An Analysis of Constraints for Land Use in a Former Homeland Area in South Africa

by

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SYNOPSIS

Land Use and Land Distribution

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I. STATEMENT OF THE PROBLEM

Access to land and patterns of land use in South Africa are crucial aspects that need to be thoroughly assessed to identify present constraint and future opportunities for natural resource management. Former homelands are usually described as overcrowded and it is widely believed that local resources are over-utilised and heavily degraded. However, in the Madlangala area, this does not seem to be the case since large areas are seemingly unutilised. It is widely believed that insecure tenure rights and complicated land distribution can have an impact on the land use and thus the livelihood.
We find this study important in terms of understanding the land use practices and distribution at different levels of the South African society because we perceive that these could be possible constraints, which hinder the use of land.
The inter-disciplinary establishment is a good foundation for covering a wide set of aspects within the stated problem.

Our objective is to:
Identify the land use and land distribution in Pepela, according to social and historical structures in order to identify possible present constraints and future opportunities for land use in the area.

II. RESEARCH QUESTIONS

The definition of our objective has led to a series of research questions which function as a bridge between our general problem and the methods we intend to use.

- Are the land tenure constrains for the present land use and land distribution?
- What are the impacts of norms, values and local rules on the land use and land distribution?
- How have the historical structures influenced the land distribution?

III. SETTING/BACKGROUND

The area, where the study is going to be conducted is in the village of Pepela, a part of a catchment area called Madlangala.

NATURAL SCIENTIFIC SETTING
Pepela is situated in Madlangala, which is a part of Maluti District, Eastern Cape. This district was always part of the Transkei Homeland but was one of the areas furthest from its administrative capital Umtata. Therefore Pepela has always relied for most of its services on the neighbouring town of Matatiele, which has been a part of the KwaZulu-Natal since the 1960 (Turner, 1999: 6).
The population growth in this part of Eastern Cape is measured to be 2-4 % (1980-1991 figures). Just under half of the population is living below the poverty line. The main annual temperature in the study area is 14-15°C. The average annual rainfall is between 700 and 1300mm, which are above the national average

semi-arid conditions of 500 mm pr. year. The region is well favoured in terms of water availability, and the average potential of primary production in the study area is thus moderately good, but soils are poor in fertility and very erodible. The region receives most of its rain during the summer, while winter is the dry season. Cultivation starts in November-December and the growing season is 7-8 months (Bjarnadóttir et. al 2001).

SOCIAL SCIENTIFIC SETTING

In the area there is a set of social and historical structures, which partly is inherited from the former Apartheid system. We believe that these social and historical structures results in a very complex land distribution process as well as unclear tenure rights. EDA Matatiele (Environment and Development Agency), a NGO working in the area, recognises that local communities in the Madlangala area in 1998 complained of widespread insecurity of tenure. This insecurity of tenure consisted of breakdown, chaos and probably illegal practices in the system of local land allocation and administration; conflict between traditional authorities and elected local authorities; confusion regarding tenure and land administration, which all obstruct local land development; low productivity from local natural resource base and environmental degradation from disintegration in traditional land use management systems. Insecurity of tenure was also experienced by women through discriminatory application of traditional inheritance laws (www.eda.org.za., 21.10.02).

When an attempt is made to allocation a plot of land the applicant is met with a tortuous system, which makes it expensive and difficult for the individual farmer to obtain tenure rights to the land in the area. Furthermore the tenure rights can be withdrawn if the farmer for some reasons do not utilise the land, which has been allocated to him/her. This system of tenure is therefore based on ownership by traditional authorities. The regulation of the utilisation of land as well as lack of ownership by the individual farmer prohibits the transactions of land between farmers. These characteristics of the tenure system will according to Roth et. al. lead to widespread tenure insecurity (Roth et. al., 1998:1).

Another possible constrain for land use in the area could be the lack of labour due to high rates of HIV/AIDS, and a direct dependency on male migrant former workers in the mining industry.

IV. PROJECT DESIGN AND METHODS

To obtain data on social and historical structures related to problems of land use and land distribution we plan to use a wide range of methods. The actual numbers of days available for fieldwork is eight, and this brings in certain limitations to the out reach of the methods. E.g. the possibility of conducting enough interviews to be able to create a statistical valid population that unfortunately seems unrealistic. Therefore the design and thus the methods of this project will focus on a "soft approach" rather than statistical material and hard data. In order to identify social and historical structures related to land use we furthermore believe that the soft approach is the most appropriate.

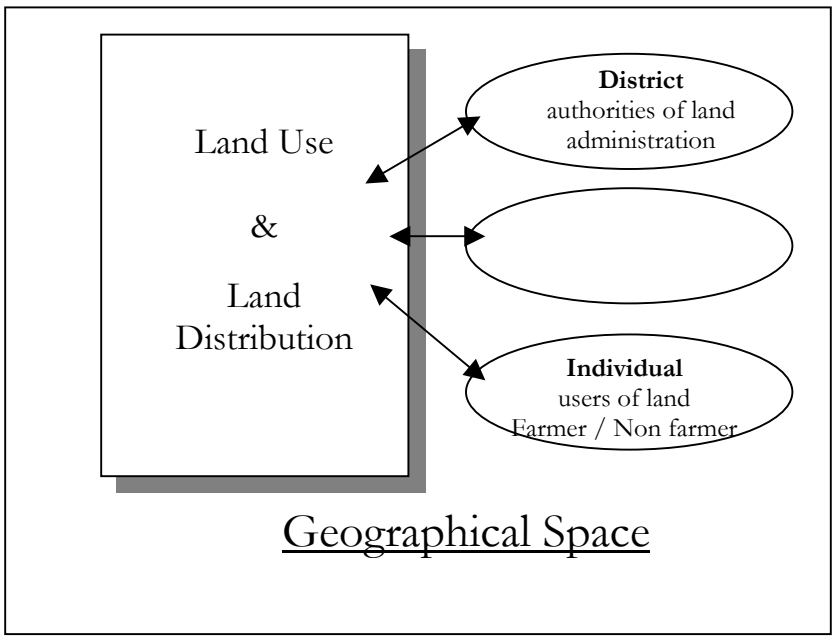

Figure 1: The different levels of land use and land distribution which will be our objectives of analysis. i) District authorities of land administration, ii) Local authorities of land administration, iii) Individual users of land Farmer / Non farmer

Geographic Information System (GIS)

In this project we have decided to use GIS as a method to reveal information on i) land use ii) land cover and iii) land tenure covering land distribution.

We believe that the combination of GIS and participatory methods will provide information of great value and detail of the constraints and opportunities than the single use of more traditional methods such as questionnaires, interviews and transects.

Hence the aim of introducing GIS is to strengthen the management and utilisation of data gathered in the field by various methods. Several authors, such as Cinderby (1998) and Kunzel, (2002) stress that GIS used in participatory approaches form a powerful method with a great potential for effectively and systematically being able to collect and retrieve information. Cinderby (1998) describes GIS used along with participation techniques as 'GIS–P', and emphasises it as a 'bottom up' approach as alternative to the traditional 'top down' approach, which is embedded in traditional management of GIS.

When addressing land use and land distribution issues we will use the GIS as a dynamic tool, which will make it possible for us to arrange, organise and analyse spatial data of different scale and date and to create the possibility of display data on maps and aerial photos of Pepela. In this context data is a combination of spatial referenced or geographical data, which will receive higher value when displayed in relation to one

another. Important boundaries of the village, e.g. tenure rights and agricultural and pasture boundaries can be determined in several ways. Where possible the location can be found by the use of the GPS device during transect walking with key informants or by marking visual boundaries directly into the GIS. Furthermore, plates displaying aerial photos will be created using the GIS and work as a baseline for a participatory mapping amongst various focus groups. Later it will be added as layers in the GIS and become subject to further analysis.

Identification of land cover can be done by the use of remote sensing. In this project we will use remote sensing by the means of aerial photos, but secondary the use of high-resolution satellite imagery may be used. The collection of ground truth data for verification if the classification will be done continuously during the field trip e.g. when conduction transect walking.

We are aware of several aspects intrinsic to this technology, which complicate its use in situations where participatory methods are used in co-operation with the indigenous population, especially in remote areas. In practical, we figure a number of questions, which may require some consideration: How much easier are aerial images understood in relation to traditional maps? What are the strengths and weaknesses of each method of representation from a method point of view? Up to which point is the Global Posistioning System (GPS) input still usable in the field, as it looses contact with the satellites increasingly with rising ground cover and rugged terrain? Up to which point does the GPS input deliver data of usable accuracy, as detailed mapping of boundaries may be necessary.
It is important to know, that the solution of the technological issues alone will not automatically lead to a useable tool which, means that GIS technologies need to be integrated in the participatory idea, and hence the project it self from the beginning. It should however be emphasised that GIS nor should or will be used alone as methods of interview and observation also will be conducted.

PRA METHODS

Participatory Mapping

For providing spatial information related to the land use and land distribution as well as information on what the fields are used for and to whom they are allocated we intend to use participatory mapping.
We find participatory mapping to be far more accurate than the sketch maps produced by field workers in isolation from the local users. Particularly as a participatory map easily can be transferred to a topography map by using points that are common to both maps. Participatory mapping also provides a reliable and cost-effective way to collect, store and display information (Jackson et. al., 1988: 8).
The mapping will be done with the farmers during the semi-structured interviews. In contrast to the typical participatory mapping, where maps are drawn collectively in the sand or on paper we will use aerial photographs on which the mapping will be done. When using the aerial photos as background for the participatory mapping we create the possibility of incorporating the participatory mapping into the GIS, and therefore creating a 'GIS-P'.

We also want to use aerial photographs as a visual tool in order to be able to use this method during all the semi-structured interview sessions. This would not have been possible if a comprehensive and time-consuming drawing of the maps in the sand where required at each interview. Mainly we will ask the different informants to identify the land they farm or used to farm as well as other important land and tenure issues they find relevant to point out. We believe that this method will provide quick and reliable information on the local knowledge of physical space, land use and land allocation.
The participatory mapping should be seen as a method of crosschecking other information as well as a forum of getting close to the informants leading to informal conversation and trusting relations between the informants and the researchers.

Transects
In combination with the participatory mapping we want to do transect walks in the area to support and crosscheck the information provided by the participatory mapping. We will as a joint exercise with the informants walk through the area for observing, discussing and registering the endowments and problems of the area.
The transects is expected to be useful in helping to identify problems or opportunities in the area and for opening up discussions between the informants as members of the community and us as the external team as it will be useful in helping to clarify issues and questions (Mikkelsen, 1995:137). We hope that we can use transects as a method to identify the perceived problems related to the land use and land allocation in Pepela. When conducting the transect walks we will pay special attention to: vegetation, slope, aspect, erosion, availability of water and distance to village.
Transect walks should be seen as complementing interviews and participatory mapping since the information received through this method should be seen as a part of the greater complexity of relations that characterises social science relations. Therefore this method should not be used alone but together with other related methods. As with participatory mapping the process of conducting transects are very important since it opens up a forum of informal conversations.

QUALITATIVE METHODS

Regarding interviews we have agreed on the selection of a small sample in order to get more in depth insight in the practices of past and present land use and distribution system, which contribute to the understanding of the perceived problems of land use and land distribution. The reason for doing this is the assumption that the peoples' life in Pepela to somewhat extent represents similar cases in the surrounding area. The methods we have chosen are:

Semi-Structured Interviews
In the beginning of the fieldwork we want to do semi-structured interviews (approximately 8-10 interviews due to limited time in the field). This should be done in first phase to find possible key informants to do transect walking, possible re-interviewing and life-story telling. A questionnaire will be produced with

approximately 20 questions beginning with personal data and ending with more open-ended questions concerning land use and land distribution (Mikkelsen, 1995). The interview will be carried out with one person interviewing in co-operation with an interpreter and second person writing and observing the interview situation. We have chosen this method because it perceives good and clear information within a relative short time period. It is a fast method for us to get to an introductory knowledge to people and their situation and in the case of we are different interviewers, the interview-guide will allow us to keep the interviews uniform and produce concise data. There is of course the possibility of data being very superficial and the interview very formal, a factor, which must draw our attention.

Our criteria for choosing the informants for the semi-structured interviews will be based on stratified sampling. We will choose farmers and non-farmers as informants on the basis of a preliminary walk in the area with the person, whom will be allocated to us. This local person, who to a large extend will serve as our initial key informant, will (hopefully) have a good network and general knowledge of inhabitants of the village.

Life-stories of land use and land distribution

We want to collect life-stories during the fieldwork on past and present land use and land distribution to give a biographic presentation as a contrast to other analysis. The conversation will be structured over events and this demands the interviewer to acquire large knowledge of local and national history to be used as 'fix-points'. We will start conversation with informants (if time allows this will be 3-4 informants) with more innocuous subjects and end with more sensitive ones. We will start asking specific and less emotionally to avoid nostalgia. Additionally, it will be possible to reconstruct time-lines and actively involve the informant when possible than a formal semi-structured interview. The life-story data can alternatively be collected through unstructured interview to ensure specific subjects can be covered if done by different interviewers (Crapanzano, 1984; Francis, 1992).

As possible historical 'fix-points' events for the creation of a timeline the following have been discussed: World War II, Apartheid, the introduction of the identification card, marriage, job, migration work (Palmberg & Strand, 1995).

Life stories give good understanding of the individual's role; reconstruct changes in patterns of land use and land distribution. It is of course very subjective and we should be aware of this when analysing the data. We might face more practical problems like; people think we will interview them very formally, old informants determining dates (because dates in many countries are only used recently), and then there is always the risk of people lying for personal reasons.

The informant for life stories will be chosen on basis of the semi-structured interviews. We intend to use informants that have shown an extended knowledge on the land use and distribution related problems. We will expect data to be very widespread and complex: Genealogy and inheritance, social rules and values,

past and present behaviour, history's impact on the individual, individuals future prospects, land use in practice, local perspectives of land distribution, subsistence and migration history for the individual/household, social and economic development in area. When conducting of the life-stories we expect to use maps for pointing out and illustration of the topic, which are being discussed.

Interviews of key informants

The interviews with the key informants will be done as unstructured interviews. With these interviews we aim to obtain special knowledge on the land use and land distribution issue since they as key informants have a special knowledge on this given topic. They should be able to answer questions about other people's knowledge, attitudes and practices. This allows us to get an in-depth understanding of the complexity that characterises the land use and land distribution issue in Pepela.

The objective with the interview of key informants in is to analyse the perceptions of ownership, tenure rights etc. in Pepela from the district, local and individual level. The information obtained from these interviews could be useful in the triangulation and cross-checking of information received from interviews of other groups of informants for instance the farmers as well as for additional information.

In order to do this, it is our aim to interview 1) Chief/Headmen of Pepela, 2) the local Extension Officer in the Maluti, 3) the Registration Officer in Maluti/Matatiele and 4) a representative from the local NGO EDA that works in the area.

The chief/headmen represents the traditional local authorities e.g. power structure in Pepela, which according to our beliefs has a huge influence on the allocation of land in the area.

The Registration Officer could as the official organ for allocation of land help us to understand the legislation of land affairs and property rights in the area. Therefore the Registration Officer, who represents the district level, perceives the problems and constraints related to the land use and land allocation differently from the institutions of power represented by the chief/headmen as well as from the farmers themselves.

The Extension Officer is interesting because he has a wide knowledge of the land use in Pepela. He could help us to understand the problems related to farming practices as well as to make a general classification of who farms what land etc.

Interviewing the local NGO EDA can help us to understand other perspectives of land use and land distribution in Pepela. With EDA we hope to be able to gain knowledge about the general problems that are related to land use and land distribution, from a NGOs point of view, and how these problems constrains the land use.

Additional Methodology

Whenever possible we will do informal conversation and participant observation. Due to the limited time in the field the participant observation is expected to be rather limited. Therefore whenever possible we will socialise with the local people and observing the people being interviewed and doing transects. The methods are not possible to plan as the above-mentioned methods, if done, it can be a help to e.g. get in contact with informants and to get a more in-depth understanding of the local life situation in the

Madlangala area (Cohen, 1984; Kemp & Ellen, 1984). The problem is of course that these methods can produce very unstructured data.

V. ETHICAL CONSIDERATIONS

When conducting fieldwork in an area with a significant different culture certain ethical questions eventually will come up. Outlined below is a range of issues, which we by now consider sensitive and which can create discomfort between the object and us as researchers.

- Sensitive questions and "tress-passing" people's life. These could include asking about issues as: death, economy, AIDS, rich/poor countries, age family relations.
- The position of the interviewer as a person confronting the object. These problems include social status, age and gender and the hope for economic relations.
- The use of technology during interviews can create some discomfort and / or move the attention away from the focus area. These technologies include: Photographs, tape recording the interview, the use of laptop.
- The use of e.g. a tape recorder can create the feeling of loss of anonymity and thus jeopardise the protection of informants?
- The issue of feelings, personality and honesty in terms of what we are able to give back to these people in return for getting this data.
- General questions to the role of the male / female researcher in area with lot of women, and the implications of being a European researcher in an impoverished rural area.

VI. LITERATURE

METHODS AND THEORY

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APPENDIX I

PRELIMINARY INTERVIEW GUIDE FOR INTERVIEWS WITH KEY INFORMANTS

Key informants:
-Chief/headman, Registration Officer, Extension Officer, EDA Matatiele.

Following topics/issues have to be covered:

Tenure rights, tenure system
Can the farmers sell the land?
Can the farmers lease out the land?
What happens if they stop farming the land?
Can anyone take the land away from the farmer?
Are there any restrictions for the farmers on the use of land?

Distribution/allocation of land, obtaining tenure rights
Who decides who gets the land?
Who makes the allocation of land?
If a farmer wants more land – How can he get it?

Use of land – production and sustainability
What does the farmers typically live from?
How many years have they farmed the land?
What kind of crops do they produce?
How do they cultivate the land (with machines/by hand)?
When do they cultivate the land (seasonally)?
Do they produce more than they eat?
Who helps you with the cultivation?
Do they produce cash crops?

Inheritance
Who do the farmers mainly get the land from?
Who had the land before them?
Who will inherit the land when they die/after them?

Ownership of the land in Pepela
Who owns the land?

APPENDIX II

PRELIMINARY INTERVIEW GUIDE FOR SEMI-STRUCTURED INTERVIEWS

Date: **Time:** **Interviewers:**	
People Present:	
Description of physical room:	
FARMER *PERSONAL DATA* Name (or initials): Gender: Age: Are you married? How many live in your household? How many years have you lived in the village? Did your parents or other family live here in this village? *LIVELIHOOD* What do you and your family live from? How many years have you farmed the land? What kind of crops do you produce? How do you cultivate the land (with machines/by hand)? When do you cultivate the land (seasonally)? Do you produce more than you eat? Who helps you with the cultivation? *TENURE RIGHTS* How did you get to farm the land? Can you sell or lease out this land? What happens if you stop farming the land? Can anyone take the land away from you? Who had the land before you? Who will get the land after you? Who decides who gets the land? If you want more land – How can you get it? Who cultivate the land besides your land? *CONSTRAINTS AND OPPORTUNITIES* What are the positive things of farming? What are the problems of farming? What do you think could improve your farming? How important do you think it will be in the future? Can the land be used in a more efficient way? *MAPPING* Can you point out the land you farm if I tell you we are here now? (show map)	**NON-FARMER** *PERSONAL DATA* Name (or initials): Gender: Age: Are you married? How many live in your household? How many years have you lived in the village? Did your parents or other family live here in this village? *LIVELIHOOD* What do you and your family live from? How many years have you lived from this? Have you ever farmed the land? Why don't you farm? Have you tried to obtain land? Who decides who gets the land? If you want to have some land – How can you get it? *TENURE RIGTHS* Can anyone take your land away from you? Who had your land before you? Who will get the land after you? Who decides who gets the land? *CONSTRAINTS AND OPPORTUNITIES* Is farming important for your society? What do you think could improve the farming? How important do you think it will be in the future? Can the land be used in a more efficient way? What are the positive things of farming? What are the problems of farming? *MAPPING* Can you point out your land if I tell you we are here now? (show map)

Appendix III

TIME SCHEDULE

Date	Task	Persons involved
18.01	Arrival at Madlangala, walk in village and getting in contact with villagers	Interpreter, all persons in group
19.01	Walk in village in Madlangala with interpreter, getting suggestions of whom to interview and making appointment for interview (incl. key informants),	Interpreter and interviewers
20.01	GPS field measurements, semi-structured interviews, PM, Meeting: 1st Field Evalution	*)
21.01	Semi-structured interviews, PM	*)
22.01	Semi-structured interviews, PM	*)
23.01	Life-stories, PM, transects, interview with key informants Meeting: 2nd Field Evalution	*)
24.01	Life-stories, PM, transects, interview with land administration officer in Maluti (?)	*)
25.01	Life-stories, PM, transects, interview with key informants	*)
26.01	Summing up on data	*)
27.01	Return to Durban	*)

*) To be agreed upon with the Swazi and Durban students.

Appendix IV

SCHEMATIC OVERVIEW OF THE LAND USE AND LAND DISTRIBUTION PROJECT

Problem formulation:

Identify the land use and land distribution in Pepela, according to social and historical structures in order to identify possible present constraints and future opportunities for sustainable land use in the area.

Focus points	Research questions	Methodology	Time Perspective	Literature
1) Land classification and land evaluation.	Identify area/classification of the land.	Aerial photos, GIS, (Satellite images), GPS.	Pre-phase	- Lillesand, T. M.; Kiefer, R. W.: Remote sensing and image interpretation. 4th Edition. Wiley, 2000.
	Identify land cover (historical & present). What is the history of agricultural practice in Pepela?	Aerial photos.	Pre-phase	- Jensen, J. R.: Remote sensing of environment, An earth resource perspective. Prentice Hall.
	Identify land cover (historical & present).	Semi-structured interviews with farmers. Participatory mapping, Transects. Interview of key informants: Extension Officer,	Field	- Christopher, AJ. South Africa. Longman Group Ldt. Harlow, Essex, 1982.
	Identify the land. Boundaries of Pepela.	Participatory mapping, Transects.	Field	- Kunzel, W.: The use of GIS in participatory ressource assessment. www.mekonginfo.org. - SLUSE Compendium, ect. - Cinderby, S. et. al.: GIS fact sheet. Stockholm Environment Institute - Cinderby, S, et. al.: GIS for participation: The future of environmental GIS. Int. Jurnal of Environment and Pollution. 1998.

2) Land tenure Identify whether the land tenure constrains the present land use and land distribution? Identify the impact of the values, norms and rules on the land use and land distribution in the Pepela?	Formal land rights/ land reform. What is the legislation in the area? To what extent do the land reform and the legislation influence the land use and land distribution	Interview of key informants: Registration/Agricultural Officer, Chief/Headmen, EDA Matatiele.	Field	- SA Government homepage: www.land.pwv.gov.za - Funder et al, 2001 "Constrains on Crop Production in Mabua, South Africa", ILNURM 2001. - Lyne, M & Darrich, M, 2001, "Land Redistribution in KwaZulu-Natal South Africa", BASIS homepage: www.wisc.edu/ltc/baspubsafr.html - Graham, A & Lyne, M, 1999, "Land Redistribution in KwaZulu-Natal: an analysis of farmland transactions", Development Southern Africa, Vol 16, No 3, 1999. - EDA trust, 1999, "Clear up Tenure Chaos in Communal Areas": EDA homepage: www.eda.org.za
	Tenure security. How does the tenure rights impact the land use in Pepela?	Theoretical material (Roth & Haase). Semi-structured interviews with farmers/non-farmer, Participatory mapping Transects. Interview of key informants: Extension Officer, EDA Matatiele.	Pre-phase Field	- Roth, M & Haase, D, 1998, "Land Tenure Security and Agricultural Performance in South Africa", BASIS homepage: www.wisc.edu/ltc/baspubsafr.html - Perkins et al, 2001, "Economics of Development", W.W. Norton & Company, Inc, New York.
	Informal land rights. Who owns what? Who utilises what? Who decides where? Who works on what?	Semi-structured interviews with farmers/non-farmers, Participatory mapping Transects. Interview of key informants: Chief/headmen, EDA etc., Registration Officer, EDA Matatiele.	Field	- Funder et al, 2001 "Constrains on Crop Production in Mabua, South Africa" ILUNRM 2001. - EDA trust, 1999, "Clear up Tenure Chaos in Communal Areas": www.eda.org.za

	The power structure. What are the dominant institutions in Pepela/madlangala? How do these institutions influence the land use & land distribution?	Semi-structured interviews with farmers/ non-farmers. Interview of key informants: Chief/Headmen, EDA, Registration Officer.	Field	
	What is the socio-economic situation in Pepela/Madlangala? Do migration, health (AIDS) and the general economic situation influence the use of land?	Historical data. Literature	Pre-phase	Palmberg, M. & P. Strand (1995): "Sydafrika – en regnbågsnation föds", Nordiska Afrikainstitutet, Gotab, Uppsala.
	What are the values, norms and rules in the area? (Inheritance, gender etc.) How does these factors influence the land use & land distribution?	Semi-structured interviews with farmers/ non-farmers. Life Stories.	Field	
3) Historical aspects of land distribution and background information. Identify how the historical structures have influenced the land distribution?	History of land use and land distribution in the region. How where the land distributed historically?	Historical data of the local region. Semi-structured interviews with farmers/ non-farmers Life Stories.	Pre-phase Field	- Lipton et al, 1996, "Land Labour and livelihoods in Rural South Africa" Vol 2: "KwaZulu-Natal and Northern Province", Indicator Press, University of Natal, Durban, South Africa.
	What is the impact of the colonisation and apartheid on land distribution in the region?	Historical and theoretical data. Life Stories.	Pre-phase Field	Palmberg, M. & P. Strand (1995): "Sydafrika – en regnbågsnation föds", Nordiska Afrikainstitutet, Gotab, Uppsala.
	Which tribes are located in the area? How are the different tribes related to the land use and land distribution?	Historical data. Semi-structured interviews with farmers/ non-farmers. Life Stories.	Pre-phase Field	

4) Perspectives on future opportunities of sustainable land use in the area (development of Pepela).	Is the land utilised in a sustainable and economically efficient way? Is the land utilisation and distribution enhancing the development in the area? If not, what can be done?	Discussion	Post-field	
Conclusion	Which biological/physical parameters and social and historical structures of land use and land distribution constraints the present and the future possibilities of sustainable land use in Pepela?	Summary of analysis and discussion.	Post-field	

An Analysis of Constraints for Land Use in a Former Homeland Area in South Africa

by

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Abstract

Fieldwork was carried out in January 2003 in the village of Pepela in Eastern Cape, South Africa. The objective was to identify and characterise land use and land distribution in a former South African homeland. The research aimed at investigating the causes for the apparent unutilisation of land and hence the present constraints and future opportunities for land use.

Different perceptions of land distribution and tenure systems are described and discussed. Furthermore, the presence of other and more obvious constraints for land use are identified. Pepela is characterised by the lack of natural, economic, human and social capital, which influences the villager's capabilities of utilising the land that they seemingly have the rights and access to.

The study stresses the importance on how people's livelihood and hence their use of land are connected to their access to and use of natural resources through a changing political, economical and historical context.

1. Introduction

Large numbers of poor people in developing countries base their livelihoods on use of natural resources. Livelihoods diverse and technologies develop, influencing people's use of resources. Increasing demands from people and society can put nature under pressure, which may result in degradation and social conflicts as well as in new ways of understanding and managing nature. The access to and use of natural resources is in turn influenced by the legal (formal and customary), economic, and political institutions through which people gain access to and derive benefits from natural resources.

During the Apartheid period in South Africa, the majority of the black population was restricted to live within homelands. Combined with the broader historical and political context this resulted in an unequal access to land, which today after the ending of the homeland policy is still evident.
Since the African National Congress (ANC) came into power in March 1994 there has been a political will to implement land reform which should lead to a more equitable society[1].

The former homelands have usually been associated with over-crowdedness and therefore it is widely believed that natural resources in these areas are over-utilized and heavily degraded[2] (Turner, 1998). However, in some areas such as in Pepela, this over-crowdedness does not seem to be evident and large areas are seemingly left unutilised[3], and the soil not particularly exhausted. This research project aims to identify and characterise land use and distribution in a former South African homeland in order to analyse the apparent unutilisation of land hence present constraints and future opportunities for land use.

[1] An eighth draft for a land rights bill (land reform) is currently in a period of public comment, and the point of agreement seems still too far away. The land rights bill seeks to extend tenure security to occupiers of land under traditional leadership and hence unlock the economic potential of rural land. Security of tenure is a constitutional right. The land rights bill seeks to transfer state land in the former homelands to communities which must develop and register "community rules' for the process of land transfer. It is a requirement that communities appoint administrative boards to represent them in the process. As legal entities, these boards can issue free-hold title deeds to individuals in communal areas, who can then lease, mortgage or sell their land (Mail&Guardian: issue 11, January 17th to 23rd , 2003; Pietermaritzburg)

[2] This is the neo-Malthusian theory extending the classical theory (mainly concerned on population growth exceeding level of subsistence) applying the supply of other resources material as well as food (Mather & Chapman: *Environmental Resources,* p. 21 (1995), Addison Wesley Longman Limited, Harlow).

[3] The term un-utilisation presumes a notion of optimal utilisation. Through out this project we use this term in a agricultural sense. This means that un-utilisation is to be understood as not using the full agricultural potential of the land.

1.1. Field Site Description

The village of Pepela is located at the foothills of the mountainous Drakensberg Region close to the Lesotho border. The village is situated in Madlangala, which is a part of Maluti District, Eastern Cape. The district was during Apartheid a part of the Transkei homeland and was one of the areas furthest from the administrative capital Umtata. Therefore, Pepela relied on the services from the neighbouring town Matatiele, which has been a part of the KwaZulu-Natal since 1960 (Turner, 1999: 6).

Pepela is located at a height of 1500 to 1600 meters, with the surrounding mountains reaching heights of more than 2500 meters. The village is at the very end of a main dirt road and is somewhat isolated from the surrounding markets and services (fig. 1). The area of the village can be roughly divided into three categories; settlement, agricultural and rangeland (fig. 2).

The settlement area consists of approximately 135 households[4], which we divide into three main residential areas, Pepela I. Pepela II and Goxe (fig. 3). Each household is on a plot of around 50 x 50 meters (¼ ha). Often only a small bit of the plot is used for horticulture, e.g. vegetables and fruit trees while the remaining is used for field crops like maize. If the household has any cattle these are usually kraaled here at night and sometimes stall fed for a part or all of the year. The village has an effective and reliable water supply from several taps located around the village.

The soils in the agricultural areas are regarded to be of poor quality, and have a spatial variation between sandy dry areas and alluvial floodplains. The typically division of the areas are steep slopes of 18° which are subject to gully erosion. The upper agricultural areas have a mean slope of about 2° and are in dry periods subject to drought. The alluvial areas are frequently flooded and are every year waterlogged during the rainy season. A rough estimate shows a total agricultural area of 180 hectares which, equally divided between the 135 households, leaves a potential of 1.3 hectares for each. The rangeland areas are primarily used for grazing.

1.2. Methodological and Theoretical Approach

To obtain data on the land use and land distribution a wide range of methods where used. The used methods are focusing on qualitative data rather quantitative. The actual numbers of days available for fieldwork was eight which brought in certain trade-offs in the choice of methods (paragraph 2).

[4] The population in Pepela was from the Xhosa/Hlupi and Sotho tribes)

Our main thesis was that the complexity in land distribution processes and tenure systems are the main cause for the apparent un-utilisation of land. Therefore we found it important to identify people's rights to resources *(endowments)*, people's real access to resources (*entitlement*) and people's ability to utilise the resources (*capabilities*) (Leach et *al.* 1997: 16-18). Based on this we wanted to identify endowments and entitlements concerning land for the villagers in Pepela. Finally, we wanted to identify people's capabilities, which provide them with the ability to utilise the resources they have the rights and real access to. These capabilities can be expressed through analysis of people's access to natural, economic, social and human capital. In contrast, constraints for the utilization are the lack of the above capitals (Scoones, 1998: 5). Furthermore, the access to these capitals is influenced by the context in which people are situated. In this research we have concentrated on the political and historical context.

1.3. Objective and Research Questions

To understand the unutilisation of land in Pepela we want to identify how people's interactions with land as a natural resource is connected with their livelihood strategies unfolding in complex power relations, informal allocation systems, institutionalised tenure systems within a political and historical context.

This has led to the following main objective: *to identify the social and historical processes of land use and land distribution in Pepela, in order to identify possible present constraints and future opportunities for land use in the area.*

The definition of our objective has led to the following of research questions:

- What is the land distribution legislation in the area? To what extent does the legislation influence the land use and land distribution?
- What are the dominant institutions[5] in Pepela/Madlangala and how does these institutions influence the land use and land distribution?
- What are the impacts of norms, values and local rules on the land use and land distribution?
- How have the historical processes influenced the land distribution?
- Is the land tenure system a possible constraint for land use and land distribution in the area

[5] We understand these institutions as the traditional authorities e.g. the chief.

2. Methods

2.1. Introduction

To investigate the apparent unutilised land in Pepela we chose as a starting point to identify the formal and informal tenure system because we perceived that the informal tenure system and complex land distribution processes could be constraint for land use in the area. We used a variety of methods, which included transect walks, participant observation, GIS-P[6] mapping, collecting of life stories and structured interviews with households and key informants. The data obtained through these methods revealed a sophisticated net of interconnectedness of the socio-economic, political, historical and environmental aspects that influenced the livelihood of the villagers and hence the use of the land in the area.

This information resulted in a change of focus in order to go in-depth with other possible constraints for land use than the land distribution and land tenure systems. The methods that now were chosen were semi - and unstructured interviews, collecting of personal stories to create a time-line, GIS mapping and soil sampling.

In the following paragraph the methods used through the fieldwork will be presented and discussed.

2.2. Transects and Participant Observation

As an introduction to the village and its connected areas we planned to do systematic transect walks as described by Mikkelsen (1995: 136ff). To get a preliminary impression and in order to visit some of the sites, which seemed to be of special interest we walked through the area with our guide Mr. Simpamla. Theses sites were identified using aerial photos - particularly abandoned fields, fields under cultivation, and an earlier settlement, that has been turned into an agriculture area. Our guide was a person of great knowledge in the problems concerning land use. He became our informant during all walks in the area, and we had continuously informal conversations with him gathering information. The fact that we used a local guide combined with the participant observation of people in their fields, made us believe that we had obtained data similar to the information, which would be revealed during systematic transect walks. However, if we had conducted systematic transects, we probably would have obtained other data of great relevance and understanding for our objectives even though we were walking through areas of no obvious interest.

[6] Participatory Geographical Information Systems

We made use of participant observation and informal conversation throughout our fieldwork to collect basic knowledge about the villagers and to let the villagers become aware of our presence (Cohen, 1984; Kemp & Ellen, 1984). One way of being introduced to the local community was to attend the service at the local Methodist church in Pepela. Not only to show the people respect but also to let them become aware of our presence and to meet villagers, who would be willing to be interviewed.

The participant observation was a good method to get inspiration and useful in the interviews since it helped us identify some indicators of problems and opportunities in land use.

2.3. GIS-P

In the pre-phase of the fieldwork the GIS was used to analyse time-series of aerial photos and satellite images for change in land use patterns. This analysis resulted in a number of interesting pre-findings that provided us with an initial understanding of the historical use of land.

The plan was to use GIS-P, as a method for mapping information obtained from the respondents on their household's use of land (Cinderby, 1998:304). From the aerial photos we developed 11 detailed maps, which were used sketching the households and their connected fields (fig. 4).

The method did not work out as expected. The problems were those the respondents had very different abilities to look at aerial photos and that the coverage of the prepared photos was too small. Furthermore, we noticed that the younger people were better identifying features on the photos than the elderly.

It was an interesting attempt to make the respondents participate in creation of data and teach them how to look at maps and aerial photographs. We are still convinced that the GIS-P could be an advantage for other projects where physical borders are more indefinable which is not the case with well demarcated areas is.

We returned to traditional GIS - mapping of the fields connected to each household, which supported each household interview (fig. 5). This way we obtained an overview of the cultivated fields, and avoided a bias between farming and non-farming households. The method moreover, was used for crosschecking data from the interviews; e.g. we experienced a male respondent giving two-faced answers about use and ownership of a field. The reason for these answers was unclear but it could be due to either the positioning of the female interviewer or wrong translation of the Xhosa language.

2.4. Interviews

2.4.1. Household Informants

We conducted structured household interviews using an interview guide consisting of 16 questions (fig. 6) (Devereux and Hoddinott, 1993:28, Mikkelsen, 1995). Through the interviews we wished to obtain data on the land distribution and tenure system as well as other problems people in the village would perceived to be related to the use of land. We chose our informants using random stratified sampling tying to reach both farmers and non-farmers.

After three days in the field a total amount of 28 households were interviewed, which were twice the amount we expected. The structured interviews proved to be an effective method to gather general knowledge on land ownership including tenure system, distribution of land, inheritance and subsistence economy. The obtained information could at times be superficial, but proved to be useful to gain unified understanding of the topics within the group.

The structured interviews were also probing into general problems relating to the land use (fig. 6; question 15-16 in interview guide). Many of these answers related to physical and economic problems concerning land use rather than tenure problems. After a while we found that this could be caused by either the way the questions were phrased or the translation that somehow seemed to become a routine for our interpreter. Furthermore, we found that we were constrained from probing into subjects because of the interview was very structured. The data produced were constrained by these structured questions.

After the first three days we noticed a serious bias of elderly women among our respondents. Being aware of this we started searching for male informants, younger people and households that were active farmers.

Consistency in the answers led us to believe that the subject of tenure system and land distribution as the villagers perceived it had been covered. We needed more in-depth knowledge on the constraints for land use since we concluded the presence of other issues and relations. These were unknown to us previously and were issues such as lack of capital for inputs, stock theft, changed governmental policies, changed labour markets and geographical location.

Since the tenure system and land distribution issues, where covered and the interview guide for the household interviews did not help us to go more into depth with the apparent constraints, we turned towards semi- and unstructured interviews. We revised the interview guide and were now concerned on probing into the issues of labour market, stock theft, capital, government policy,

social values, geological factors, technology and inputs. Our experiences with this new interview guide (fig.8) were that the interview situations were more relaxed, and the interviewer had the choice of probing into the issues relevant in the specific situation.

2.4.2. Key Informants

To obtain data on the land distribution and tenure system from another point of view, than the villagers of Pepela we conducted structured key informant interviews (Devereux and Hoddinott, 1993:28, Mikkelsen, 1995). The key informants were a project officer from the local NGO 'Environmental and Development Agency' (EDA), a former employee at EDA, and a local land legislation lawyer working with land claims in the area. These informants all represented a professional view on the land tenure and land distribution issues.

The interview guide for these interviews (fig. 7) were not functioning as expected. The guide was very structured and this felt constraining for the interviewer and the interview situation. Instead we began improvising and the interview went smoother. In one case we observed that the interview guide worked really well, which was due to a well knowledge and talkative informant, and this created a pleasant interview situation. In the interview concerning land legislation, where the terminology is very difficult, we found it extremely useful to record the interview and transcribe it.

The data from the key informants revealed a comprehensive insight to the formal land distribution processes as well as an understanding of the problems and possible constraints coming from the tenure systems.

2.5. Life Stories and Personal Stories on Land Use

The life stories approach was intended to help us gain a more holistic personal view on land use. Especially life-stories would reflect the way the political system in South Africa impacted the individual's life and hence explain the personal land use pattern (Crapanzano, 1984; Devereux and Hoddinott, 1993:33; Francis, 1992).

In the field we found that it was difficult to carry out in practice. This was due to this method being more time-consuming than expected, the lack of intimacy when other people disturbed the interview situation as well as lack of rapport with the informant. Furthermore, it was difficult to talk about personal things like diseases (HIV/AIDS), Apartheid, and power structures in the village.

We revised the method and turned it into informal interviews on people's personal stories regarding land use. During the personal stories we collected narratives on special topics that could impacts and hence constrain the use of land. We chose these topics to be the betterment scheme, cattle theft,

unemployment and the changed conditions for migration work. Through this method we identified historical events that could illustrate personal as well as political and historical constraints related to land use in the area. This information was used to create a time-line with national and local historical events. We are aware of the very subjective data coming from these personal stories, and the fact that we as interviewers created a situation, and hence affecting the data produced.

2.6. Soil Sampling

In the household interviews, the informants stated the presence of different soil qualities. We therefore decided to gather 11 soil samples at different sites in order to verify these statements (fig. 10). We consider these samples important since we from these can help identifying the quality of the soils in the agricultural areas. The samples was analysed for plant available phosphorus, (Olesen et *al.,* 1954), and total organic nitrogen and organic matter content (Jensen, 1991).

2.7. Reflections on Group Work

The inter-disciplinarity in the group was an advantage, however, at the same time it did create challenges in understanding the different scientific approaches. We feel that the combination of disciplines was optimal. The constraint for success during the fieldwork was the different levels of motivation within the group. The skills and knowledge among the group made us able to split up into smaller groups conducting more interviews. We believe that our experiences within this group work have been a huge challenge for our understanding of intercultural co-operation.

3. **Findings and Analysis**

As a prior assumption we regarded complex land distribution and tenure system and hence insecure tenure rights to be the major cause for the many abandoned fields and thus the low agricultural production in the research area. In the following paragraphs we will discuss the land distribution and tenure system in Pepela from a household point of view and from the view of 'professionals' as NGO workers and a land legislation lawyer in order to identify whether these systems proved to be a constraint for the use of land.

Discovering that the land distribution and tenure system did not, at present prove to be a direct constraint since the villagers of Pepela seemed to have the rights to use the land as well as the real access to the land we started looking at their capabilities for utilising the land. The main focus was changed and constraints in people's capability to utilise the land were now investigated using the principle from 'Sustainable Rural Livelihood: a Framework for Analysis' (Scoones, 1998).

3.1. Land Distribution

3.1.1. Household Perception of Land Distribution Systems

In the household interviews, including the interviews with the headman and chief, there was a clear consistency in the answers regarding land distribution and the tenure system. All the households including the headman stated that the chief was the overall distributor of land and that his approval was necessary in all land matters apart from individual leasing arrangements. Most of the people had inherited their land but claimed that the initial allocation was decided and directed by the chief.

Regarding the distribution there was a consensus among the respondents on the following application procedure: To obtain a permit to use a specific piece of land the person applying for the land have to go through an informal system of land allocation. First the headman[7] and hereafter the chief[8] has to approve the request for land. After the initial approval the application is taken to a tribal council, which consists of representatives from the whole village. The tribal council will on the basis of recommendations from villagers that know the applicant decide whether he/she can obtain land use rights in the village. A feast will be held after the tribal council and the applicant shall pay the expenses. Some informants even stated that the applicant will have to give the chief either money or oxen in order to get his approval. This will mainly happen if the applicant is not known in the village by either kin or other relations. After this system of traditional approval the

[7] Headman of Pepela.
[8] Chief of the Madlangala area (Pepela, Mabula and Makomereng) is situated in Makomereng.

applicant will receive a letter of recommendation from the chief, which will be brought to the Department for Agricultural and Land Affairs. The Department for Agricultural and Land Affairs sends out an Extension Officer (EO) to measure the area pointed out by the chief. These measures are taken to the local Magistrate Court and Permission to Occupy (PTO) will be issued to the applicant.

At presents all the land in Pepela is allocated. The initial allocation had happened during the Betterment planning[9] in the late 1970s. During this intervention the personal user rights in the form of PTO were introduced. Re-allocation to new users is rare since all land transfer mainly happens through inheritance. All the villagers knew the system of the PTO and they hold one them self. Asking if we could see the PTO the villagers typically claimed that they where either lost or that they had thrown them away. The reason for this is unclear.

3.1.2. Key Informants Perception of Land Distribution Systems

On the subject of land distribution we furthermore conducted semi-structured key informant interviews with Mr. Dlamini a project officer from the local NGO 'Environmental and Development Agency' (EDA), Mrs. McLeod, which was a former employee at EDA and her husband Mr. McLeod, which was a local land legislation lawyer.

In the key informant interviews it was stated that the land in the area was regarded as communal land, which means that the land is assigned to the community but administered by the state/government. The land is, through a land allocation system, leased to a user for an undefined period. During this lease the user has to pay rental to the government. According to the key informants it was also the Land Magistrate Court that by issuing the PTO facilitated the actual allocation of land on the background on measures made by Extension Officers from the Department for Agriculture and Land Affairs. The key informants furthermore emphasised the importance of the chief since the allocation in the Magistrate Court was made only by direction of the chief who made the recommendation on whom could be allowed to get the rights to use land in the specific area. This meant that the chief was the overall authority deciding whether a person could obtain rights to use land as well as what land this person were allowed to use[10].

The rental charged for lease of land is approximately 25 Rand a year. Practically most people only pay at the initial allocation since they are not aware of the fact that it is a rent that should be paid every year. The lack of payment does according to Mr. McLeod somehow never create any

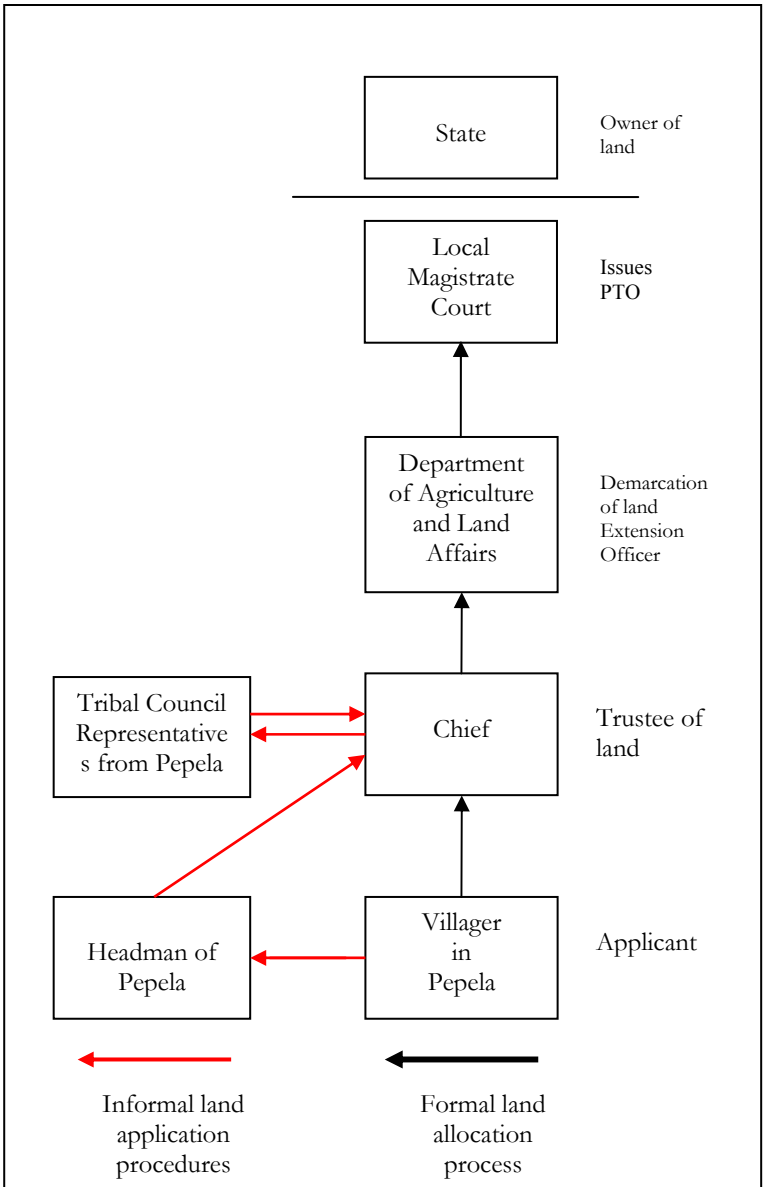
[9] For explanation of the Betterment planning, see paragraph 3.7.1

[10] The PTO to use the rangeland areas is held by the chief. It is issued by the Land Magistrate Court.

problems for the land users since the official system does not have the authority to cancel the PTO because of lack of payment. The mechanism of cancellation of a PTO is the responsibility of the chief and not the official system.

3.1.3. Land Distribution Discussion

Regarding the land distribution system the villagers and the key informants revealed quite similar information on the formal land allocation procedures. They agreed that it was the chief, who recommended whom the land should be allocated to. Hereafter the land is measured by an Extension Officer from the Department of Agriculture and Land Affairs and at finally the PTO is issued from the Land Magistrate Court. The difference between the information seemed to be that the informal and more traditional application procedure was expressed by the villagers. Here the importance of the headman, the chief and the tribal council in approving the applicants was stated. Especially the traditions of giving gifts to the chief, paying for a feast and the approving of applicants on the background of recommendations, kin relation etc. seemed to be a system consisting of informal rules and traditions. The informal application procedure was of great significance since the recommendation from the chief was the pre-condition for obtaining the PTO through the formal land allocation procedures.



Box 1. Diagrammatic illustration of the informal and formal land distribution procedures.

Box 1 illustrates the formal and informal land distribution processes expressed by the villagers, headman, chief and the key informants.

3.1.4. Household's Perceptions of the Tenure System

Regarding the tenure system all informants expressed a security of tenure since they regarded the rights to use the fields as exclusively theirs. Some claimed that the chief could take the land away from them either if they did not farm the land for a longer period or if misused. Since this had never happened they did not perceive it to be a problem.

This was supported by the headmen when he stated that people had to make their own decisions regarding re-allocation of land. This became apparent when asking the headman whether it was possible to re-allocate some uncultivated fields in the fertile alluvial plains.

3.1.5. Key Informants Perceptions of Tenure System

All key informants emphasised the tenure insecurity and the complexity and conflicts of land as of great importance.

The project officer Mr. Dlamini from EDA emphasized that all land were distributed, and the owners of the PTOs rather keep the land un-used than giving it to other people who wished to farm. This could explain the apparent un-utilisation of land in the area. Private leasing arrangements are possible but limited since the owner of the PTO can claim back the land after an initial investment by the leaser. Another possibility is sharecropping where the cultivation and investment is done by one farmer and the output shared equally between the cultivator and the owner of the PTO. These Sharecropping systems are based on private arrangement where the risk is carried by the investing farmer. Mr. Dlamini moreover stated that according to the official system the land could be taken away from the user if not farmed in a period of two years.

The Land legislation lawyer Mr. McLeod and the former employee at EDA Mrs. McLeod also emphasised the complexity of the land tenure systems. One area of potential conflict is the huge authority of the chief in land matters. The chief has the authority to take the land away from a person that he for some reason dislikes. Although it is possible to contest this decision it is very difficult to get an appeal through. The buildings are tied to the land and typically it is the wish to possess assets such as houses or other investments done to the land that creates these situations. Even though it is the chief who has the authority to set people off the land it is not possible to raise claims against him because he is not the actually owner of the land. Claims have to be passed

through the Land Administration Office. Based on this system Mr. McLeod stated that the chief's role as claimants of the land often prevented the villagers to invest in the land as well as on the land.

According to the key informants the inheritance system is also a source of problems in land claim issues. When people die then the PTO is withdrawn, and the chief fills out a form on who should inherit according to the customary inheritance system. The chief sends these forms to the local Magistrate Court where a new PTO is issued to the descendants. The customary system is complex because of polygamy. According to this system the first wife has the rights to the land even though the second wife has been paying for the investments in the land. Under such conditions it happens that the second wife and her children are evicted from the household. The notion of customary versus civic law, is according to Mr. McLeod typically one of the reasons for the complexity in land matters, since people take advantage of the system that match their interests.

3.1.6. Tenure System Discussion

The information obtained on the tenure system revealed that the key informants represented a somehow different view compared to view represented by the villagers. All key informants supported the initial considerations on problems related to the tenure system. This was strongly opposed by the information that we obtained from the interviews we conducted in the village.

To explain this difference we looked into the household interviews. The villagers did not express *any* constraints regarding their *access* to land or their *rights* to use land. This was despite the existence of the informal application procedures and the lack of ownership of land. At present, all the land in Pepela is allocated. Since none of the informants expressed any wishes of acquiring more land it seemed that the complex land allocation procedures was not a direct constrain. Regarding the tenure system people emphasised that it was unthinkable that land would be taken away from them, hence this expressed a sense of ownership and a feeling of tenure security.

Compared to the key informants, who expressed a very different view representing a somehow academic discourse on the land tenure and land distribution issues, the villagers are situated in a context where these issues can not be discussed isolated. They have to be discussed together with the present physical, social and economic situation that eventually will seem more constraining in their livelihood than the more abstract and unchangeable notions of land distribution and tenure system.

This was apparent since the land distribution and the tenure system did not seem to be expressed as constraints by the villagers, as were the presence of other and more obvious constraints for land use.

Such prevalent constraints were e.g. lack of capital for inputs, stock theft, changed governmental policies, changed labour markets and geological factors.

Based on these findings it became clear that the notion of complex land distribution and insecure tenure rights is not by the villagers perceived as a direct constraint for land use. Therefore we decided to change the research focus towards the constraints expressed by the villagers in Pepela.

3.2. Capability Focus

The levels of our research can be illustrated referring to the notions of the `Environmental Entitlement Model´ (Leach et *al.* 1997) (Box.2.). The framework is grounded in four notions: *Environmental Goods and Services, Endowments, Entitlements* and *Capabilities*. Here *Environmental Goods and Services* are seen as the traditional undifferentiated environment including the inherited dynamics in distribution, quality, quantity and the modifications which in part are made by humans. *Endowments* and *entitlements* are respectively the rights of the social actor to the resources, and the access the social actor actually gets in practice. How the social actor uses the endowments and entitlement to natural resources like land and thus creates well-being, depends upon the *capabilities* to utilise the resources.

So far we have concentrated on the land tenure and land distribution, which is the rights and real access to land; this is the notion of endowments and entitlements. However, discovering the villagers in Pepela seemingly have rights to use the land as well as the real access to the land we started looking at their *capabilities* for utilising the land.

Capitals

The *natural capital* can be described as the natural resources stocks (soil, water, air, genetic resources etc.) and all present environmental services (hydrological cycle, pollution sinks etc.) from which resources flows and services made useful for livelihood are derived.

The *economic capital* are the cash, credit/debt, savings, and other economic assets, including basic infrastructure and production equipment and technologies, which are essential for the pursuit any livelihood strategy.

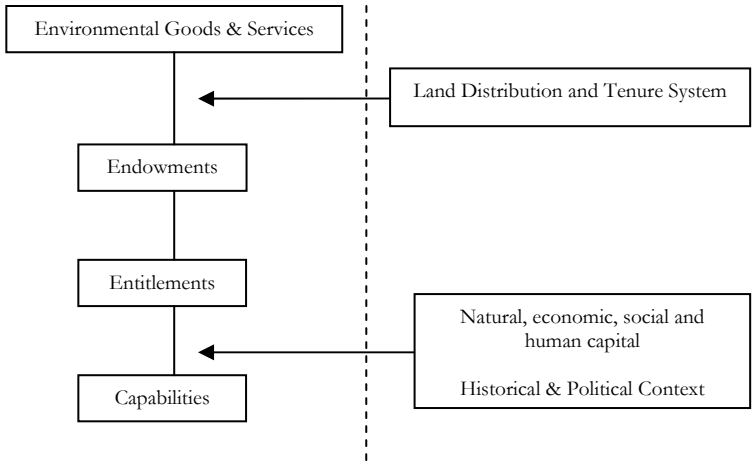
The *human capital* are the skills, knowledge, ability to labour, good health and physical capability that are important for the successful pursuit of different livelihood strategies

The *social capital* is the networks, social claims, social relations, affiliations, associations upon which people draw when pursuing different livelihood strategies requiring coordinated actions.

Box 2. The capitals defined by Scoones (1998)

To identify and analyse the capabilities to use natural resources in this case land we find the principles of 'Sustainable Rural Livelihoods: a Framework for Analysis' (Scoones, 1998) useful. Livelihood resources according to Scoones, consists of natural, economic, social and human capital (see Box 2 in text). The access to these capitals in a defined context e.g. political and historical will influence people's pursuit of livelihood strategies and hence their use of land. According to Murray (2001) the concept of capitals starts with the analysis of *strengths* rather than *needs*, and seeks to build on everyone's inherited potential. Additionally it is dynamic in its attempts to understand change and complex relationships (Murray, 2001: 6).

We find that the capabilities of people in Pepela to use land can be expressed through access to a combination of natural, economic, social and human capital. The combination of these livelihood resources (different types of capitals) results in the ability to pursuit different livelihood strategies and hence influences the ability to utilize the land. In contrast constraints for the utilization can be the lack of some of the above capitals. Furthermore, we find that the political and historical development have had a severe impact in the South African context. Through the analysis of micro-level data in relation to the historical and political macro-context we try to eliminate the boundaries of the conventional sectors such as formal/informal and not to view rural communities as isolated systems. According to Murray (2001: 6) this approach is people centred and has a holistic view because it tries to bridge between macro- and micro-levels of relations.



Box 3. The approaches used in this research project in the relation to the different scales in the Environmental Entitlement Framework (Leach et *al.* 1997).

In the following section findings will be presented and discussed according to access to different capitals and in relation to the historical and political context. We do not intend to separate the capitals from the context since they are interrelated and part of a complex cause-and-effect relationship.

3.3. Natural Capital

3.3.1. Soil, Erosion and Improvements

In general the environmental base in Pepela is poor and the majority of the informants mentioned soil quality as a constraint for the agricultural production. The soils did not seem to be heavily degraded but was generally of low fertility. To verify this 11 soil samples were taken using stratified sampling (fig. 10). In the soil samples no connection between soil fertility and sampling location appeared. The results showed a low content of nitrogen; phosphorus and carbon. This could be due to an intensive agricultural production in the past. Furthermore, they show that the occasionally flooding of the alluvial plains does not add a significant amount of nutrients. However, the samples do not verify the types of soils – it is the water holding capacity which is important during the dry periods. This possible different soil properties are between the upper agricultural area and the alluvial plains can thus explain the villager's preference for the latter.

Soil erosion is mentioned by the majority of the informants as a problem. The properties of the soil combined with a minimum of vegetation cover and heavy rain makes the fields vulnerable to erosion. From several informants we recognised that there had been governmental agricultural schemes in the area in the 1930-40s. The governmental scheme introduced contour ploughing in order to prevent erosion. This was done by lowering the slope to create better possibilities for the agricultural production. Moreover, there were established waterways to catch of running water. These investments in land can be identified on the Corona satellite image from 1964 and the aerial photos from 1975 and 2000. From the examination of the expansion of the settlement area and the agricultural activity, we can observe that there has been a decrease in the agricultural activity (fig. 11).

3.3.2. Rainfall

Water was mentioned as a constraint to some soils, and lack of precipitation results in a gross irrigation requirement of 68 mm during December and January[11], which are the important months of the growth season. Several informants mentioned that the first rain of the growth season occurs much later than previously, and that this some years resulted in very little, or even no output from

[11] Data from the SLUSE – South African Homepage referring to the 'South African Atlas of Agro-hydrology and Climatology'. http://www.agsci.kvl.dk/~adn/SA2002/ accessed 2003.03.10.

the fields. Moreover, heavy hail storms were mentioned as having severe impact on the crops and thus sometimes destroying or lowering the yield. During our fieldwork we experienced one and eventually some crops were damaged. We have not been able to verify the shift in climatic conditions over time but there were statements about the region being more prone to drought now than earlier. This shows a general trend, and is supported by Vogel (2000: 298).

3.3.3. Geographical Location

Several informants expressed that the geographical location of Pepela have influenced the land use situation in different ways. Firstly, the position of the village at a dead-end road does not create optimal opportunities for access to markets and trade with the surrounding regions. This access to Pepela is hindered after heavy rains due to bad infrastructure. Secondly, the close proximity to the Lesotho border have had a high impact on the amount of cattle theft compared to Mabula, which is located on the other side of a wide river valley keeping thieves away. Thirdly, the characteristics of soils in the main agricultural area are generally poor compared to Mabula, which is located on a lower level using the fertile valley of the Kinira River as their main agricultural area (fig. 12).

3.4. Economic Capital

3.4.1. Lack of Finance

When asked directly, why an informant were not growing the fields, the answer was typically that they did not have the *means* in terms of cash to buy fertilizer, hire oxen, a tractor and other tools for ploughing. At present, the lack of money, savings and access to credits is a general problem, and due to the households composition the majority of the household income derives from old-age pension[12].

3.4.2. Migration and Employment

Due to increased competition from the world market after the end of Apartheid the South African economy have experienced an economic decline. Furthermore the mining industries have brought in technologies which, makes labour unnecessary. Other reason for the decline in migration work is among others the declining gold prices (Nel, 2000).

[12] According to our key informant Mr. Dlamini from EDA a household survey that was carried out in Madlangala revealed that 80% of the household's income derives from elderly grants.

This overall economic decline was confirmed by some informants. According to them the decline started by the end of Apartheid and was affecting the need for migrant work in the industries.
During the Apartheid period the villagers had received their main income from migrant labouring, since the area was as labour reserves for white farms and industry (Palmberg and Strand, 1995:31-3). Nationally, the unemployment rate has risen since 1990s[13] (Ross, 1999:154-5).
Many of the men had worked outside the village for longer periods of time. The older generation had been migrant workers in Johannesburg, Durban or other large cities. Many of these migrant workers had now returned to their homes. At present, the younger people were reliant on part time work in the local areas. Questioning young people about land use and whether they wanted to be farmers - some expressed a wish to farm but emphasised the lack of input as the major constraint. Common for them was that they believed their work situation and opportunities for make a living in Pepela to be limited. Many articulated wishes of migrating to town, going overseas and getting an education. Where some of the young men wanted to farm the young girls expressed wishes for getting an education. A large number of the youngsters could not continue their school because of the lack of money like e.g. our local translator Miss Khohliso, who had already started an education but was now, hindered continuing it. One young man wanted to travel to UK to obtain some undefined work that he had seen advertised in a newspaper. Another informant, who had a well-paid job as lawyer in Pietermaritzburg also emphasised the lack of employment opportunities in the area. Due to the fact that he was child of civil servants in the previous government he had been able to go to UK to get his education and now he had returned to the Pepela only to visit his family. He was aware that he was privileged getting an education.

3.4.3. Cattle Theft

Cattle theft was stated as a huge constrain for agricultural production in the area thus and the reason why we chose to identify the narratives on this topic. Interviewing villagers on the topic they all stated that it started in the 1970s but escalated in the mid 1990s[14]. From occasional stealing of cattle in the mountains, raids to the villages started where armed gangs went to the households to rob the cattle. The robbers were shooting in the air to warn the villagers to not come out of their houses.

[13] Since 1994 500,000 jobs have been lost. According to official numbers the unemployment in South Africa is above 23 % (other numbers calculated from a broader definition of employment say 36%). The GNP in South Africa is just below 3 % pr. year, which is far less than the 6% that is needed to eliminate the general unemployment (Danish Foreign Ministry (2003) *Landestrategi for Sydafrika*, Danida, Copenhagen).

[14] This corresponds to the findings by Bjarnadóttir et *al.* who conducted a survey of the patterns of livestock production in the area (2001).

Several villagers have been killed during these raids, and some informants stated that these events were discouraging the young men to engage themselves in farming due to the high risk of losses. One informant stated that her husband had removed the cattle to a place far from the mountains in order to prevent losses.

To mitigate for the severe cattle theft the military had set up a permanent camp in the mountains and soldiers were set out to patrol on a regular basis. The last raid in the village had been two years ago and since this these incidences had mostly happened in the mountains were herd boys look after the cattle. Our informants stated that the presence of soldiers did not stop the thieves hence the motivation for investing in cattle was still lacking. One informant stated that the theft was instigated through a conspiracy of people from Makomereng and Lesotho. The people in the Makomereng area that participated in the crime would get cattle as payment for the cattle they stole and brought these to the border. The informant had noticed that some people in the area that did not previous had cattle now had several. Mitigation measures as showing of registration and vaccination papers, when the cattle were dipped had been taken.

The loss of cattle has had a major impact on the land use due to several factors. The cattle are one of the traditional status symbols and an investment. Furthermore, cattle are used for all kinds of traction within the agricultural production. This resulted in a dramatically increase in expenses if people had to hire other means for traction. Manure from the cattle is an effective and free input to the home gardens and fields, which now has to be substituted by modern fertilizer from the shops.

3.4.4. Maize – Yield and Prices

The fluctuation of food prices was mentioned as a constraint because it often resulted in the costs for growing the crop exceeding the market price. One young woman, whose husband was a migrant worker, was growing maize in her home garden. Her expenses in growing crops were nearly twice the market price (see Box 4 in text). When asked

Household no. #15.

The household cultivates only maize in the home garden. The cultivated area was approximately ¼ hectare. The area yields 160 kilos (two bags). The informant stated that she spend 800 Rand to buy seeds and fertilizer.

Maize:
The price of maize in the local shop was 240 Rand for an 80 kg bag. In the nearest town of Matatiele, the price at wholesale was approximately 210 Rand an 80 kg bag.
The price for grinding the maize grain into flour is 5 Rand for 10 kilos.

Oxen:
The price for hiring a span of oxen to plough a field/home garden is around 50 Rand plus food for the workers.

Box 4. Local prices associated with the agricultural production.

why she kept cultivating when it was not economically feasible she stressed that the yield was an important supplement during the dry season. One informant said that the maize is the most important crop because it is stabile, suits the local environment and can be utilised in many ways for consumption. Only a few of the households we interviewed produced a surplus e.g. vegetables that they were able to sell to others. Most of them did not produce enough in the home garden and/or field to make a living of it throughout the year. The time remaining, they survived on buying food from the local shops and the few surplus makers.

3.5. Human Capital

The general health conditions in the Madlangala area are not optimal. Some children are exposed to mal nutrition, and people are complaining about the increasing shortage of yield from their land, which is not enough to cover their needs. Beside the food situation there are the public concerns about the spread of HIV/AIDS. We tried to probe into this subject with great difficulties, and it turned out that most respondents denied the existence of the disease, and assured us that people are dying from other diseases[15]. In the village there are a remarkably high number of elderly people. They used to cultivate their land but now many of them complains about the little strength they got left, and many fields are left uncultivated. Possibly, there is a need for labour that can work in the fields. Maybe this is because of the imbalance in the household composition.

A lot of young and middle-aged women expressed a wish engage in sharecropping but they lacked the means and the knowledge to do so. The younger generation also emphasised their lack knowledge to do agriculture, especially if they had spend a lot of their lives in urban areas working, and now were forced back to their village because of unemployment.

Additionally, the principal of the local school in Pepela stated that the school curriculum had been changed, and the agricultural classes had been removed during the post-Apartheid government. In his opinion this would be the subject in decreasing his pupils' knowledge about farming practises, and be a huge loss for the country. Furthermore, he explained the parents in general have lost motivation to encourage their children to get an education, and he expressed a deep concerns for the people and their children's (especially males) high abuse of euphoric liquids.

[15] A high number of people are infected with HIV/AIDS, leaving large numbers of orphans and has an influence of the composition in the household (Andersen, 2003)

3.6. Social Capital

During a few of our visits in Pepela we observed young men working together in the home gardens and the fields. This was identified as a communal labour scheme, where they work half a day in field and for payment they received a meal and kaki-juice[16]. Based on these observations, it seemed peculiarly, that the elderly people expressed the presence of a lack of spirit for community work and the laziness of young people as a constraint for land use. We did not contest this laziness but many young people seemed to be unmotivated by the lack of money and wage work. Three of our informants were engaged in sharecropping (Box 5).

One informant stated that the numbers of women, who have been widowed, had increased in the past years, and that they therefore have been marginalised in the society. With the loss of their husband, they also lost savings for inputs in agricultural production. Some widows told us that they were very dependent on the help from social networks such and their children and neighbours.

There were evidences for changing social values. Many young people were uninterested in doing agriculture, and expressed wishes for an education or migrating. The older generation perceived the change of values as if the youngsters were lazy. The elderly and middle-aged people are still considering Pepela as an agricultural society but emphasized the need for stronger cooperation among the villagers and the lack of a general community spirit.

Different wishes for cooperation were expressed in suggestions for making farmer organisations and community project.

Sharecropping

Household #5 and #6
The households had been engaged in sharecropping for the past two years. This was done to get higher yields and to produce more effectively. The plot was well fenced and located on the fertile alluvial plains by the river.

The two households were equally dividing the labour and the associated costs.

They mainly produced vegetables (cabbage, spinach and potatoes). The surplus was sold to other villagers.

Box 5. Example of sharecropping

[16] A strong yeasty alcoholic drink brewed on maize and sorghum.

3.7. Personal Stories on Land Use

During the collecting of personal stories, analysis of satellite images as well as through the interviews we have tried to identify historical structures that could illustrate personal as well as political and historical constraints related to land use in the area. This information was used to create a time-line displaying national and local historical events (fig. 9). In the following paragraphs we have selected a few personal stories that illustrate how the political and historical processes have influenced the land use in Pepela.

3.7.1. Betterment Schemes

From the analysis of the aerial photos we noticed that parts of Pepela had been moved (fig. 11). This information inspired us to interview people on their personal stories regarding this movement of the village. The local chairwoman for community projects in Pepela had experienced this movement herself and recognised it as a part of the Betterment planning[17] in the late 1970s. According to her it was the government that through the chief facilitated the movement and that the households did not have any say in this resettlement. Extension officers measured out the land and gave it numbers where after the household on the demarcated land where resettled. Compensation where given but not high enough according to the informant. The reason for the resettlement was according to the informant that the land she was moved from had to be allocated to agriculture[18]. When interviewing other informants on the subject they often expressed that it was the chiefs' decision. Some even stated that he wanted the land himself, and others complimented that it was done to separate the tribes in the area (Xhosa/Hlupi and Sotho). The headman supported the notion of the movement as being a part of the Betterment Scheme. He told us that the chief, on advice from the Nduna (medicine man) had divided the area into sections that each should be suitable for growing different things. Households in these areas where resettled in order to use the full agricultural potential from the land in these fertile areas.

[17] The Betterment Scheme was a 'development' strategy of the Nationalist government where the aim was to prevent decreasing soil erosion in the homelands and facilitate education and service provided by moving the scattered rural population into villages or 'closer settlements'. Village arable plots and grazing areas would be formally established and demarcated only for those, who hold farming rights. By assigning economically feasible plots and demarcating 'betterment villages' to the less arable land, productivity was expected to increase (Dollar & Goudie: Environmental Change, In: Fox & Rowntree (2000) – *The Geography of South Africa in a Changing World,* p.57, Oxford University Press, Oxford).

[18] An informant stated that the site was suitable for sorghum production.

3.7.2 Apartheid

One man from 1942, romanticised the past and stated that the agricultural support had disappeared with the Nationalist Government in 1994. According to him the ANC government supports industrial policies instead of agricultural policies. Subsidies to fertilizer, seeds and dipping have been removed, which restricted him and the other villagers, to do agriculture to the same extend as was possible during the Apartheid period. He told us that he now only cultivated his home garden since he could only afford fertilizer and seeds for this limited area. He also mentioned that the migrant workers had started returning from the mines, when ANC came into power, and that this had become worse when the sitting President T. Mbeki took over in 1998.

3.7.3 Stock Trade and Contour Ploughing

A male informant born 1931 explained to us how stock-trade used make up a large income for many people in the area. The community were breeding cattle, and the trade were facilitated by white people in the area. This ended with the creation of the homelands in approximately 1958 were the white people that facilitated the trade left the area. According to this informant, the stock trade was the main potential livelihood strategy in the area since he did not believe in the agricultural potential. This respondent furthermore mentioned contour ploughing schemes, which were introduced in the area in the early 1930s. We have identified terraces and waterways in the area that could belong to this period (fig. 11). According to the informant it was the Nationalist government that had introduced the schemes and in doing so they imposed their will on the black people in the area. Later on the government provided the community with tractors to do the ploughing of the terraces. These production methods were never properly adopted in the community since the government only instructed people without building up the capacity to continue the scheme. Furthermore, the government never asked the people for their needs and wishes.

4. Conclusion

4.1. Land Distribution and Land Use Systems

In the following paragraph we answer our initial research questions in order reach our objective of identifying social and historical processes of land use and land distribution in Pepela. This is to identify possible present constraints and future opportunities for land use in the area.

In paragraph 3.1 we identified the *land distribution legislation* in Pepela and discussed its influence on land use and land distribution. The formal legislation process consists of PTO registration system that gives people user rights to specific areas. This is either for settlement or for agricultural use. We have furthermore identified the headman, chief and tribal council as the *dominants institutions* in Pepela because of their central role in the informal land allocation processes, especially during the application procedure. In this procedure we identified how *norms, values and local rules* as gift giving and approvals by the tribal council were inherent in the system. At present all the land in Pepela is allocated and re-allocation to new users is rare since all land transfer mainly happens through inheritance. People do not seem to be willing to give up their rights to use land (PTO) even though they do not use it. It is although important that we did not talk to any informants that at present wished to obtain more land but several stated that individual leasing arrangements were possible. All the informants stated that they had access to land and lack of it was never considered to be a problem. Since the villagers did not express *any* constraints regarding their *rights* to land or their *real access* to use land they can be set to held the endowments as well as the entitlement to the land. The Betterment planning was identified as one of the *historical processes* influencing the land allocation. This planning facilitated the division of land into categories as agricultural, settlement and rangeland areas. Another policy of the Betterment planning was the initial issuing of individual farming rights (PTO).

Throughout our fieldwork we realized that the notions of complex land distribution and insecure tenure rights were not according to the villagers an apparent constraint for land use. They perceived the physical, social and economic situation as more constraining than the abstract and unchangeable notions of land distribution and tenure rights. The villagers of Pepela are situated in a context where these issues can not be discussed in isolation. After the initial research we decided to change the research focus towards the newly discovered and for the villagers more apparent constraints.

In following paragraph we will reach our objective of identifying the possible present constraints and future opportunities for land use in Pepela. We will do that with an emphasis on people's capabilities to use land.

4.2. Constraints and Opportunities for Land Use

In paragraph 3.2 - 3.7 we have identified constraints for land use in Pepela. We have discussed how the access to as well as the combination of different capitals influences the capability of people to pursuit different livelihood strategies and hence their ability to use land. In the following sections we will discuss the capitals inherent in the community as well as lack of the same capitals.

Despite the presence of natural capitals as land and water the general agricultural productivity in Pepela seems to be rather low. Furthermore the stability of agricultural production often was jeopardised by drought, hail or cattle browsing from the unfenced fields. The neighbouring town of Mabula is characterised by access to natural capitals as e.g. fertile soils. This is due to its location on a lower level using the fertile valley of the Kinira River as the main agricultural area. Compared to Mabula - Pepela's proximity to the border of Lesotho has had a high impact on the cattle theft.

Mabula is located on the other side of a wide river valley, which possibly is keeping thieves away.

The lack of economic capital seemed to be the overall concern for the villagers in Pepela. Especially the need of means for input in agricultural production prevented cultivation of the fields. The absence of economic capitals as savings, access to credit and cash were mentioned as the main constraints for the informant's abilities to engage in agricultural production.

The economic capital is influenced by the broader economic, historical and political context.

The general economic decline in South Africa has lead to decreasing requests for wage labour e.g. in the industries. Since the area historical has been a labour reserve for the mining industries this has resulted in an increasing unemployment in the area. People in the area had been reliant on their savings from migrant work to buy agricultural input and lack of these savings can therefore be considered a constraint for agricultural production.

The changes in the access to capital have influenced the livelihood strategies for people in Pepela. We believe that people in a situation of lack of economic capital will chose to cultivate their home gardens because of its proximity to the household and hence access to water supplies from the water taps. The composition of crops and vegetables in the home gardens has been changed and now

maize is the main crop that is cultivated (fig. 13). Furthermore, the home gardens are due to fencing protected from grazing cattle and crop theft. The abandoning of the fields was a widespread strategy in Pepela.

Cattle are vital for use of land in the area and many villagers stated that it was due to the lack of cattle that they had stopped farming. The shortage of cattle was according to the villagers the widespread cattle theft in the area. Another reason for this shortage could be the removal of subsidize for cattle dipping, which had made diseases spread in the area.

The human capital in the village was characterised by not good physical conditions. Besides this there was a majority of people expressing that they did not possess the kills and knowledge to do agriculture.

Social capital in the form of networks was present in Pepela. Many of the households consisting of elderly people with their grandchildren were reliant on the help from family, friends and neighbours. The limited workforce in these household constrained people's ability to farm on a larger scale since there was no access to labour. Regarding the social capitals of education or the requirement of professional skills after Apartheid – the youngsters are aware of their rights to get a profession but they rarely have the means to utilise their newly obtained rights. Furthermore, they still neglect the importance of agriculture. They have grown up experiencing the high risks of agricultural production. They regard agriculture as old fashioned since it often is on subsistence level, which young people rarely consider it as an attractive livelihood strategy.

The personal stories have illustrated how agricultural policies in Pepela have always been implemented from the top governmental authorities through the traditional authorities down to the individual. The tribal institutions have thus acted as administrative 'puppets' of the state, which have increased their authority in the community. The dependency on outside authorities e.g. development organisations or the government subsidies has been pronounced in area. The decision-making on agricultural issues has always taken place above community level, which have made people used, to and reliant on outside authorities. These historical and political processes has de-motivated individual decision making and created a feeling of powerlessness in the community.

The future opportunities of land use in Pepela do not seem bright. The community was characterised of lack of all kinds of capital which influenced their capabilities of using their endowments and entitlements and hence influencing their pursuit of livelihood strategies. Due to lack of the capitals which was influenced of the broader context the constraints for land use were in most cases overwhelming. We are not able to make any recommendations on how this situation can be changed since decisions that could mitigate these constraints are seemingly tied to the wider political and economically context on which these people at present have no influence.

Through this analysis of micro-level data in relation to the historical and political macro-context we have in this research tried to eliminate the notion that former homelands always are associated with over-crowdedness and that the natural resources in these areas are over-utilized and heavily degraded. We have identified and characterised causes for the unutilisation of land and hence present constraints for land use. Through this analysis we have eliminated the boundaries of the conventional sectors such as formal/informal and avoided viewing rural communities as isolated systems. We have concentrated on the people since we have discussed the constraints for land use expressed by the villagers. Furthermore, we have through this bridging between macro and micro levels of relations tried to reach a holistic level of understanding.

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APPENDIX

Table of Contents

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Abstract

Fieldwork was carried out in January 2003 in the village of Pepela in Eastern Cape, South Africa. The objective was to identify and characterise land use and land distribution in a former South African homeland. The research aimed at investigating the causes for the apparent unutilisation of land and hence the present constraints and future opportunities for land use.

Different perceptions of land distribution and tenure systems are described and discussed. Furthermore, the presence of other and more obvious constraints for land use are identified. Pepela is characterised by the lack of natural, economic, human and social capital, which influences the villager's capabilities of utilising the land that they seemingly have the rights and access to.

The study stresses the importance on how people's livelihood and hence their use of land are connected to their access to and use of natural resources through a changing political, economical and historical context.

1. Introduction

Large numbers of poor people in developing countries base their livelihoods on use of natural resources. Livelihoods diverse and technologies develop, influencing people's use of resources. Increasing demands from people and society can put nature under pressure, which may result in degradation and social conflicts as well as in new ways of understanding and managing nature. The access to and use of natural resources is in turn influenced by the legal (formal and customary), economic, and political institutions through which people gain access to and derive benefits from natural resources.

During the Apartheid period in South Africa, the majority of the black population was restricted to live within homelands. Combined with the broader historical and political context this resulted in an unequal access to land, which today after the ending of the homeland policy is still evident.
Since the African National Congress (ANC) came into power in March 1994 there has been a political will to implement land reform which should lead to a more equitable society[1].

The former homelands have usually been associated with over-crowdedness and therefore it is widely believed that natural resources in these areas are over-utilized and heavily degraded[2] (Turner, 1998). However, in some areas such as in Pepela, this over-crowdedness does not seem to be evident and large areas are seemingly left unutilised[3], and the soil not particularly exhausted. This research project aims to identify and characterise land use and distribution in a former South African homeland in order to analyse the apparent unutilisation of land hence present constraints and future opportunities for land use.

[1] An eighth draft for a land rights bill (land reform) is currently in a period of public comment, and the point of agreement seems still too far away. The land rights bill seeks to extend tenure security to occupiers of land under traditional leadership and hence unlock the economic potential of rural land. Security of tenure is a constitutional right. The land rights bill seeks to transfer state land in the former homelands to communities which must develop and register "community rules' for the process of land transfer. It is a requirement that communities appoint administrative boards to represent them in the process. As legal entities, these boards can issue free-hold title deeds to individuals in communal areas, who can then lease, mortgage or sell their land (Mail&Guardian: issue 11, January 17th to 23rd , 2003; Pietermaritzburg)

[2] This is the neo-Malthusian theory extending the classical theory (mainly concerned on population growth exceeding level of subsistence) applying the supply of other resources material as well as food (Mather & Chapman: *Environmental Resources,* p. 21 (1995), Addison Wesley Longman Limited, Harlow).

[3] The term un-utilisation presumes a notion of optimal utilisation. Through out this project we use this term in a agricultural sense. This means that un-utilisation is to be understood as not using the full agricultural potential of the land.

1.1. Field Site Description

The village of Pepela is located at the foothills of the mountainous Drakensberg Region close to the Lesotho border. The village is situated in Madlangala, which is a part of Maluti District, Eastern Cape. The district was during Apartheid a part of the Transkei homeland and was one of the areas furthest from the administrative capital Umtata. Therefore, Pepela relied on the services from the neighbouring town Matatiele, which has been a part of the KwaZulu-Natal since 1960 (Turner, 1999: 6).

Pepela is located at a height of 1500 to 1600 meters, with the surrounding mountains reaching heights of more than 2500 meters. The village is at the very end of a main dirt road and is somewhat isolated from the surrounding markets and services (fig. 1). The area of the village can be roughly divided into three categories; settlement, agricultural and rangeland (fig. 2).

The settlement area consists of approximately 135 households[4], which we divide into three main residential areas, Pepela I. Pepela II and Goxe (fig. 3). Each household is on a plot of around 50 x 50 meters (¼ ha). Often only a small bit of the plot is used for horticulture, e.g. vegetables and fruit trees while the remaining is used for field crops like maize. If the household has any cattle these are usually kraaled here at night and sometimes stall fed for a part or all of the year. The village has an effective and reliable water supply from several taps located around the village.

The soils in the agricultural areas are regarded to be of poor quality, and have a spatial variation between sandy dry areas and alluvial floodplains. The typically division of the areas are steep slopes of 18° which are subject to gully erosion. The upper agricultural areas have a mean slope of about 2° and are in dry periods subject to drought. The alluvial areas are frequently flooded and are every year waterlogged during the rainy season. A rough estimate shows a total agricultural area of 180 hectares which, equally divided between the 135 households, leaves a potential of 1.3 hectares for each. The rangeland areas are primarily used for grazing.

1.2. Methodological and Theoretical Approach

To obtain data on the land use and land distribution a wide range of methods where used. The used methods are focusing on qualitative data rather quantitative. The actual numbers of days available for fieldwork was eight which brought in certain trade-offs in the choice of methods (paragraph 2).

[4] The population in Pepela was from the Xhosa/Hlupi and Sotho tribes)

Our main thesis was that the complexity in land distribution processes and tenure systems are the main cause for the apparent un-utilisation of land. Therefore we found it important to identify people's rights to resources *(endowments)*, people's real access to resources (*entitlement*) and people's ability to utilise the resources (*capabilities*) (Leach et *al.* 1997: 16-18). Based on this we wanted to identify endowments and entitlements concerning land for the villagers in Pepela. Finally, we wanted to identify people's capabilities, which provide them with the ability to utilise the resources they have the rights and real access to. These capabilities can be expressed through analysis of people's access to natural, economic, social and human capital. In contrast, constraints for the utilization are the lack of the above capitals (Scoones, 1998: 5). Furthermore, the access to these capitals is influenced by the context in which people are situated. In this research we have concentrated on the political and historical context.

1.3. Objective and Research Questions

To understand the unutilisation of land in Pepela we want to identify how people's interactions with land as a natural resource is connected with their livelihood strategies unfolding in complex power relations, informal allocation systems, institutionalised tenure systems within a political and historical context.

This has led to the following main objective: *to identify the social and historical processes of land use and land distribution in Pepela, in order to identify possible present constraints and future opportunities for land use in the area.*

The definition of our objective has led to the following of research questions:

- What is the land distribution legislation in the area? To what extent does the legislation influence the land use and land distribution?
- What are the dominant institutions[5] in Pepela/Madlangala and how does these institutions influence the land use and land distribution?
- What are the impacts of norms, values and local rules on the land use and land distribution?
- How have the historical processes influenced the land distribution?
- Is the land tenure system a possible constraint for land use and land distribution in the area

[5] We understand these institutions as the traditional authorities e.g. the chief.

2. Methods

2.1. Introduction

To investigate the apparent unutilised land in Pepela we chose as a starting point to identify the formal and informal tenure system because we perceived that the informal tenure system and complex land distribution processes could be constraint for land use in the area. We used a variety of methods, which included transect walks, participant observation, GIS-P[6] mapping, collecting of life stories and structured interviews with households and key informants. The data obtained through these methods revealed a sophisticated net of interconnectedness of the socio-economic, political, historical and environmental aspects that influenced the livelihood of the villagers and hence the use of the land in the area.

This information resulted in a change of focus in order to go in-depth with other possible constraints for land use than the land distribution and land tenure systems. The methods that now were chosen were semi - and unstructured interviews, collecting of personal stories to create a time-line, GIS mapping and soil sampling.

In the following paragraph the methods used through the fieldwork will be presented and discussed.

2.2. Transects and Participant Observation

As an introduction to the village and its connected areas we planned to do systematic transect walks as described by Mikkelsen (1995: 136ff). To get a preliminary impression and in order to visit some of the sites, which seemed to be of special interest we walked through the area with our guide Mr. Simpamla. Theses sites were identified using aerial photos - particularly abandoned fields, fields under cultivation, and an earlier settlement, that has been turned into an agriculture area. Our guide was a person of great knowledge in the problems concerning land use. He became our informant during all walks in the area, and we had continuously informal conversations with him gathering information. The fact that we used a local guide combined with the participant observation of people in their fields, made us believe that we had obtained data similar to the information, which would be revealed during systematic transect walks. However, if we had conducted systematic transects, we probably would have obtained other data of great relevance and understanding for our objectives even though we were walking through areas of no obvious interest.

[6] Participatory Geographical Information Systems

We made use of participant observation and informal conversation throughout our fieldwork to collect basic knowledge about the villagers and to let the villagers become aware of our presence (Cohen, 1984; Kemp & Ellen, 1984). One way of being introduced to the local community was to attend the service at the local Methodist church in Pepela. Not only to show the people respect but also to let them become aware of our presence and to meet villagers, who would be willing to be interviewed.

The participant observation was a good method to get inspiration and useful in the interviews since it helped us identify some indicators of problems and opportunities in land use.

2.3. GIS-P

In the pre-phase of the fieldwork the GIS was used to analyse time-series of aerial photos and satellite images for change in land use patterns. This analysis resulted in a number of interesting pre-findings that provided us with an initial understanding of the historical use of land.

The plan was to use GIS-P, as a method for mapping information obtained from the respondents on their household's use of land (Cinderby, 1998:304). From the aerial photos we developed 11 detailed maps, which were used sketching the households and their connected fields (fig. 4).

The method did not work out as expected. The problems were those the respondents had very different abilities to look at aerial photos and that the coverage of the prepared photos was too small. Furthermore, we noticed that the younger people were better identifying features on the photos than the elderly.

It was an interesting attempt to make the respondents participate in creation of data and teach them how to look at maps and aerial photographs. We are still convinced that the GIS-P could be an advantage for other projects where physical borders are more indefinable which is not the case with well demarcated areas is.

We returned to traditional GIS - mapping of the fields connected to each household, which supported each household interview (fig. 5). This way we obtained an overview of the cultivated fields, and avoided a bias between farming and non-farming households. The method moreover, was used for crosschecking data from the interviews; e.g. we experienced a male respondent giving two-faced answers about use and ownership of a field. The reason for these answers was unclear but it could be due to either the positioning of the female interviewer or wrong translation of the Xhosa language.

2.4. Interviews

2.4.1. Household Informants

We conducted structured household interviews using an interview guide consisting of 16 questions (fig. 6) (Devereux and Hoddinott, 1993:28, Mikkelsen, 1995). Through the interviews we wished to obtain data on the land distribution and tenure system as well as other problems people in the village would perceived to be related to the use of land. We chose our informants using random stratified sampling tying to reach both farmers and non-farmers.

After three days in the field a total amount of 28 households were interviewed, which were twice the amount we expected. The structured interviews proved to be an effective method to gather general knowledge on land ownership including tenure system, distribution of land, inheritance and subsistence economy. The obtained information could at times be superficial, but proved to be useful to gain unified understanding of the topics within the group.

The structured interviews were also probing into general problems relating to the land use (fig. 6; question 15-16 in interview guide). Many of these answers related to physical and economic problems concerning land use rather than tenure problems. After a while we found that this could be caused by either the way the questions were phrased or the translation that somehow seemed to become a routine for our interpreter. Furthermore, we found that we were constrained from probing into subjects because of the interview was very structured. The data produced were constrained by these structured questions.

After the first three days we noticed a serious bias of elderly women among our respondents. Being aware of this we started searching for male informants, younger people and households that were active farmers.

Consistency in the answers led us to believe that the subject of tenure system and land distribution as the villagers perceived it had been covered. We needed more in-depth knowledge on the constraints for land use since we concluded the presence of other issues and relations. These were unknown to us previously and were issues such as lack of capital for inputs, stock theft, changed governmental policies, changed labour markets and geographical location.

Since the tenure system and land distribution issues, where covered and the interview guide for the household interviews did not help us to go more into depth with the apparent constraints, we turned towards semi- and unstructured interviews. We revised the interview guide and were now concerned on probing into the issues of labour market, stock theft, capital, government policy,

social values, geological factors, technology and inputs. Our experiences with this new interview guide (fig.8) were that the interview situations were more relaxed, and the interviewer had the choice of probing into the issues relevant in the specific situation.

2.4.2. Key Informants

To obtain data on the land distribution and tenure system from another point of view, than the villagers of Pepela we conducted structured key informant interviews (Devereux and Hoddinott, 1993:28, Mikkelsen, 1995). The key informants were a project officer from the local NGO 'Environmental and Development Agency' (EDA), a former employee at EDA, and a local land legislation lawyer working with land claims in the area. These informants all represented a professional view on the land tenure and land distribution issues.

The interview guide for these interviews (fig. 7) were not functioning as expected. The guide was very structured and this felt constraining for the interviewer and the interview situation. Instead we began improvising and the interview went smoother. In one case we observed that the interview guide worked really well, which was due to a well knowledge and talkative informant, and this created a pleasant interview situation. In the interview concerning land legislation, where the terminology is very difficult, we found it extremely useful to record the interview and transcribe it.

The data from the key informants revealed a comprehensive insight to the formal land distribution processes as well as an understanding of the problems and possible constraints coming from the tenure systems.

2.5. Life Stories and Personal Stories on Land Use

The life stories approach was intended to help us gain a more holistic personal view on land use. Especially life-stories would reflect the way the political system in South Africa impacted the individual's life and hence explain the personal land use pattern (Crapanzano, 1984; Devereux and Hoddinott, 1993:33; Francis, 1992).

In the field we found that it was difficult to carry out in practice. This was due to this method being more time-consuming than expected, the lack of intimacy when other people disturbed the interview situation as well as lack of rapport with the informant. Furthermore, it was difficult to talk about personal things like diseases (HIV/AIDS), Apartheid, and power structures in the village.

We revised the method and turned it into informal interviews on people's personal stories regarding land use. During the personal stories we collected narratives on special topics that could impacts and hence constrain the use of land. We chose these topics to be the betterment scheme, cattle theft,

unemployment and the changed conditions for migration work. Through this method we identified historical events that could illustrate personal as well as political and historical constraints related to land use in the area. This information was used to create a time-line with national and local historical events. We are aware of the very subjective data coming from these personal stories, and the fact that we as interviewers created a situation, and hence affecting the data produced.

2.6. Soil Sampling

In the household interviews, the informants stated the presence of different soil qualities. We therefore decided to gather 11 soil samples at different sites in order to verify these statements (fig. 10). We consider these samples important since we from these can help identifying the quality of the soils in the agricultural areas. The samples was analysed for plant available phosphorus, (Olesen et *al.,* 1954), and total organic nitrogen and organic matter content (Jensen, 1991).

2.7. Reflections on Group Work

The inter-disciplinarity in the group was an advantage, however, at the same time it did create challenges in understanding the different scientific approaches. We feel that the combination of disciplines was optimal. The constraint for success during the fieldwork was the different levels of motivation within the group. The skills and knowledge among the group made us able to split up into smaller groups conducting more interviews. We believe that our experiences within this group work have been a huge challenge for our understanding of intercultural co-operation.

3. **Findings and Analysis**

As a prior assumption we regarded complex land distribution and tenure system and hence insecure tenure rights to be the major cause for the many abandoned fields and thus the low agricultural production in the research area. In the following paragraphs we will discuss the land distribution and tenure system in Pepela from a household point of view and from the view of 'professionals' as NGO workers and a land legislation lawyer in order to identify whether these systems proved to be a constraint for the use of land.

Discovering that the land distribution and tenure system did not, at present prove to be a direct constraint since the villagers of Pepela seemed to have the rights to use the land as well as the real access to the land we started looking at their capabilities for utilising the land. The main focus was changed and constraints in people's capability to utilise the land were now investigated using the principle from 'Sustainable Rural Livelihood: a Framework for Analysis' (Scoones, 1998).

3.1. Land Distribution

3.1.1. Household Perception of Land Distribution Systems

In the household interviews, including the interviews with the headman and chief, there was a clear consistency in the answers regarding land distribution and the tenure system. All the households including the headman stated that the chief was the overall distributor of land and that his approval was necessary in all land matters apart from individual leasing arrangements. Most of the people had inherited their land but claimed that the initial allocation was decided and directed by the chief.

Regarding the distribution there was a consensus among the respondents on the following application procedure: To obtain a permit to use a specific piece of land the person applying for the land have to go through an informal system of land allocation. First the headman[7] and hereafter the chief[8] has to approve the request for land. After the initial approval the application is taken to a tribal council, which consists of representatives from the whole village. The tribal council will on the basis of recommendations from villagers that know the applicant decide whether he/she can obtain land use rights in the village. A feast will be held after the tribal council and the applicant shall pay the expenses. Some informants even stated that the applicant will have to give the chief either money or oxen in order to get his approval. This will mainly happen if the applicant is not known in the village by either kin or other relations. After this system of traditional approval the

[7] Headman of Pepela.
[8] Chief of the Madlangala area (Pepela, Mabula and Makomereng) is situated in Makomereng.

applicant will receive a letter of recommendation from the chief, which will be brought to the Department for Agricultural and Land Affairs. The Department for Agricultural and Land Affairs sends out an Extension Officer (EO) to measure the area pointed out by the chief. These measures are taken to the local Magistrate Court and Permission to Occupy (PTO) will be issued to the applicant.

At presents all the land in Pepela is allocated. The initial allocation had happened during the Betterment planning[9] in the late 1970s. During this intervention the personal user rights in the form of PTO were introduced. Re-allocation to new users is rare since all land transfer mainly happens through inheritance. All the villagers knew the system of the PTO and they hold one them self. Asking if we could see the PTO the villagers typically claimed that they where either lost or that they had thrown them away. The reason for this is unclear.

3.1.2. Key Informants Perception of Land Distribution Systems

On the subject of land distribution we furthermore conducted semi-structured key informant interviews with Mr. Dlamini a project officer from the local NGO 'Environmental and Development Agency' (EDA), Mrs. McLeod, which was a former employee at EDA and her husband Mr. McLeod, which was a local land legislation lawyer.

In the key informant interviews it was stated that the land in the area was regarded as communal land, which means that the land is assigned to the community but administered by the state/government. The land is, through a land allocation system, leased to a user for an undefined period. During this lease the user has to pay rental to the government. According to the key informants it was also the Land Magistrate Court that by issuing the PTO facilitated the actual allocation of land on the background on measures made by Extension Officers from the Department for Agriculture and Land Affairs. The key informants furthermore emphasised the importance of the chief since the allocation in the Magistrate Court was made only by direction of the chief who made the recommendation on whom could be allowed to get the rights to use land in the specific area. This meant that the chief was the overall authority deciding whether a person could obtain rights to use land as well as what land this person were allowed to use[10].

The rental charged for lease of land is approximately 25 Rand a year. Practically most people only pay at the initial allocation since they are not aware of the fact that it is a rent that should be paid every year. The lack of payment does according to Mr. McLeod somehow never create any

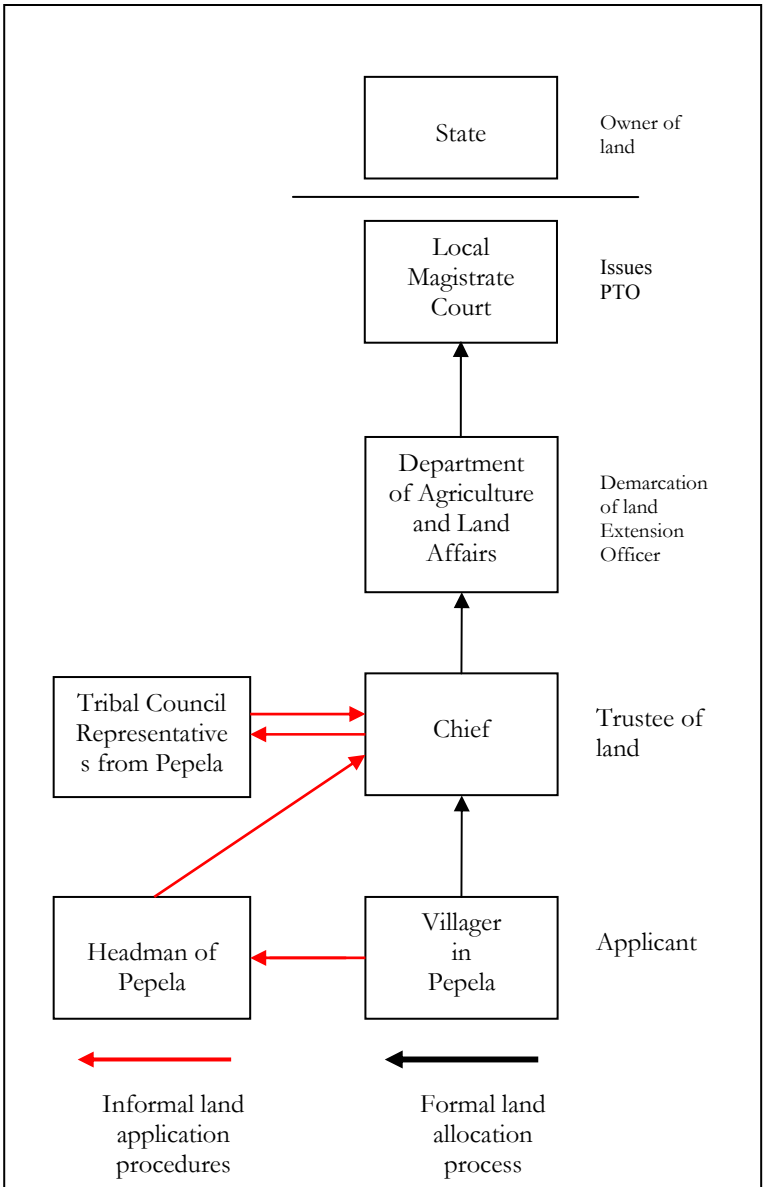
[9] For explanation of the Betterment planning, see paragraph 3.7.1

[10] The PTO to use the rangeland areas is held by the chief. It is issued by the Land Magistrate Court.

problems for the land users since the official system does not have the authority to cancel the PTO because of lack of payment. The mechanism of cancellation of a PTO is the responsibility of the chief and not the official system.

3.1.3. Land Distribution Discussion

Regarding the land distribution system the villagers and the key informants revealed quite similar information on the formal land allocation procedures. They agreed that it was the chief, who recommended whom the land should be allocated to. Hereafter the land is measured by an Extension Officer from the Department of Agriculture and Land Affairs and at finally the PTO is issued from the Land Magistrate Court. The difference between the information seemed to be that the informal and more traditional application procedure was expressed by the villagers. Here the importance of the headman, the chief and the tribal council in approving the applicants was stated. Especially the traditions of giving gifts to the chief, paying for a feast and the approving of applicants on the background of recommendations, kin relation etc. seemed to be a system consisting of informal rules and traditions. The informal application procedure was of great significance since the recommendation from the chief was the pre-condition for obtaining the PTO through the formal land allocation procedures.



Box 1. Diagrammatic illustration of the informal and formal land distribution procedures.

Box 1 illustrates the formal and informal land distribution processes expressed by the villagers, headman, chief and the key informants.

3.1.4. Household's Perceptions of the Tenure System

Regarding the tenure system all informants expressed a security of tenure since they regarded the rights to use the fields as exclusively theirs. Some claimed that the chief could take the land away from them either if they did not farm the land for a longer period or if misused. Since this had never happened they did not perceive it to be a problem.

This was supported by the headmen when he stated that people had to make their own decisions regarding re-allocation of land. This became apparent when asking the headman whether it was possible to re-allocate some uncultivated fields in the fertile alluvial plains.

3.1.5. Key Informants Perceptions of Tenure System

All key informants emphasised the tenure insecurity and the complexity and conflicts of land as of great importance.

The project officer Mr. Dlamini from EDA emphasized that all land were distributed, and the owners of the PTOs rather keep the land un-used than giving it to other people who wished to farm. This could explain the apparent un-utilisation of land in the area. Private leasing arrangements are possible but limited since the owner of the PTO can claim back the land after an initial investment by the leaser. Another possibility is sharecropping where the cultivation and investment is done by one farmer and the output shared equally between the cultivator and the owner of the PTO. These Sharecropping systems are based on private arrangement where the risk is carried by the investing farmer. Mr. Dlamini moreover stated that according to the official system the land could be taken away from the user if not farmed in a period of two years.

The Land legislation lawyer Mr. McLeod and the former employee at EDA Mrs. McLeod also emphasised the complexity of the land tenure systems. One area of potential conflict is the huge authority of the chief in land matters. The chief has the authority to take the land away from a person that he for some reason dislikes. Although it is possible to contest this decision it is very difficult to get an appeal through. The buildings are tied to the land and typically it is the wish to possess assets such as houses or other investments done to the land that creates these situations. Even though it is the chief who has the authority to set people off the land it is not possible to raise claims against him because he is not the actually owner of the land. Claims have to be passed

through the Land Administration Office. Based on this system Mr. McLeod stated that the chief's role as claimants of the land often prevented the villagers to invest in the land as well as on the land.

According to the key informants the inheritance system is also a source of problems in land claim issues. When people die then the PTO is withdrawn, and the chief fills out a form on who should inherit according to the customary inheritance system. The chief sends these forms to the local Magistrate Court where a new PTO is issued to the descendants. The customary system is complex because of polygamy. According to this system the first wife has the rights to the land even though the second wife has been paying for the investments in the land. Under such conditions it happens that the second wife and her children are evicted from the household. The notion of customary versus civic law, is according to Mr. McLeod typically one of the reasons for the complexity in land matters, since people take advantage of the system that match their interests.

3.1.6. Tenure System Discussion

The information obtained on the tenure system revealed that the key informants represented a somehow different view compared to view represented by the villagers. All key informants supported the initial considerations on problems related to the tenure system. This was strongly opposed by the information that we obtained from the interviews we conducted in the village.

To explain this difference we looked into the household interviews. The villagers did not express *any* constraints regarding their *access* to land or their *rights* to use land. This was despite the existence of the informal application procedures and the lack of ownership of land. At present, all the land in Pepela is allocated. Since none of the informants expressed any wishes of acquiring more land it seemed that the complex land allocation procedures was not a direct constrain. Regarding the tenure system people emphasised that it was unthinkable that land would be taken away from them, hence this expressed a sense of ownership and a feeling of tenure security.

Compared to the key informants, who expressed a very different view representing a somehow academic discourse on the land tenure and land distribution issues, the villagers are situated in a context where these issues can not be discussed isolated. They have to be discussed together with the present physical, social and economic situation that eventually will seem more constraining in their livelihood than the more abstract and unchangeable notions of land distribution and tenure system.

This was apparent since the land distribution and the tenure system did not seem to be expressed as constraints by the villagers, as were the presence of other and more obvious constraints for land use.

Such prevalent constraints were e.g. lack of capital for inputs, stock theft, changed governmental policies, changed labour markets and geological factors.

Based on these findings it became clear that the notion of complex land distribution and insecure tenure rights is not by the villagers perceived as a direct constraint for land use. Therefore we decided to change the research focus towards the constraints expressed by the villagers in Pepela.

3.2. Capability Focus

The levels of our research can be illustrated referring to the notions of the `Environmental Entitlement Model´ (Leach et *al.* 1997) (Box.2.). The framework is grounded in four notions: *Environmental Goods and Services, Endowments, Entitlements* and *Capabilities*. Here *Environmental Goods and Services* are seen as the traditional undifferentiated environment including the inherited dynamics in distribution, quality, quantity and the modifications which in part are made by humans. *Endowments* and *entitlements* are respectively the rights of the social actor to the resources, and the access the social actor actually gets in practice. How the social actor uses the endowments and entitlement to natural resources like land and thus creates well-being, depends upon the *capabilities* to utilise the resources.

So far we have concentrated on the land tenure and land distribution, which is the rights and real access to land; this is the notion of endowments and entitlements. However, discovering the villagers in Pepela seemingly have rights to use the land as well as the real access to the land we started looking at their *capabilities* for utilising the land.

Capitals

The *natural capital* can be described as the natural resources stocks (soil, water, air, genetic resources etc.) and all present environmental services (hydrological cycle, pollution sinks etc.) from which resources flows and services made useful for livelihood are derived.

The *economic capital* are the cash, credit/debt, savings, and other economic assets, including basic infrastructure and production equipment and technologies, which are essential for the pursuit any livelihood strategy.

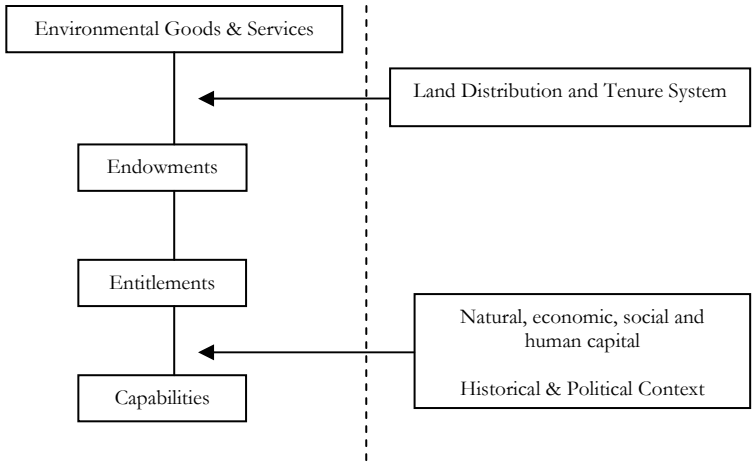
The *human capital* are the skills, knowledge, ability to labour, good health and physical capability that are important for the successful pursuit of different livelihood strategies

The *social capital* is the networks, social claims, social relations, affiliations, associations upon which people draw when pursuing different livelihood strategies requiring coordinated actions.

Box 2. The capitals defined by Scoones (1998)

To identify and analyse the capabilities to use natural resources in this case land we find the principles of 'Sustainable Rural Livelihoods: a Framework for Analysis' (Scoones, 1998) useful. Livelihood resources according to Scoones, consists of natural, economic, social and human capital (see Box 2 in text). The access to these capitals in a defined context e.g. political and historical will influence people's pursuit of livelihood strategies and hence their use of land. According to Murray (2001) the concept of capitals starts with the analysis of *strengths* rather than *needs*, and seeks to build on everyone's inherited potential. Additionally it is dynamic in its attempts to understand change and complex relationships (Murray, 2001: 6).

We find that the capabilities of people in Pepela to use land can be expressed through access to a combination of natural, economic, social and human capital. The combination of these livelihood resources (different types of capitals) results in the ability to pursuit different livelihood strategies and hence influences the ability to utilize the land. In contrast constraints for the utilization can be the lack of some of the above capitals. Furthermore, we find that the political and historical development have had a severe impact in the South African context. Through the analysis of micro-level data in relation to the historical and political macro-context we try to eliminate the boundaries of the conventional sectors such as formal/informal and not to view rural communities as isolated systems. According to Murray (2001: 6) this approach is people centred and has a holistic view because it tries to bridge between macro- and micro-levels of relations.



Box 3. The approaches used in this research project in the relation to the different scales in the Environmental Entitlement Framework (Leach et *al.* 1997).

In the following section findings will be presented and discussed according to access to different capitals and in relation to the historical and political context. We do not intend to separate the capitals from the context since they are interrelated and part of a complex cause-and-effect relationship.

3.3. Natural Capital

3.3.1. Soil, Erosion and Improvements

In general the environmental base in Pepela is poor and the majority of the informants mentioned soil quality as a constraint for the agricultural production. The soils did not seem to be heavily degraded but was generally of low fertility. To verify this 11 soil samples were taken using stratified sampling (fig. 10). In the soil samples no connection between soil fertility and sampling location appeared. The results showed a low content of nitrogen; phosphorus and carbon. This could be due to an intensive agricultural production in the past. Furthermore, they show that the occasionally flooding of the alluvial plains does not add a significant amount of nutrients. However, the samples do not verify the types of soils – it is the water holding capacity which is important during the dry periods. This possible different soil properties are between the upper agricultural area and the alluvial plains can thus explain the villager's preference for the latter.

Soil erosion is mentioned by the majority of the informants as a problem. The properties of the soil combined with a minimum of vegetation cover and heavy rain makes the fields vulnerable to erosion. From several informants we recognised that there had been governmental agricultural schemes in the area in the 1930-40s. The governmental scheme introduced contour ploughing in order to prevent erosion. This was done by lowering the slope to create better possibilities for the agricultural production. Moreover, there were established waterways to catch of running water. These investments in land can be identified on the Corona satellite image from 1964 and the aerial photos from 1975 and 2000. From the examination of the expansion of the settlement area and the agricultural activity, we can observe that there has been a decrease in the agricultural activity (fig. 11).

3.3.2. Rainfall

Water was mentioned as a constraint to some soils, and lack of precipitation results in a gross irrigation requirement of 68 mm during December and January[11], which are the important months of the growth season. Several informants mentioned that the first rain of the growth season occurs much later than previously, and that this some years resulted in very little, or even no output from

[11] Data from the SLUSE – South African Homepage referring to the 'South African Atlas of Agro-hydrology and Climatology'. http://www.agsci.kvl.dk/~adn/SA2002/ accessed 2003.03.10.

the fields. Moreover, heavy hail storms were mentioned as having severe impact on the crops and thus sometimes destroying or lowering the yield. During our fieldwork we experienced one and eventually some crops were damaged. We have not been able to verify the shift in climatic conditions over time but there were statements about the region being more prone to drought now than earlier. This shows a general trend, and is supported by Vogel (2000: 298).

3.3.3. Geographical Location

Several informants expressed that the geographical location of Pepela have influenced the land use situation in different ways. Firstly, the position of the village at a dead-end road does not create optimal opportunities for access to markets and trade with the surrounding regions. This access to Pepela is hindered after heavy rains due to bad infrastructure. Secondly, the close proximity to the Lesotho border have had a high impact on the amount of cattle theft compared to Mabula, which is located on the other side of a wide river valley keeping thieves away. Thirdly, the characteristics of soils in the main agricultural area are generally poor compared to Mabula, which is located on a lower level using the fertile valley of the Kinira River as their main agricultural area (fig. 12).

3.4. Economic Capital

3.4.1. Lack of Finance

When asked directly, why an informant were not growing the fields, the answer was typically that they did not have the *means* in terms of cash to buy fertilizer, hire oxen, a tractor and other tools for ploughing. At present, the lack of money, savings and access to credits is a general problem, and due to the households composition the majority of the household income derives from old-age pension[12].

3.4.2. Migration and Employment

Due to increased competition from the world market after the end of Apartheid the South African economy have experienced an economic decline. Furthermore the mining industries have brought in technologies which, makes labour unnecessary. Other reason for the decline in migration work is among others the declining gold prices (Nel, 2000).

[12] According to our key informant Mr. Dlamini from EDA a household survey that was carried out in Madlangala revealed that 80% of the household's income derives from elderly grants.

This overall economic decline was confirmed by some informants. According to them the decline started by the end of Apartheid and was affecting the need for migrant work in the industries.
During the Apartheid period the villagers had received their main income from migrant labouring, since the area was as labour reserves for white farms and industry (Palmberg and Strand, 1995:31-3). Nationally, the unemployment rate has risen since 1990s[13] (Ross, 1999:154-5).
Many of the men had worked outside the village for longer periods of time. The older generation had been migrant workers in Johannesburg, Durban or other large cities. Many of these migrant workers had now returned to their homes. At present, the younger people were reliant on part time work in the local areas. Questioning young people about land use and whether they wanted to be farmers - some expressed a wish to farm but emphasised the lack of input as the major constraint. Common for them was that they believed their work situation and opportunities for make a living in Pepela to be limited. Many articulated wishes of migrating to town, going overseas and getting an education. Where some of the young men wanted to farm the young girls expressed wishes for getting an education. A large number of the youngsters could not continue their school because of the lack of money like e.g. our local translator Miss Khohliso, who had already started an education but was now, hindered continuing it. One young man wanted to travel to UK to obtain some undefined work that he had seen advertised in a newspaper. Another informant, who had a well-paid job as lawyer in Pietermaritzburg also emphasised the lack of employment opportunities in the area. Due to the fact that he was child of civil servants in the previous government he had been able to go to UK to get his education and now he had returned to the Pepela only to visit his family. He was aware that he was privileged getting an education.

3.4.3. Cattle Theft

Cattle theft was stated as a huge constrain for agricultural production in the area thus and the reason why we chose to identify the narratives on this topic. Interviewing villagers on the topic they all stated that it started in the 1970s but escalated in the mid 1990s[14]. From occasional stealing of cattle in the mountains, raids to the villages started where armed gangs went to the households to rob the cattle. The robbers were shooting in the air to warn the villagers to not come out of their houses.

[13] Since 1994 500,000 jobs have been lost. According to official numbers the unemployment in South Africa is above 23 % (other numbers calculated from a broader definition of employment say 36%). The GNP in South Africa is just below 3 % pr. year, which is far less than the 6% that is needed to eliminate the general unemployment (Danish Foreign Ministry (2003) *Landestrategi for Sydafrika*, Danida, Copenhagen).

[14] This corresponds to the findings by Bjarnadóttir et *al.* who conducted a survey of the patterns of livestock production in the area (2001).

Several villagers have been killed during these raids, and some informants stated that these events were discouraging the young men to engage themselves in farming due to the high risk of losses. One informant stated that her husband had removed the cattle to a place far from the mountains in order to prevent losses.

To mitigate for the severe cattle theft the military had set up a permanent camp in the mountains and soldiers were set out to patrol on a regular basis. The last raid in the village had been two years ago and since this these incidences had mostly happened in the mountains were herd boys look after the cattle. Our informants stated that the presence of soldiers did not stop the thieves hence the motivation for investing in cattle was still lacking. One informant stated that the theft was instigated through a conspiracy of people from Makomereng and Lesotho. The people in the Makomereng area that participated in the crime would get cattle as payment for the cattle they stole and brought these to the border. The informant had noticed that some people in the area that did not previous had cattle now had several. Mitigation measures as showing of registration and vaccination papers, when the cattle were dipped had been taken.

The loss of cattle has had a major impact on the land use due to several factors. The cattle are one of the traditional status symbols and an investment. Furthermore, cattle are used for all kinds of traction within the agricultural production. This resulted in a dramatically increase in expenses if people had to hire other means for traction. Manure from the cattle is an effective and free input to the home gardens and fields, which now has to be substituted by modern fertilizer from the shops.

3.4.4. Maize – Yield and Prices

The fluctuation of food prices was mentioned as a constraint because it often resulted in the costs for growing the crop exceeding the market price. One young woman, whose husband was a migrant worker, was growing maize in her home garden. Her expenses in growing crops were nearly twice the market price (see Box 4 in text). When asked

Household no. #15.

The household cultivates only maize in the home garden. The cultivated area was approximately ¼ hectare. The area yields 160 kilos (two bags). The informant stated that she spend 800 Rand to buy seeds and fertilizer.

Maize:
The price of maize in the local shop was 240 Rand for an 80 kg bag. In the nearest town of Matatiele, the price at wholesale was approximately 210 Rand an 80 kg bag.
The price for grinding the maize grain into flour is 5 Rand for 10 kilos.

Oxen:
The price for hiring a span of oxen to plough a field/home garden is around 50 Rand plus food for the workers.

Box 4. Local prices associated with the agricultural production.

why she kept cultivating when it was not economically feasible she stressed that the yield was an important supplement during the dry season. One informant said that the maize is the most important crop because it is stabile, suits the local environment and can be utilised in many ways for consumption. Only a few of the households we interviewed produced a surplus e.g. vegetables that they were able to sell to others. Most of them did not produce enough in the home garden and/or field to make a living of it throughout the year. The time remaining, they survived on buying food from the local shops and the few surplus makers.

3.5. Human Capital

The general health conditions in the Madlangala area are not optimal. Some children are exposed to mal nutrition, and people are complaining about the increasing shortage of yield from their land, which is not enough to cover their needs. Beside the food situation there are the public concerns about the spread of HIV/AIDS. We tried to probe into this subject with great difficulties, and it turned out that most respondents denied the existence of the disease, and assured us that people are dying from other diseases[15]. In the village there are a remarkably high number of elderly people. They used to cultivate their land but now many of them complains about the little strength they got left, and many fields are left uncultivated. Possibly, there is a need for labour that can work in the fields. Maybe this is because of the imbalance in the household composition.

A lot of young and middle-aged women expressed a wish engage in sharecropping but they lacked the means and the knowledge to do so. The younger generation also emphasised their lack knowledge to do agriculture, especially if they had spend a lot of their lives in urban areas working, and now were forced back to their village because of unemployment.

Additionally, the principal of the local school in Pepela stated that the school curriculum had been changed, and the agricultural classes had been removed during the post-Apartheid government. In his opinion this would be the subject in decreasing his pupils' knowledge about farming practises, and be a huge loss for the country. Furthermore, he explained the parents in general have lost motivation to encourage their children to get an education, and he expressed a deep concerns for the people and their children's (especially males) high abuse of euphoric liquids.

[15] A high number of people are infected with HIV/AIDS, leaving large numbers of orphans and has an influence of the composition in the household (Andersen, 2003)

3.6. Social Capital

During a few of our visits in Pepela we observed young men working together in the home gardens and the fields. This was identified as a communal labour scheme, where they work half a day in field and for payment they received a meal and kaki-juice[16]. Based on these observations, it seemed peculiarly, that the elderly people expressed the presence of a lack of spirit for community work and the laziness of young people as a constraint for land use. We did not contest this laziness but many young people seemed to be unmotivated by the lack of money and wage work. Three of our informants were engaged in sharecropping (Box 5).

One informant stated that the numbers of women, who have been widowed, had increased in the past years, and that they therefore have been marginalised in the society. With the loss of their husband, they also lost savings for inputs in agricultural production. Some widows told us that they were very dependent on the help from social networks such and their children and neighbours.

There were evidences for changing social values. Many young people were uninterested in doing agriculture, and expressed wishes for an education or migrating. The older generation perceived the change of values as if the youngsters were lazy. The elderly and middle-aged people are still considering Pepela as an agricultural society but emphasized the need for stronger cooperation among the villagers and the lack of a general community spirit.

Different wishes for cooperation were expressed in suggestions for making farmer organisations and community project.

Sharecropping

Household #5 and #6
The households had been engaged in sharecropping for the past two years. This was done to get higher yields and to produce more effectively. The plot was well fenced and located on the fertile alluvial plains by the river.

The two households were equally dividing the labour and the associated costs.

They mainly produced vegetables (cabbage, spinach and potatoes). The surplus was sold to other villagers.

Box 5. Example of sharecropping

[16] A strong yeasty alcoholic drink brewed on maize and sorghum.

3.7. Personal Stories on Land Use

During the collecting of personal stories, analysis of satellite images as well as through the interviews we have tried to identify historical structures that could illustrate personal as well as political and historical constraints related to land use in the area. This information was used to create a time-line displaying national and local historical events (fig. 9). In the following paragraphs we have selected a few personal stories that illustrate how the political and historical processes have influenced the land use in Pepela.

3.7.1. Betterment Schemes

From the analysis of the aerial photos we noticed that parts of Pepela had been moved (fig. 11). This information inspired us to interview people on their personal stories regarding this movement of the village. The local chairwoman for community projects in Pepela had experienced this movement herself and recognised it as a part of the Betterment planning[17] in the late 1970s. According to her it was the government that through the chief facilitated the movement and that the households did not have any say in this resettlement. Extension officers measured out the land and gave it numbers where after the household on the demarcated land where resettled. Compensation where given but not high enough according to the informant. The reason for the resettlement was according to the informant that the land she was moved from had to be allocated to agriculture[18]. When interviewing other informants on the subject they often expressed that it was the chiefs' decision. Some even stated that he wanted the land himself, and others complimented that it was done to separate the tribes in the area (Xhosa/Hlupi and Sotho). The headman supported the notion of the movement as being a part of the Betterment Scheme. He told us that the chief, on advice from the Nduna (medicine man) had divided the area into sections that each should be suitable for growing different things. Households in these areas where resettled in order to use the full agricultural potential from the land in these fertile areas.

[17] The Betterment Scheme was a 'development' strategy of the Nationalist government where the aim was to prevent decreasing soil erosion in the homelands and facilitate education and service provided by moving the scattered rural population into villages or 'closer settlements'. Village arable plots and grazing areas would be formally established and demarcated only for those, who hold farming rights. By assigning economically feasible plots and demarcating 'betterment villages' to the less arable land, productivity was expected to increase (Dollar & Goudie: Environmental Change, In: Fox & Rowntree (2000) – *The Geography of South Africa in a Changing World,* p.57, Oxford University Press, Oxford).

[18] An informant stated that the site was suitable for sorghum production.

3.7.2 Apartheid

One man from 1942, romanticised the past and stated that the agricultural support had disappeared with the Nationalist Government in 1994. According to him the ANC government supports industrial policies instead of agricultural policies. Subsidies to fertilizer, seeds and dipping have been removed, which restricted him and the other villagers, to do agriculture to the same extend as was possible during the Apartheid period. He told us that he now only cultivated his home garden since he could only afford fertilizer and seeds for this limited area. He also mentioned that the migrant workers had started returning from the mines, when ANC came into power, and that this had become worse when the sitting President T. Mbeki took over in 1998.

3.7.3 Stock Trade and Contour Ploughing

A male informant born 1931 explained to us how stock-trade used make up a large income for many people in the area. The community were breeding cattle, and the trade were facilitated by white people in the area. This ended with the creation of the homelands in approximately 1958 were the white people that facilitated the trade left the area. According to this informant, the stock trade was the main potential livelihood strategy in the area since he did not believe in the agricultural potential. This respondent furthermore mentioned contour ploughing schemes, which were introduced in the area in the early 1930s. We have identified terraces and waterways in the area that could belong to this period (fig. 11). According to the informant it was the Nationalist government that had introduced the schemes and in doing so they imposed their will on the black people in the area. Later on the government provided the community with tractors to do the ploughing of the terraces. These production methods were never properly adopted in the community since the government only instructed people without building up the capacity to continue the scheme. Furthermore, the government never asked the people for their needs and wishes.

4. Conclusion

4.1. Land Distribution and Land Use Systems

In the following paragraph we answer our initial research questions in order reach our objective of identifying social and historical processes of land use and land distribution in Pepela. This is to identify possible present constraints and future opportunities for land use in the area.

In paragraph 3.1 we identified the *land distribution legislation* in Pepela and discussed its influence on land use and land distribution. The formal legislation process consists of PTO registration system that gives people user rights to specific areas. This is either for settlement or for agricultural use. We have furthermore identified the headman, chief and tribal council as the *dominants institutions* in Pepela because of their central role in the informal land allocation processes, especially during the application procedure. In this procedure we identified how *norms, values and local rules* as gift giving and approvals by the tribal council were inherent in the system. At present all the land in Pepela is allocated and re-allocation to new users is rare since all land transfer mainly happens through inheritance. People do not seem to be willing to give up their rights to use land (PTO) even though they do not use it. It is although important that we did not talk to any informants that at present wished to obtain more land but several stated that individual leasing arrangements were possible. All the informants stated that they had access to land and lack of it was never considered to be a problem. Since the villagers did not express *any* constraints regarding their *rights* to land or their *real access* to use land they can be set to held the endowments as well as the entitlement to the land. The Betterment planning was identified as one of the *historical processes* influencing the land allocation. This planning facilitated the division of land into categories as agricultural, settlement and rangeland areas. Another policy of the Betterment planning was the initial issuing of individual farming rights (PTO).

Throughout our fieldwork we realized that the notions of complex land distribution and insecure tenure rights were not according to the villagers an apparent constraint for land use. They perceived the physical, social and economic situation as more constraining than the abstract and unchangeable notions of land distribution and tenure rights. The villagers of Pepela are situated in a context where these issues can not be discussed in isolation. After the initial research we decided to change the research focus towards the newly discovered and for the villagers more apparent constraints.

In following paragraph we will reach our objective of identifying the possible present constraints and future opportunities for land use in Pepela. We will do that with an emphasis on people's capabilities to use land.

4.2. Constraints and Opportunities for Land Use

In paragraph 3.2 - 3.7 we have identified constraints for land use in Pepela. We have discussed how the access to as well as the combination of different capitals influences the capability of people to pursuit different livelihood strategies and hence their ability to use land. In the following sections we will discuss the capitals inherent in the community as well as lack of the same capitals.

Despite the presence of natural capitals as land and water the general agricultural productivity in Pepela seems to be rather low. Furthermore the stability of agricultural production often was jeopardised by drought, hail or cattle browsing from the unfenced fields. The neighbouring town of Mabula is characterised by access to natural capitals as e.g. fertile soils. This is due to its location on a lower level using the fertile valley of the Kinira River as the main agricultural area. Compared to Mabula - Pepela's proximity to the border of Lesotho has had a high impact on the cattle theft.

Mabula is located on the other side of a wide river valley, which possibly is keeping thieves away.

The lack of economic capital seemed to be the overall concern for the villagers in Pepela. Especially the need of means for input in agricultural production prevented cultivation of the fields. The absence of economic capitals as savings, access to credit and cash were mentioned as the main constraints for the informant's abilities to engage in agricultural production.

The economic capital is influenced by the broader economic, historical and political context.

The general economic decline in South Africa has lead to decreasing requests for wage labour e.g. in the industries. Since the area historical has been a labour reserve for the mining industries this has resulted in an increasing unemployment in the area. People in the area had been reliant on their savings from migrant work to buy agricultural input and lack of these savings can therefore be considered a constraint for agricultural production.

The changes in the access to capital have influenced the livelihood strategies for people in Pepela. We believe that people in a situation of lack of economic capital will chose to cultivate their home gardens because of its proximity to the household and hence access to water supplies from the water taps. The composition of crops and vegetables in the home gardens has been changed and now

maize is the main crop that is cultivated (fig. 13). Furthermore, the home gardens are due to fencing protected from grazing cattle and crop theft. The abandoning of the fields was a widespread strategy in Pepela.

Cattle are vital for use of land in the area and many villagers stated that it was due to the lack of cattle that they had stopped farming. The shortage of cattle was according to the villagers the widespread cattle theft in the area. Another reason for this shortage could be the removal of subsidize for cattle dipping, which had made diseases spread in the area.

The human capital in the village was characterised by not good physical conditions. Besides this there was a majority of people expressing that they did not possess the kills and knowledge to do agriculture.

Social capital in the form of networks was present in Pepela. Many of the households consisting of elderly people with their grandchildren were reliant on the help from family, friends and neighbours. The limited workforce in these household constrained people's ability to farm on a larger scale since there was no access to labour. Regarding the social capitals of education or the requirement of professional skills after Apartheid – the youngsters are aware of their rights to get a profession but they rarely have the means to utilise their newly obtained rights. Furthermore, they still neglect the importance of agriculture. They have grown up experiencing the high risks of agricultural production. They regard agriculture as old fashioned since it often is on subsistence level, which young people rarely consider it as an attractive livelihood strategy.

The personal stories have illustrated how agricultural policies in Pepela have always been implemented from the top governmental authorities through the traditional authorities down to the individual. The tribal institutions have thus acted as administrative 'puppets' of the state, which have increased their authority in the community. The dependency on outside authorities e.g. development organisations or the government subsidies has been pronounced in area. The decision-making on agricultural issues has always taken place above community level, which have made people used, to and reliant on outside authorities. These historical and political processes has de-motivated individual decision making and created a feeling of powerlessness in the community.

The future opportunities of land use in Pepela do not seem bright. The community was characterised of lack of all kinds of capital which influenced their capabilities of using their endowments and entitlements and hence influencing their pursuit of livelihood strategies. Due to lack of the capitals which was influenced of the broader context the constraints for land use were in most cases overwhelming. We are not able to make any recommendations on how this situation can be changed since decisions that could mitigate these constraints are seemingly tied to the wider political and economically context on which these people at present have no influence.

Through this analysis of micro-level data in relation to the historical and political macro-context we have in this research tried to eliminate the notion that former homelands always are associated with over-crowdedness and that the natural resources in these areas are over-utilized and heavily degraded. We have identified and characterised causes for the unutilisation of land and hence present constraints for land use. Through this analysis we have eliminated the boundaries of the conventional sectors such as formal/informal and avoided viewing rural communities as isolated systems. We have concentrated on the people since we have discussed the constraints for land use expressed by the villagers. Furthermore, we have through this bridging between macro and micro levels of relations tried to reach a holistic level of understanding.

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APPENDIX

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