department shall sign an Oath of Secrecy and be prepared to go through the process of Security Clearance or background checks as determined by the Department