



Reforming Land Tenure for the Reduction of
Vulnerability against Global Change:
A Case Study in the Omusati Region, Namibia

MASTER THESIS

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Table of Contents

| | |
|---|------|
| List of Figures | IV |
| List of Tables | V |
| List of Maps..... | VI |
| List of Pictures | VI |
| List of Acronyms..... | VII |
| Zusammenfassung..... | VIII |
| Executive Summary | X |
| 1 Introduction | 1 |
| 1.1 Study Area | 2 |
| 1.1.1 Namibia..... | 3 |
| 1.1.2 Omusati Region..... | 6 |
| 1.1.3 Communities | 9 |
| 1.2 Land Allocation in Namibia | 10 |
| 1.2.1 Ante-Independence Development | 10 |
| 1.2.2 Post-Independence Development until 2002/2003 | 13 |
| 1.3 Objective | 16 |
| 2 Approach & Methods | 18 |
| 2.1 Sustainable Livelihood Approach | 18 |
| 2.1.1 Background..... | 18 |
| 2.1.2 The Sustainable Livelihood Framework - Theory..... | 18 |
| 2.2 Methods - Application of the Sustainable Livelihood Approach..... | 24 |
| 2.2.1 Embedding of the Project | 24 |
| 2.2.2 Design of the Case Study..... | 25 |
| 2.2.3 Research Questions | 26 |
| 2.2.4 Selection of the Case Study Area..... | 27 |
| 2.2.5 Stakeholder Analysis..... | 27 |
| 2.2.6 Applied Methods..... | 29 |
| 3 Results | 34 |
| 3.1 Livelihood Assets | 34 |

| | |
|--|-----|
| 3.1.1 Similarities & Marginal Differences of Onashitendo & Omagalanga..... | 34 |
| 3.1.2 Differences of Onashitendo & Omagalanga..... | 40 |
| 3.1.3 Summary..... | 45 |
| 3.2 Changing Structures & Processes..... | 46 |
| 3.3 Vulnerability Context | 49 |
| 3.3.1 Trends..... | 50 |
| 3.3.2 Seasonality..... | 55 |
| 3.3.3 Shocks | 58 |
| 3.3.4 Summary..... | 67 |
| 3.4 Livelihood Strategies & Outcomes..... | 68 |
| 3.4.1 Subsistence Farmer | 69 |
| 3.4.2 Employees & Freelancer | 69 |
| 4 Discussion | 71 |
| 4.1 Evaluation of Approach & Methods..... | 71 |
| 4.1.1 Sustainable Livelihood Approach | 71 |
| 4.1.2 Methods | 72 |
| 4.2 Discussion of Results | 74 |
| 4.2.1 Research Question 1 | 74 |
| 4.2.2 Research Question 2..... | 76 |
| 4.2.3 Research Question 3..... | 78 |
| 4.2.4 Conclusion | 82 |
| 4.3 Recommendations | 83 |
| 4.3.1 National Level | 83 |
| 4.3.2 Regional Level | 86 |
| 4.3.3 Local Level..... | 87 |
| References..... | 88 |
| Appendix | 97 |
| Appendix A - Semi-Structured Interview Guideline | 97 |
| Appendix B - Observation Guideline..... | 102 |
| Appendix C - Focus Group Discussion Guideline | 103 |
| Appendix D - List of Interviewed Experts | 104 |
| Appendix E - List of Group Consultations & Discussions Participants..... | 105 |

List of Figures

| | |
|--|----|
| Figure 1: GDP by Sector for 2008..... | 6 |
| Figure 2: Sustainable Livelihood Framework | 19 |
| Figure 3: Possible Pentagons Shapes which Represent Changes in Access to Assets ... | 20 |
| Figure 4: Livelihood Assets of Onashitendo and Omagalanga | 45 |
| Figure 5: Development of the Unemployment Rate in Namibia & Omusati Region..... | 51 |
| Figure 6: Namibia's Population Development from 1950-2010..... | 52 |
| Figure 7: Namibia's Population Projections until 2030..... | 52 |
| Figure 8: Development of HIV Prevalence Rate in Namibia & Omusati Region | 59 |
| Figure 9: Three Projected Increases in Mean Surface Air Temperature in Summer & Winter for the Time Period between 2046-2065..... | 63 |
| Figure 10: Vulnerability Driver & Impact Chain..... | 67 |

List of Tables

| | |
|---|----|
| Table 1: Detailed GDP by Sector for 2008 | 6 |
| Table 2: Historical Events & Land Allocation from 1866 to 1994 | 11 |
| Table 3: Tenure Rights under CLRA | 15 |
| Table 4: Livelihood Assets | 21 |
| Table 5: Structures..... | 22 |
| Table 6: Processes | 22 |
| Table 7: Vulnerability Context | 22 |
| Table 8: Livelihood Strategies | 23 |
| Table 9: Research Phases..... | 25 |
| Table 10: Research Questions & Applied Methods | 26 |
| Table 11: Stakeholder Analysis..... | 28 |
| Table 12: SL Framework Components, Stakeholder Groups & Applied Methods..... | 28 |
| Table 13: Livelihood Assets Similarities & Marginal Differences of both Communities | 35 |
| Table 14: Relevant Livelihood Assets Differences of Onashitendo & Omagalanga | 40 |
| Table 15: Relevant Aspects of the Communal Land Reform Act, 2002 / 2003 & Purposed Amendments of the New Land Bill, 2010 | 46 |
| Table 16: Development of the Communal Land Reform Act..... | 49 |
| Table 17: Perception of Climatic Conditions on the Local Level | 66 |
| Table 18: Level of Vulnerability in Onashitendo & Omagalanga..... | 77 |

List of Maps

| | |
|---|----|
| Map 1: Location of Namibia | 3 |
| Map 2: Average Annual Precipitation Distribution | 4 |
| Map 3: Location of Omusati Region | 6 |
| Map 4: Location of the Cuvelai Drainage | 7 |
| Map 5: Namibia's Population Density | 8 |
| Map 6: Location of Tsandi & Oshikuku Constituency within the Omusati Region | 9 |
| Map 7: Location of the Communities Onashitendo & Omagalanga | 10 |
| Map 8: Land Allocation 1902 and 1911 | 13 |
| Map 9: Land Allocation 1937 and 1964 | 13 |
| Map 10: Land Use Structure in the Omusati Region | 54 |
| Map 11: Variation in Annual Precipitation..... | 56 |
| Map 12: Malaria Infection Rate | 58 |
| Map 13: Distance between Windhoek and Oshakati | 72 |

List of Pictures

| | |
|---|----|
| Picture 1: Focus Group Discussion at the Community School..... | 32 |
| Picture 2: Pearl Millet, Ground Nuts, Beans | 39 |
| Picture 3: Typical Environment with an Oshana in the Background, Traditional & Modern House Architecture, Outdoor Cooking Place, Storage Bucket..... | 39 |
| Picture 4: Subsistence Farmer Florian Shavuka Fransiskus & A Private Water Access... | 41 |
| Picture 5: Rita Simeon | 43 |
| Picture 6: Infrastructure Damages, Flooding causes Waterlogging on Fields and leads to Yield Losses | 62 |

List of Acronyms

| | |
|--------|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| A.S.L. | Above Sea Level |
| BMZ | Federal Ministry for Economic Cooperation and Development |
| CIM | Centre for International Migration and Development |
| CLB | Communal Land Board |
| CLR | Communal Land Right |
| CLRA | Communal Land Reform Act |
| DED | German Development Service |
| DFID | British Department for International Development |
| DFRN | Desert Research Foundation of Namibia |
| GDP | Gross Domestic Product |
| GNI | Gross National Income |
| GTZ | German Technical Cooperation |
| HIV | Human Immunodeficiency Virus |
| IBMC | ishana-sub-Basin Management Committee |
| MAWF | Ministry of Agriculture, Water and Forestry |
| MCA | Millennium Challenge Account |
| MCC | Millennium Challenge Corporation |
| MLR | Ministry of Lands and Resettlement |
| NAD | Namibian Dollar |
| NGO | Non-Governmental Organization |
| PPP | Public Private Partnership |
| RLB | Regional Land Board |
| SLA | Sustainable Livelihood Approach |
| SL | Sustainable Livelihood |
| SWAPO | South West Africa People's Organization |
| TA | Traditional Authority |
| US | The United States of America |

Zusammenfassung

Landwirtschaft trägt noch immer in entscheidendem Maße zur wirtschaftlichen Entwicklung und zur Existenzsicherung vieler Menschen in den Entwicklungsländern bei. Kleinbäuerliche Subsistenzwirtschaft im Zusammenhang mit gesicherten Pachtverhältnissen spielt eine bedeutende Rolle in Afrika. In vielen Ländern südlich der Sahara sind die bestehenden Pachtverhältnisse ein Ergebnis verschiedener Landverteilungsphasen, in denen es zu einer Aufteilung in kommerzielle und kommunale Gebiete kam.

Um die Folgen kommunaler Landreform auf die Vulnerabilität der kleinbäuerlichen Lebensweise und -verhältnisse gegenüber Auswirkungen des globalen Wandels, wie zum Beispiel Klimawandel, Bevölkerungswachstum, Landnutzungsdruck, HIV/AIDS-Rate, zu evaluieren, wurde diese Studie am Beispiel Namibias durchgeführt. Als Fallbeispiele wurden zwei Gemeinden mit unterschiedlichen Landvergabesystemen in der Omusati Region verglichen. Zusätzlich legt die Studie Empfehlungen dar, wie die kommunale Landreform verbessert werden kann, um Armut zu reduzieren und Existenzgrundlagen von Landnutzern zu erhöhen.

Wesentliche politische, sozio-ökonomische und physische Aspekte charakterisieren im entscheidenden Maße Namibia und das Untersuchungsgebiet. Die Omusati Region ist besonders durch das traditionelle Landvergabesystem, eine hohe Arbeitslosigkeit, Subsistenzwirtschaft, ein geringes Bildungsniveau sowie jahreszeitliche Überschwemmungen und Trockenperioden aufgrund der physischen Zugehörigkeit zu einem Inland Delta, dem Cuvelai Einzugsgebiet gekennzeichnet.

In der Studie wurde der Ansatz einer nachhaltigen Existenzsicherung (Sustainable Livelihood Approach) als analytisches Instrument angewendet. Dadurch konnten die wesentlichen Faktoren, welche die Lebensgrundlage von Menschen bestimmen, evaluiert sowie typische Beziehungen und Zusammenhänge unter ihnen erklärt werden. Im Rahmen des Sustainable Livelihood Approach wurden existenzsichernde Vermögenswerte, Überlebensstrategien, Folgen und Erfolge der Existenzsicherung, aber auch die Höhe der Vulnerabilität sowie sich wandelnde administrative und politische Strukturen und Prozesse beurteilt. Diese Faktoren wurden anhand von folgenden Methoden erfasst: Literaturrecherche, Leitfaden-Interviews, Experten-Interviews, Beobachtungen, einer Fokusgruppe sowie Gruppenkonsultationen und -diskussionen.

Die Ergebnisse zeigen, dass die Existenzgrundlage der meisten Menschen in den beiden Gemeinden nicht ausreichend gesichert ist. Die Exponierung gegenüber den Auswirkungen globaler Veränderungen ist besonders hoch und die gesamte Region ist als

besonders sensitiv und deshalb gefährdet zu beurteilen. Kleinbauern im Cuvelai Einzugsgebiet sind somit stark verwundbar hinsichtlich extremer Wetterereignisse, verminderten Ökosystemdienstleistungen, Krankheiten, ökonomischen Verlusten sowie reduzierter landwirtschaftlicher Produktivität. Besonders die künftigen Auswirkungen des Klimawandels werden die Verwundbarkeit von Kleinbauern im Untersuchungsgebiet noch zusätzlich verstärken.

Als Ergebnis der methodischen Evaluierung kann festgestellt werden, dass der verwendete Ansatz sowie die Methoden geeignet waren, um die vorher genannten Faktoren zu bewerten. Allerdings sollten bestimmte technische und logistische Aspekte in weiterführenden Studien stärker integriert werden.

Aus der inhaltlichen Ergebnisanalyse lässt sich ableiten, dass die kommunale Landreform positive Auswirkungen hat, wie „gleiche Nutzungsrechte im Hinblick auf Zugang und Geschlechtergleichstellung“, als auch „eine regulierte Vergabe von Landnutzungsrechten (gesicherte Pachtverhältnisse)“. Diese werden jedoch nicht in geeigneter Art und Weise kommuniziert und sind somit unter den Kleinbauern unbekannt. Es ist nicht klar ersichtlich, wie weitere positive Effekte wie zum Beispiel „die Förderung einer ökonomischen und sozialverträglichen Entwicklung“ und „die Unterstützung einer ökologisch, nachhaltigen Nutzung natürlicher Ressourcen“ durch die kommunale Landreform erreicht werden sollen, da keine dazu beitragenden Maßnahmen bzw. Strategien implementiert worden sind. Als Fazit ist herauszustellen, dass die Reform in unzureichendem Maße nationale und globale Veränderungen beachtet und sie deshalb nicht in geeignetem Umfang zur Minderung der Vulnerabilität der kleinbäuerlichen Lebensverhältnisse im Cuvelai Einzugsgebiet beiträgt.

Die Ergebnisse der Studie zeigen, dass es entscheidend ist, die Verwundbarkeit zu reduzieren und die Widerstandsfähigkeit zu erhöhen. Es ist deshalb empfehlenswert, bisherige Strukturen und Herangehensweisen zur Sicherung des Lebensunterhalts mittels folgender Strategien zu verändern: Schaffung von neuen Arbeitsplätzen, Erweiterung von Einkommensmöglichkeiten, nachhaltige Nutzung natürlicher Ressourcen und Förderung von Anpassungsstrategien. Zur Realisierung der genannten Maßnahmen könnten geeignete Kommunikationsstrategien, Informationsnetzwerke, Zugang zu Kapital und Anpassungsstrategien, wie Wetterversicherungen, einen wichtigen Beitrag leisten. Um die Strategien erfolgreich durchzuführen ist ein Kompetenzaufbau für die verschiedenen Themenkomplexe durch Weiterbildungen und Schulungen notwendig.

Executive Summary

Agriculture remains crucial for economic development and the livelihoods of many people in developing countries. The role of small-scale subsistence agriculture in ensuring food security is especially significant in Africa in the context of secure land tenure. Land tenure is characterized by different land allocation periods which have resulted in the separation of commercial and communal areas in many countries in Sub-Saharan Africa.

To evaluate the influence and impacts of communal land reform on vulnerability to global change impacts, such as climate change, population growth, land use pressure, HIV/AIDS ratio, this study was conducted in the Sub-Saharan country of Namibia. For the case study, two communities in the Omusati Region with different land allocation systems were compared. In addition, this study provides elaborated recommendations about how to improve the communal land reform in order to reduce poverty and enhance livelihoods of land users.

Namibia and the case study region are characterized by significant political, socio-economic and physical aspects which have contributed to defining the region. The case study region, namely the Omusati Region, is particularly characterized by a traditional land allocation system, high unemployment rate, subsistence agriculture, low educational attainment as well as seasonal floods and droughts due to the location on an inland delta.

The Sustainable Livelihood Approach was applied as an analytical tool to evaluate the main factors that affect people's livelihoods and explain typical relationships and dependencies amongst them. Within the framework of the Sustainable Livelihood Approach, livelihood assets, changing structures & processes, the vulnerability context, livelihood strategies and livelihood outcomes have been assessed for the two example communities. This was done by following methods: literature review, semi-structured interviews, observations, focus group discussion, expert interviews and group consultations & discussions.

The results demonstrate that the livelihood situation in the two communities is weak. The exposure to global change impacts is high and the region can be characterized as highly sensitive. Therefore, small-scale subsistence farmers in the Cuvelai Drainage are highly vulnerable to extreme weather events, reduced ecosystem services, human health shocks, loss of economic value, and decrease of agricultural production among others. Particularly, the future impacts of climate change will lead to a further increase in the vulnerability of small-scale farmers in the case study region.

As a result of a methodical evaluation, it can be stated that the approach and methods employed in this study were appropriate to evaluate the aforementioned objective. Nevertheless, certain aspects, for example technical and logistical aspects, should be improved for further studies.

After thematically analyzing the results, it became apparent that the Communal Land Reform could have positive impacts such as “secure equal rights in terms of access and gender to communal land” and “a regulated allocation of land use rights (secure tenure)” which are not appropriately communicated and, therefore, unknown to the circle of small-scale farmers. For further positive impacts like “the promotion of economic and social development” and “support of environmentally sustainable use of natural resources”, it is not clear how they are going to be reached due to the fact that no contributing measures or, rather, strategies were implemented along with the Communal Land Reform. The conclusion also points out that the reform does not sufficiently consider national and global changes and is, therefore, not able to contribute adequately to the reduction of vulnerability of the small-scale farmers of the Cuvelai Drainage.

The results indicate that it is important to reduce vulnerability and achieve resilience. Therefore, it is recommendable to change previous structures and livelihood approaches based on the following strategies: the generation of employment opportunities, the diversification of income sources, a more sustainable use of natural resources and the promotion of adaptation strategies. Adjusted communication, networking and capacity building as well as access to financial capital and adaptation measures, such as weather insurance, could all contribute to the realization of the aforementioned strategies.

1 Introduction

Agriculture remains a fundamental source of livelihood, subsistence and food security for rural people; it is a basis for economic growth in developing countries. In this context, secure land tenure for rural people is very important (UNCHS 2008). It is not only important for agricultural production; it also allows poor people to diversify their livelihoods by using their land as collateral, renting it out or realizing its value through sale. Hence land is essential to the lives of poor rural people. It is a source of food, income and social identity. Secure access to land reduces vulnerability to hunger, poverty, non-sustainable land use and global changes such as climate change (IFAD 2010A). The current rising challenges are most acute in developing countries, which have the highest rates of population growth, migration and urbanization and have to contend with global competition that marginalizes areas lacking in comparative advantages (FRENCH DEVELOPMENT COOPERATION 2009). Rural areas are coming under multiple pressures. Apart from population growth, developing countries and particularly rural areas are being confronted by other pressures. To mention are increasing fragmentation resulting from the cultivation of marginal and sometime fragile lands, land use conversion, commercial investments, environmental degradation, soil erosion and nutrient depletion, as well as natural disasters such as droughts and/or floods and land use disputes caused by inequitable access to land (UNCHS 2008). These processes and changes have had major implications for local land tenure systems. Although such systems claim to draw their legitimacy from “tradition” and are commonly referred to as “customary”, they have been profoundly changed by decades of colonial and post-independence government interference and are continually adapted and reinterpreted as a result of socio-economic, political and cultural change (COTULA 2007). Therefore, secure access to land is missing for many of the world’s extremely poor rural people in developing countries (IFAD 2010A).

Inequitable distribution of land has, in many countries, historical origins, especially in countries of Southern Africa like Namibia, South Africa, Swaziland and Zimbabwe. Each of the aforementioned lands experienced widespread colonialist settlement on agricultural land. In the post-independence period, land policies have aimed at redistributing land from the large-scale commercial sector to the landless and to those with only marginal access to land. Although land distribution has been a core issue, land tenure reform has not been given sufficient attention. Increasingly, the centrality of land tenure in sustainable development processes in the region is recognized. Rural people generally need secure individual rights to farm plots to ensure sustainable development (UNECA 2003).

Using the example of communal land tenure in the Northern Central Region of Namibia, the work at hand will show which difficulties and opportunities exist in the process of transformation from traditional customary land rights to legal customary land rights. Furthermore, this work will demonstrate how appropriate this legal change, in the form of the Communal Land Reform Act is, in consideration of national and global changes such as population growth, unemployment, high HIV/AIDS ratio, economic food dependency, extreme weather events and climate change.

Structure of the Thesis

The thesis is divided into four chapters, namely Introduction, Approach & Methods, Results and Discussion. The first chapter provides information about the study area, the historical background about land tenure in Namibia and information about the objective of the thesis at hand. In the second chapter the reader will receive information regarding the applied case study approach and methods which were needed to answer the research questions. The third chapter, namely Results, will present research findings on both the local scale (livelihood assets) and national scale (legislation) as well as on vulnerability factors which have an impact on the local scale and, in turn, on the people who live in the case study area. This chapter is finally rounded off by the presentation of livelihood strategies and livelihood outcomes of the investigated target group, which comprises mainly subsistence farmers. The fourth and last chapter will evaluate the applied approach and methods, discuss the research findings and answer the research questions as well as provide recommendations for policy makers, consulting corporations (donors) and local people.

1.1 Study Area

To be able to understand the background of the research questions properly it is important to get an overview about the different factors which influence the country itself and the case study region. Hence chapter 1.1 introduces the reader to relevant characteristics of these factors. Section 1.1.1 provides first an overview about Namibia, where the case study took place. The overview is divided into two subsections. The first subsection pertains to the physical aspects of Namibia. The second subsection concerns itself with the political & socio-economic aspects of the country. This section is followed by the description of the region, namely the Omusati Region, where the case study took place (see 1.1.2). It is also divided into two subsections which provide information about physical and political & socio-economic characteristics of the region. The last section 1.1.3 explains in detail in which communities of the Omusati Region the field work was realized.

1.1.1 Namibia

Physical Characterization

Namibia is located in southern Africa and borders Angola and Zambia in the North, Botswana in the East and South Africa in the South. In the West, Namibia borders on the Atlantic Ocean (map 1).

Namibia's landscape is basically characterized by two big deserts: the Namib Desert in the West along the coast, which stretches from the cap province in South Africa to Angola, and the Kalahari Desert in the East. The Escarpment and the Central Plateau, with an average height of 1.700 m a.s.l., are situated between the two deserts. The capital, Windhoek, is located in the centre of the plateau (MENDELSON ET AL. 2002, MET 2002).

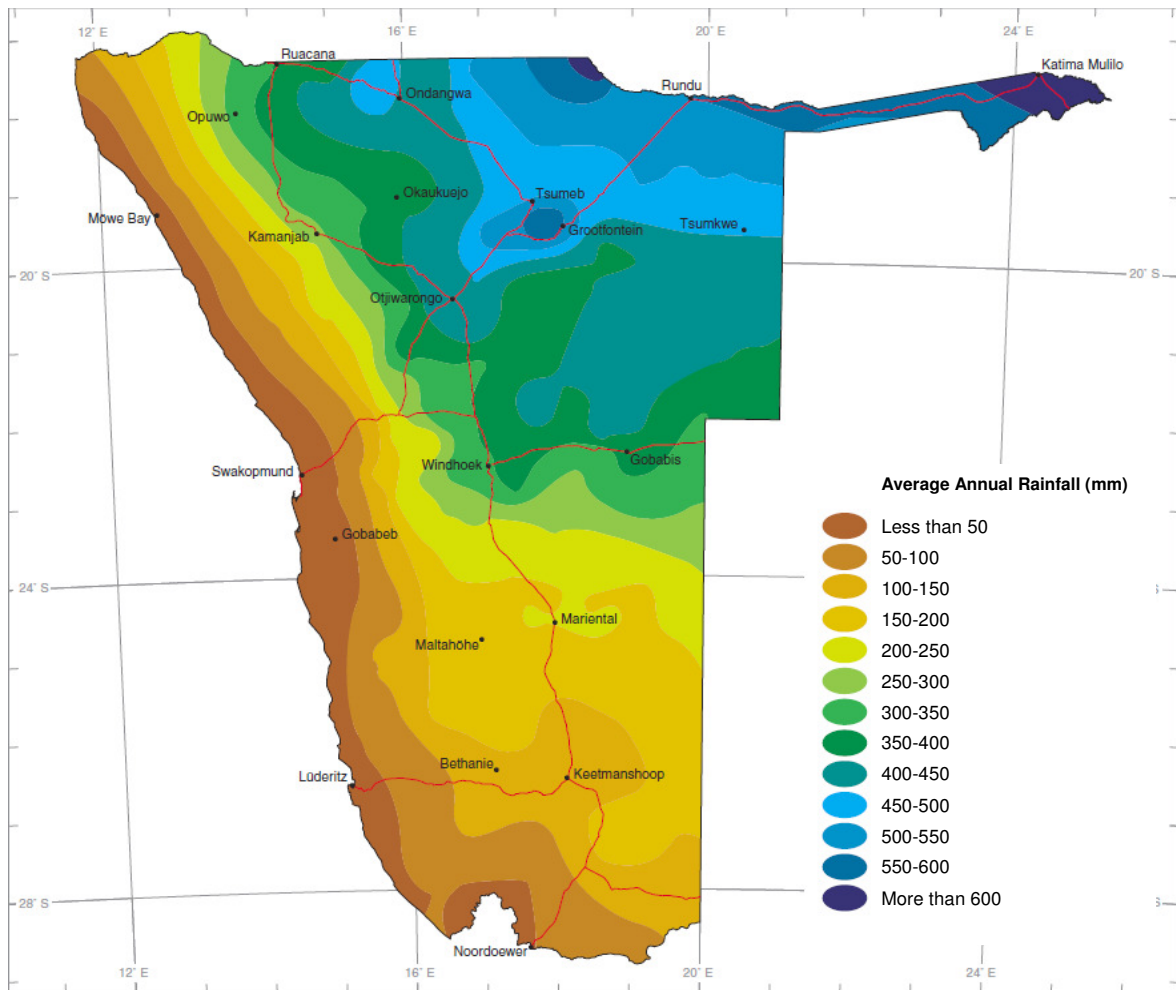


Map 1: Location of Namibia (MODIFIED AFTER CHRIST'S HOPE INTERNATIONAL 2010)

Namibia is the driest country in Sub-Saharan Africa, with deserts occupying around 1/5 of the country. It has only a few perennial rivers, which can be found on the border to Angola and Zambia and also on the southern border to South Africa, and no other permanent water bodies (WORLD BANK 2009). The country is mainly characterized by arid¹ and semi-arid² climates and is in general divided into two seasons; the dry winter season from May to October and the wet summer season from November to April. The northern part of the country belongs to the tropics and the southern part, starting south of Windhoek, to the subtropics. Its climate is determined by low precipitation and high evaporation rates which are determining factors in annual precipitation distributions. The north-eastern Caprivi receives the highest amount of average rainfall of more than 600 mm per year, a stark contrast to the lowest amounts of less than 50 mm in the South-West and along the coast (map 2) (MENDELSON ET AL. 2002, MET 2002).

¹ **Arid Climate:** Precipitation < evapotranspiration for a period of 10-12 months per year and less than 250 mm precipitation per year.

² **Semi-Arid Climate:** Precipitation < evapotranspiration for a period of 6-9 months per year and 250 to 500 mm precipitation per year (METEOROLOGYCLIMATE 2007).



Map 2: Average Annual Precipitation Distribution (MENDELSON ET AL. 2002)

The whole country potentially loses much more water through evaporation than it receives in precipitation. Water deficits are much lower towards the West along the coast and gradually decrease towards the North-East as a result of higher rainfalls and less evaporation. Namibia is a dry country where low and variable rainfalls are normal, and droughts are frequent. Mean annual temperatures range from 14-16°C on the coast to 22-25°C in the North and North-East (MENDELSON ET AL. 2002, MET 2002).

Political & Socio-Economic Characterization

Namibia is a republic which gained independence from South Africa and its apartheid system in 1990. It was the last colonized country in Sub-Saharan Africa to become independent. Since the independence, the country has implemented a multiparty parliamentary democracy which can be described as a stable political environment. The country is divided into 13 administrative regions. Furthermore, Namibia has a fairly developed infrastructure and a strong legal and regulatory environment (WORLD BANK 2009).

Namibia's population is estimated at 2.1 million people which, distributed over a surface area of 824.290 km² (Germany: 348.770 km²), yields a population density of 2.6 people per km² (Germany: 235.43 people per km²). Namibia is one of the least densely populated countries in the world. The life expectancy at birth is 61 years, and the total fertility rate is estimated at 3.4 births per women (all numbers refer to 2008) (WORLD BANK 2009, STATISTISCHES BUNDESAMT 2010 & WDI 2010). The short life expectancy is related to a high HIV prevalence rate of 17.8% (Germany: <0.1%) and a high tuberculosis prevalence rate of 290 per 100.000 people (Germany: 2 per 100.000 people) (all numbers refer to 2008) (WDI 2010, WHO 2009A, ROBERT KOCH INSTITUT 2009).

According to the WORLD BANK (2009) classification, Namibia, with a gross national income (GNI) per capita of 4.210 US\$ (2008), has belonged to the group of upper middle income countries (3.946 - 12.195 US\$) since 2007. Economic growth, in the form of the gross domestic product (GDP), had averaged 4.5% per year since independence up until 2008. Due to the global financial crisis the GDP growth decreased to 2.9% in 2008 and to a negative growth of 1.5% in 2009 (WORLD BANK 2009, AEO 2010).

The gini coefficient³ lies at 74.3 (Germany: 28.3) and is the highest in the world (both numbers refer to 2007). In 2009 Namibia had an unemployment rate of 51% (UNDP 2009, STATISTISCHES BUNDESAMT 2010 & AEO 2010). Around 42% of households live under the poverty line⁴ (CENTRAL BUREAU OF STATISTICS - NPC 2008). Namibia's economy relies heavily on the extraction and processing of minerals. It is well endowed with non-renewable natural resources including, uranium, gem-quality diamonds, copper, lead, zinc, pyrite, silver, gold, semiprecious stones amongst others (WORLD BANK 2009). The extraction of these natural resources contributes to more than 60% of the total export incomes (FAO & WFP 2009). Furthermore Namibia has both rich fish stocks and abundant livestock (AUSWÄRTIGES AMT 2010). Agriculture, forestry and fishing have a share of only 9.6% (2008) of the GDP, but over 70% of the total population directly derives their livelihoods from these activities (AEO 2010, FAO & WFP 2009). The further composition of the GDP is shown in table 1 and figure 1.

³ **Gini Coefficient:** Is a measure of the inequality of a distribution. Here used as a measure of inequality of income which lies between 0 and 100. A value of 0 represents absolute equality and 100 absolute inequality (UNDP 2009).

⁴ **Poverty Line:** Households where consumption levels per adult equivalent are lower than 262.45 Namibian Dollar (~27 Euros) per months (CENTRAL BUREAU OF STATISTICS – NPC 2008).

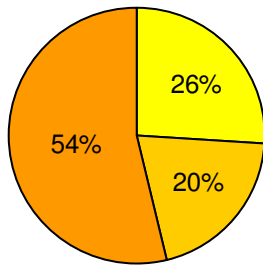


Figure 1: GDP by Sector for 2008 (REDRAWN FROM AEO 2010)

Table 1: Detailed GDP by Sector for 2008

| Sector | Distribution |
|---|--------------|
| Primary | 26% |
| Agriculture, Forestry & Fishing | 9.3% |
| Mining & Quarrying | 16.8% |
| Secondary | 20% |
| Manufacturing | 13.2% |
| Construction | 4.4% |
| Electricity & Water | 2.3% |
| Tertiary | 54% |
| Hotels (Tourism) | 13.0% |
| Real Estate & Business Activities | 12.1% |
| Education, Health & Social Work | 11.5% |
| Public Administration & Defence | 9.1% |
| Transport & Communications | 5.1% |
| Community, Social & Personal Service Activities | 3.2% |

Source: BASED ON AEO 2010

It is also noteworthy that the economy is closely linked to South Africa's, with the Namibian Dollar pegged to the South African Rand on a one-to-one basis. Moreover, Namibia sources over 80% of its imports from South Africa (FAO & WFP 2009).

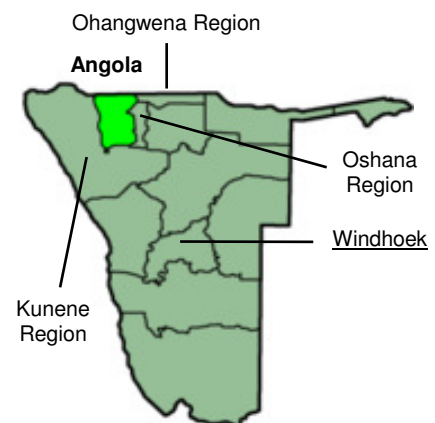
1.1.2 Omusati Region

The Omusati Region was selected as the case study area due to the affiliation to communal land. Further reasons for the selection are mentioned in section 2.2.4.

Physical Characterization

The Omusati Region belongs to the Northern Central Regions bordering on Angola to the North and domestically on the Ohangwena Region in the North-East and on the Oshana Region in the East as well as on the Kunene Region in the South and West (see map 3) (NAMIBIA GOVERNMENT 2010).

The region is located on a plateau with an average altitude of 1150 m a.s.l. in the North-East and 1080 m a.s.l. in the South.



Map 3: Location of Omusati Region (MODIFIED AFTER NAMIBIA GOVERNMENT 2010)

The main part of the Omusati Region belongs to the biome Tree-and-Shrub Savanna; only a small part of the region in the South-West belongs to the Temporary Lakes and Salt Pans biome. The three main vegetation types found in the region are the Western Kalahari Woodlands, the Mopane Shrubland with few salt pans in the South-East and the *Cuvelai Drainage in the North-East* (MENDELSON ET AL. 2002).

The landscape is made up of a successive series of sand dunes of varying depths, which are separated by the temporary water bodies of the Cuvelai Drainage (see excursus Cuvelai) (OMUSATI REGIONAL COUNCIL 2006).

Excursus: Cuvelai

The River Cuvelai originates in Angola with its catchments falling between the Kunene and the Kavango drainage system (see map 4). Cuvelai is a series of low-gradient, often parallel, south-oriented mostly dry watercourses (local term: oshanas), which funnel towards the Etosha Pan and form a massive inland delta. The system is fed by a number of Angolan rivers which receive on average 800 mm precipitation per year. During the wet season the meandering watercourses often fill with water and cut into the underlying sediments. Flooding can occur in the event of heavy precipitation.

(ENCYCLOPÆDIA BRITANNICA 2010, NPC 2007 & MENDELSON ET AL. 2002).



Map 4: Location of the Cuvelai Drainage (MODIFIED AFTER NNF 2006)

Vegetation is dominated by Mopane trees (*Colophospermum mopane*) which grow on the shallower sand dunes. On the deeper sand dunes Makalani palms (*Hyphaena petersiana*), Fig trees (*Ficus sycomorus*), Marula trees (*Sclerocarya birrea*) and dense thickets can be found.

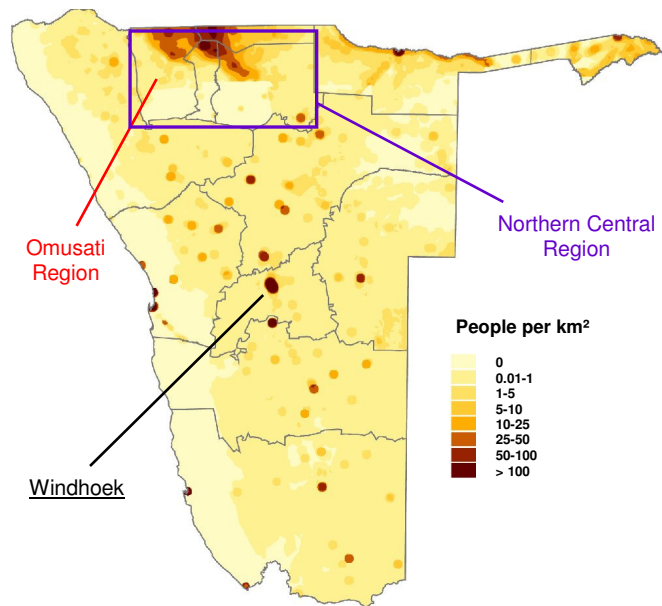
The soils in the *Cuvelai Area* are dominated by sodic sands and in the Western Kalahari Woodlands as well as in the Mopane Shrubland by sands and loams (OMUSATI REGIONAL COUNCIL 2006).

The climate is characterized as semi-arid with 250-300 mm mean annual precipitation in the South-West to 450-500 mm mean annual precipitation in the North-East. The rainy season occurs in summer from October to April. Furthermore a *high degree of variation in*

precipitation rates exists. Mean maximum temperatures in summer are between 32°-35°C and mean minimum temperatures in winter (May-September) are around 5°-10°C (NPC 2007).

Political & Socio-Economic Characterization

The Omusati Region is one of Namibia's 13 administrative regions and is divided into 12 constituencies. The region covers a total area of 26.573 km² (comparable in size to the state of Brandenburg in Germany: 29.479 km²) and accounts for 3.23% of the total land area of Namibia (NPC 2007 & STATISTISCHES BUNDESAMT 2008). More than 243.000 people live within this region, which with Namibia's population of approximately 2.100.000, comprises roughly 11.5% of the national population (GOVERNMENT OF THE REPUBLIC OF NAMIBIA ET AL. 2009). The mean population density is estimated at 8.6 people per km² whereby the *majority of the population lives in the North-East* of Omusati Region (map 5). This implies a mean population density of 10-25 and 25-50 people



Map 5: Namibia's Population Density (MODIFIED AFTER NNF 2006)

per km² in that area and in very densely populated areas a density of 50-100 people per km² (NPC 2007). 50% of Namibia's population can be found in the Northern Central Region (Omusati, Oshana, Oshana and Oshikoto Regions) on an ephemeral wetland which constitutes 10% of the country's surface area (map 5) (DFRN 2005).

The *life expectancy* in the region is *approximately 50 years*, the fertility rate is 4.1 children per women, and the *HIV prevalence rate is about 24%* (MOHSS & MACRO INTERNATIONAL INC. 2008, MOHSS 2008). In the Omusati Region the illiteracy rate is about 14%. Those people who received any education attended mostly primary school (96%) compared to 46% who attended secondary school (MOHSS & MACRO INTERNATIONAL INC. 2008). Regionally, around 44% of households are under the poverty line which represents almost 12% of all poor households in Namibia. These households have less than 262.45 Namibian Dollar (~27 Euros) available per month. The *unemployment rate is 78.6%* (JO-MARÉ DUDDY 2010). At 46, the gini coefficient in the Omusati Region is one of the lowest

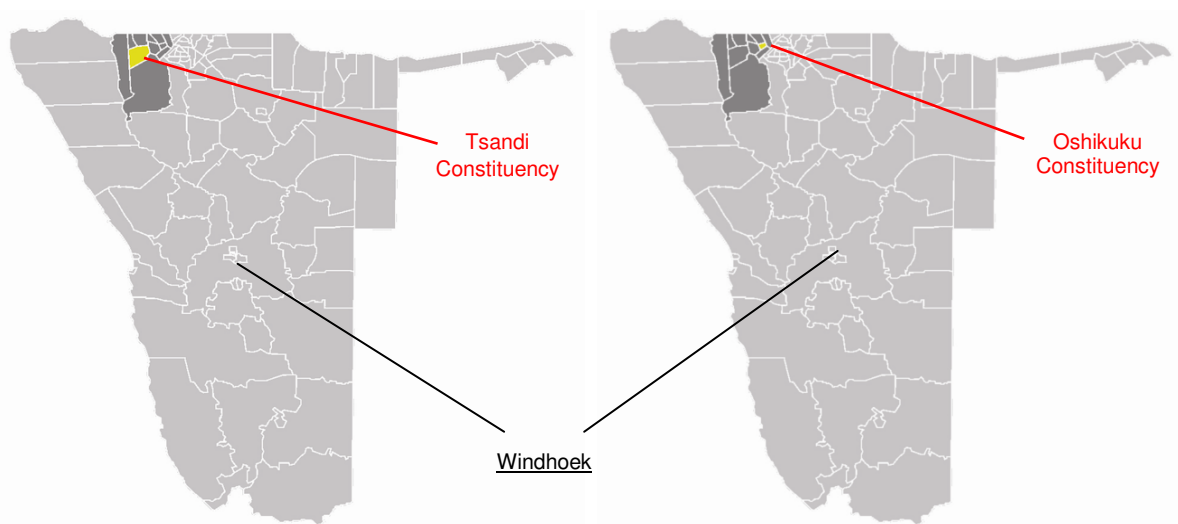
in Namibia (a value of 0 represents absolute equality and 100 absolute inequality). This implies that the majority of people have a similar, low standard of living (CENTRAL BUREAU OF STATISTICS - NPC 2008).

*Omusati is mainly an agricultural region. Around 98% of the population lives in rural areas and for 45.5% of the population farming, particularly small-scale subsistence farming is the main source of income. Farming is dominated by rain fed cropping and livestock farming. The main crops grown are pearl millet (local term: mahangu) (*Pennisetum glaucum*), watermelon (*Citrullus lanatus*), beans (*Phaseolus vulgaris*), sorghum (*Sorghum bicolor*) and maize (*Zea mays*). Domesticated livestock is dominated by cattle, goats and donkeys (NPC 2007). Both the manufacturing and service sector play a minor role in the region's economy.*

1.1.3 Communities

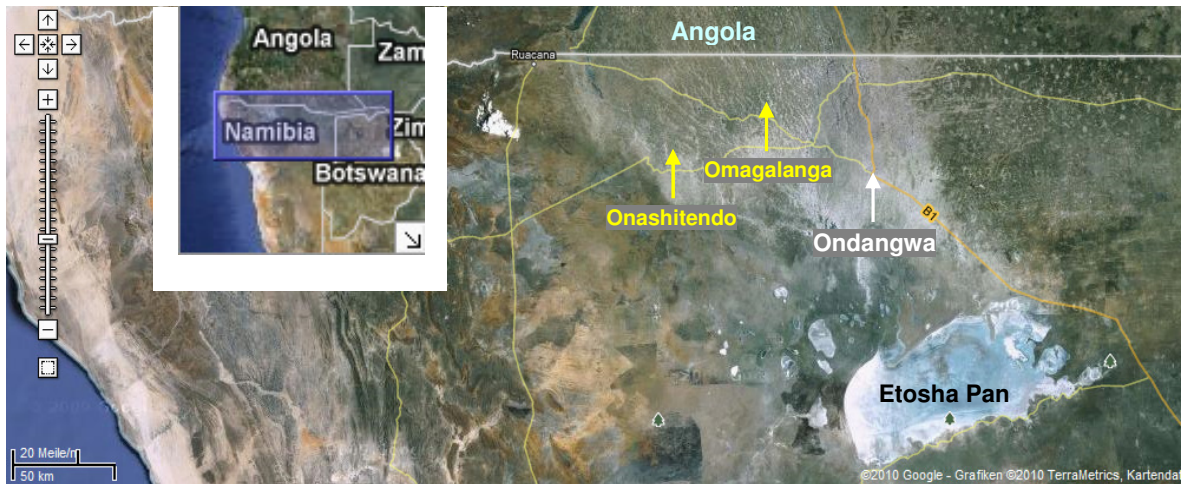
For the case study two communities from the Omusati Region were selected. The reasons for choosing these two communities are described in chapter 2.2.4.

The communities of Onashitendo and Omagalanga are located in the North and North-Eastern Part of Omusati Region respectively. *Both communities are situated within the Cuvelai Drainage* (see section 1.1.2 excursus “Cuvelai”) (NPC 2007). Onashitendo belongs to the Tsandi Constituency, and Omagalanga belongs to the Oshikuku Constituency (map 6).



Map 6: Location of Tsandi & Oshikuku Constituency within the Omusati Region (MODIFIED AFTER WIKIPEDIA 2010)

Around 26.830 inhabitants live in the Tsandi Constituency, and around 8.100 inhabitants live in the Oshikuku Constituency (MoHSS 2004). Exact population numbers for both communities can be only estimated due to the lack of data. It is estimated that Onashitendo consists of 20-40 households and Omagalanga of 30-50 households. The distance between both communities' amounts to 70 km and the location of them are shown in map 7 as satellite image. All further characteristics of the communities are described in section 3.1.1 & 3.1.2.



Map 7: Location of the Communities Onashitendo & Omagalanga within the Cuvelai Drainage (MODIFIED AFTER GOOGLE MAPS 2010)

1.2 Land Allocation in Namibia

The subjects of land and land allocation have played a central role in the shaping of Namibia in the last 150 years. To understand current land questions, reform processes and the background of the research questions of this thesis it is necessary to consider the historical development of Namibia and thus land allocation (see section 1.2.1). After the relevant historical observations are made, section 1.2.2 goes on to explain the background of the current land reform process. Furthermore, this section gives a first impression of the land use rights into which the Communal Land Reform Act is divided and the types of legal regulations upon which it is built.

1.2.1 Ante-Independence Development

This chapter provides an overview of the main historical events regarding land allocation changes in the last 130 years (see table 2).

Table 2: Historical Events & Land Allocation from 1866 to 1994

| Historical Event | Year | Land Allocation | |
|---|------|--|-------|
| With South Africa under British rule, islands off the Namib coast are declared British territory. | 1866 | | |
| Walvis Bay is annexed by Britain as part of the Cape Colony. | 1878 | | |
| | 1883 | Land acquisition by the Germans began when an area around the town of Lüderitz and a wide strip of land from the Orange River north to 26° South was purchased. | |
| Germany declares Namibia a German protectorate. | 1884 | | |
| Namibia becomes a German colony, and the Caprivi is added to Namibia. | 1890 | | |
| | 1897 | Owing to the rinderpest epidemic that had killed most cattle in Namibia, many Herero cattle farmers were forced to seek the charity of missions. They gave up their land more readily to German settlers or companies. | |
| | 1902 | <ul style="list-style-type: none">• Freehold land⁵: 6%• Communal land⁶: 30%• Government land⁷: 64% | map 8 |
| | 1911 | <ul style="list-style-type: none">• Freehold land: 21%• Communal land: 9%• Government land: 70% | |
| German forces surrender to troops from the new Union of South Africa which had become part of the British Empire in 1910. | 1915 | Many white South African farmers moved onto Namibian farms, which they were then allowed to lease for five years. | |
| | 1919 | Police Zone was proclaimed in Northern Namibia. The Zone served to restrict and contain the mobility of people and animals as well as the spread of cattle diseases from northern Namibia to the rest of the country. | |
| The League of Nations grants South Africa a mandate to govern Namibia. | 1920 | | |

⁵ **Freehold / Commercial Land:** is purchased & used for commercial farming by individuals or companies.

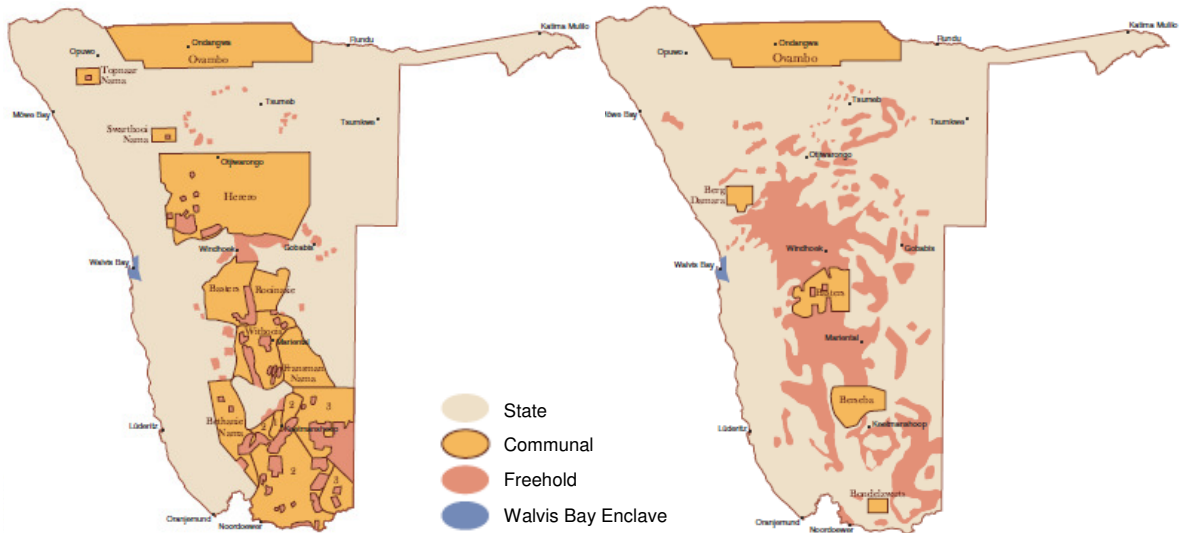
⁶ **Communal Land:** were allocated for communal use / subsistence economy by the government of the time.

⁷ **Government Land:** are used by the government (e.g. national parks or mining areas) or not yet allocated (MENDELSON ET AL. 2002).

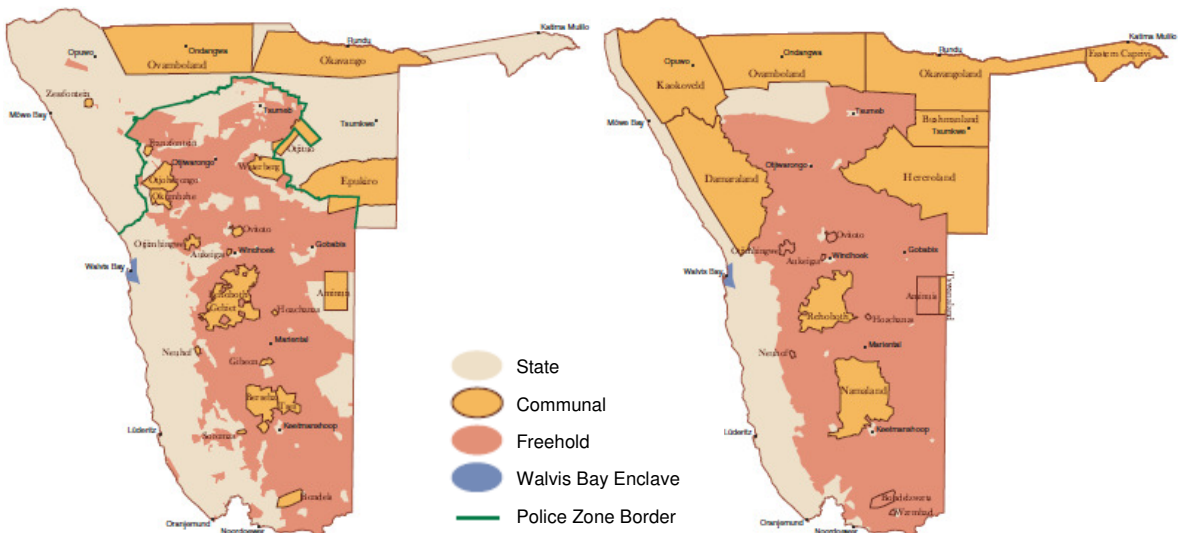
INTRODUCTION

| | | | |
|---|------|---|-------|
| | 1937 | <ul style="list-style-type: none"> • Freehold land: 36% • Communal land: 17% • Government land: 47% <p>Increase of land categories due to an amplification of each category.</p> | map 9 |
| The United Nations rejects South Africa's attempt to turn Namibia into a fifth province of South Africa. | 1946 | | |
| | 1955 | <ul style="list-style-type: none"> • Freehold / commercial land: 47% • Communal land: 27% • Government land: 26% | |
| Formation of South West African National Union, the first nationalist movement in Namibia. | 1959 | | |
| The South West Africa People's Organization (SWAPO), which was to lead the struggle for independence, was formally established. | 1960 | | |
| South Africa becomes a republic, and the United Nations starts to recognize the need for independence for Namibia. | 1961 | | |
| | 1964 | <p>Odendaal Commission's proposals were the establishment of ten ethnic areas. Background was the South African apartheid policy of fostering ethnic identity and divisions which was implemented, in part, to counter the rise of black nationalism during the 1960s. Consequence was that each indigenous ethnic group were consolidated in its own separate area, known as a homeland. As a result of this proposal, many freehold farms were also reallocated for communal use because of non usability for commercial farming.</p> <ul style="list-style-type: none"> • Freehold / commercial land: 44% • Communal land: 41% • Government land: 15% | map 9 |
| Following increasing discontent, the armed liberation struggle begins at Ongulumbashe. | 1966 | | |
| The United Nations declares South Africa's occupation of Namibia illegal. | 1968 | | |
| Namibia becomes independent on the 21 st of March. | 1990 | | |
| Walvis Bay is reintegrated into Namibia. | 1994 | | |

Source: BASED ON MENDELSON ET AL. 2002



Map 8: Land Allocation 1902 (left) and 1911 (right) (MENDELSON ET AL. 2002)



Map 9: Land Allocation 1937 (left) and 1964 (right) (MENDELSON ET AL. 2002)

1.2.2 Post-Independence Development until 2002/2003

With independence in 1990, the new Namibian government inherited a highly skewed distribution of land. Approximately 36.2 million hectares of land, representing 44% of the total land area, continue to be held under freehold title. This land is commonly referred to as the commercial farming sector. Under previous apartheid policies, access to this land was reserved to white farmers, and the freehold farming sector is still dominated by white land owners. By contrast, the communal areas comprise about 33.4 million hectares, representing 41% of total land area (WERNER 2003).

The National Conference on Land Reform, which was held in 1991, can be seen as the starting point for modern land reform in Namibia. 24 resolutions regarding, for example, land law, land tenure, development of unutilized communal land and the implementation of a land value tax were adopted. In the following years land reform was focused on the unequal distribution of land in the commercial farm areas which originated with unjust farm expropriations during the German and South African colonialization. Therefore, a reallocation of land (change of tenure) in commercial areas was initiated. The aim of this program was to provide formerly disadvantaged Namibians with the opportunity to resettle and cultivate their own piece of land. By the end of the 1990s/beginning 2000s there was the need for action also in communal areas regarding a land reform. Insufficient or rather weak economic, social and ecological conditions (see section 1.1.2), such as high land use and population pressure as well as land-related disputes (see following excursus), were all contributing factors to the need for reform (SCHÜLER 2009).

Excursus: Land-Related Disputes

At a regional level there are 13 political regions comprising 102 constituencies. These were first demarcated in 1993 for purposes of regional representation. Local governments or authorities are provided by the proclamation of settled areas as municipalities, towns and villages whereas freehold and state land are administrated by the government. A special, additional form of local administration, the traditional leaderships, exists in the communal areas. Chiefs and Traditional Authorities were responsible for both settling disputes and the allocation of land use rights (based on their traditional tenure system) until the Communal Land Reform Act was enacted in 2002. In most cases these allocations were not notationally documented. This traditional procedure caused many land-related disputes such as boundary disputes, double allocations, unauthorised area extensions and illegal fencing. Furthermore, an official / fair regulation regarding the size of the allocated land and the handling of fences did not exist. Some people were allowed to fence their land, and others were not. This resulted in a lack of trust in the allocation of communal land. How these traditional systems are organized varies among the communities. Most of them operate within some kind of hierarchical order. While ultimate power is vested in a king, chief or tribal council, the local representative is a headman or headwoman or a village committee. On average, there are about 44 households and 360 people in each headman's area. Traditional authorities are elected or may inherit a position of leadership from a family member. Certain traditional leaders are recognised in terms of the Traditional Authorities Act (No. 17 of 1995). The responsibilities of traditional leaders in relation to those of local or regional government are not always clear (MENDELSON ET AL. 2002, MEIJS & KAPITANGO 2009).

As a result the first Communal Land Reform Act (CLRA), Act 1, was adopted in 2002, and the Communal Land Reform Act, Act 2, was adopted in 2003 (both acts called in the

following the CLRA) (SCHÜLER 2009). The CLRA aims to remove uncertainties about legitimate access and land use rights (communal) and the way in which land is administered. Hence, under this act, a system of uniform land should be implemented which would thereby achieve a reduction of land disputes and secure land use rights in all communal areas of Namibia (MEIJS & KAPITANGO 2009). In addition, the CLRA should promote (1) the economic and social development of Namibians, particularly the landless and those with insufficient access to land who are subsistence farmers, and (2) a sustainable use of natural resources (LAC & NNFU 2009). The CLRA is divided into two land use rights with specific criteria which are shown in table 3. The rest of the land is referred to as “commonage” and can be used for grazing by the local community (MEIJS, KAPITANGO & WITMER 2009).

Table 3: Tenure Rights under CLRA

| Land Use Right | Criteria |
|----------------------|--|
| Right of Leasehold | <ul style="list-style-type: none"> • Purposes: specific commercial activity • Size: maximum of 50 ha • Period: 99 years, which can be renewed • Piece of land is acceptable collateral for finance institution to receive a loan |
| Customary Land Right | <ul style="list-style-type: none"> • Purposes: use as farming and/or residential unit for self-subsistence • Size: maximum of 20 ha • Period: lifetime; after the death of the certificate holder, wife / husband have the first right to take the certificate over • Piece of land is not acceptable collateral for finance institution to receive a loan |

Source: BASED ON LAC & NNFU 2009

In the period from 1990 to 2003 various other policies and legal frameworks, besides the Communal Land Reform Act (2002/2003), were enacted to guide land reform in Namibia (WERNER 2003):

- The Constitution of the Republic of Namibia, 1990
- Agricultural (Commercial) Land Reform Act, 1995
- White Paper on Resettlement, 1997
- National Land Policy, 1998
- Communal Land Reform Act, 2002

As previously mentioned, however, the Communal Land Reform Act is the only determining legal framework for communal land.

1.3 Objective

This master thesis analyses the Communal Land Reform Act (CLRA), especially the Customary Land Right, in the period from 2002 to 2010 against the background of historical-political, socio-economic and physical aspects. The focus of this research centers on the Customary Land Right as this right applies for the majority of land users in communal areas. For the examination of the CLRA / communal land registration process two objectives were defined:

Ultimate Objective: Improvement of the land registration process in order to enhance livelihoods of land users and reduce global and national change impacts such as land use pressure, land degradation, high food prices and changes in population composition.

Objective: Evaluation of the communal land registration process including a vulnerability assessment for the target group of land users regarding global and national changes such as climate change, import dependency, demographic changes and high HIV ratio.

In order to evaluate and assess the vulnerability of the mentioned process, the Sustainable Livelihood Approach was applied. This approach serves as a framework to generate a realistic estimation of assets, risks and vulnerabilities as well as adaptive capacities for the people in communal areas in terms of livelihood. The relationship between actual impacts from global change and certain properties of the affected system (e.g. a society, ecosystem) is described with the term vulnerability. Vulnerability Assessment has become an important branch of global change research (PATT ET AL. 2009).

To achieve the “Ultimate Objective” it is desirable to develop beneficial and effective recommendations for decision makers. In order to derive the appropriate recommendations, an effective “Vulnerability Assessment⁸” was used. To achieve the objectives of this presented work the following research questions were developed:

1. Does the process of land registration in communal areas consider global & national change (e.g. climate change, population growth, high HIV ratio)?

⁸ **Vulnerability Assessment:** Is the condition of a given area with respect to hazard, exposure, preparedness, prevention, and response characteristics to cope with specific natural hazards; a measure of capability of this set of elements to withstand events of a certain physical character (WEICHELGARTNER & BERTENS 2000).

2. Does land registration in communal areas contribute to increasing the adaptive capacity and decreasing the vulnerability to global & national change (e.g. climate change, population growth, high HIV ratio)?
3. Does land registration in communal areas contribute to investments in sustainable land use and thus to the enhancement of livelihoods and reduction of poverty for land users?

To be able to respond the research questions different intermediate steps were necessary.

In order to research question 1 & 2: The Changing Structures & Processes (e.g. political, socio-economic changes) and the *Vulnerability Context* (mainly physical changes) were analyzed, among other methods, on the basis of an intensive literature review and interviews of locals and experts (see section 3.2 and 3.3). Based on the gained insights it was possible to link the Changing Structures & Processes and the Vulnerability Context with the livelihoods of land users and thus with their *Livelihood Strategies* and *Livelihood Outcomes*. It was then possible, in a further step, to assess to what extent the land registration considered global and national changes as well as to what extent the land registration contributes to a decrease of the vulnerability and an increase of the adaptive capacity towards global and national changes.

In order to research question 3: A detailed analysis of the Livelihood Assets (e.g. Physical and Financial Capital) of small-scale farmers or rather land users who live in communal areas as well as of the land registration process was required. The main activity of the analysis was a case study of two communities. In that way it was possible to evaluate and assess the influence of the land registration process on the livelihoods of the local people with regards to investments in sustainable land use.

The results should contribute to a better understanding between the needs and livelihood strategies of land users and the legislation proposed by policy makers / consulting corporations.

2 Approach & Methods

This chapter starts with introducing the theoretical background of the Sustainable Livelihood Approach. The approach forms the basis of the applied case study. The second part of this chapter presents the applied methods. First, the selection of the research area will be described, followed by the structure of the study and the theoretical and practical background of the applied methods.

2.1 Sustainable Livelihood Approach

2.1.1 Background

The main goal of development cooperation is the elimination of poverty. Adopting the Sustainable Livelihood Approach (SLA) to assist in understanding poverty directly contributes to achieving the aim of reducing and eliminating poverty. The British Department for International Development (DFID) designed the SLA in 1997 due to a new policy on international development set out in the White Paper by the British Government. The major focus of this policy is a commitment to the internationally agreed upon target to halve the number of people living in extreme poverty by 2015 which also includes addressing associated targets such as the provision of basic health care and universal access to primary education (NSSD 2004).

The SLA points out the main factors that affect people's livelihoods and explains typical relationships and dependencies amongst them. This implies that its application enables a wider and more complex understanding of the opportunities, constraints, objectives and interactions that are part of poor peoples' lives. It can be used in both planning new development activities and assessing the contribution to livelihood sustainability made by existing activities (IFAD 2010B).

2.1.2 The Sustainable Livelihood Framework - Theory

The Sustainable Livelihood (SL) Framework focuses particularly on poor people living in rural areas. Additionally, it includes accessible and usable resources and livelihood assets of people which are of major significance. These can comprise, for instance, natural resources, technologies, knowledge and capacities, skills, health status, access to education, sources of credit or social support networks.

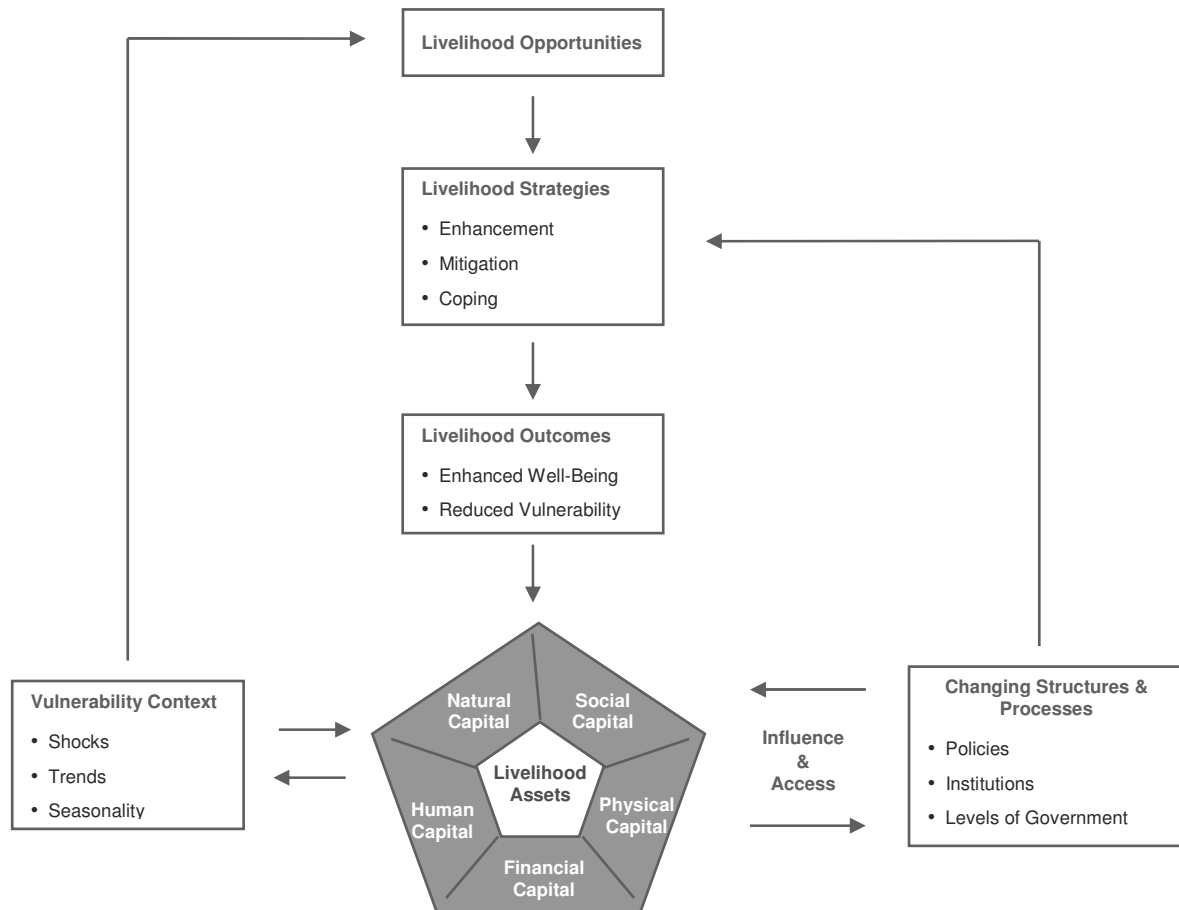


Figure 2: Sustainable Livelihood Framework (MODIFIED FROM DFID 1999)

The extent of rural people's access to these "Livelihood Assets" is strongly influenced by their "Vulnerability Context" (figure 2) which takes into account trends (e.g. economic, political, demographic), shocks (e.g. conflicts, epidemics, natural disasters) and seasonality (e.g. prices, production, employment opportunities). Access is also influenced by the prevailing "Changing Structures & Processes". They affect how people combine and use their assets to achieve their goals. These are their "Livelihood Strategies". "Livelihood Outcomes" are the achievements or outputs of the chosen "Livelihood Strategies". Outcomes do not have to be the same as objectives. The latter are to be understood as the goals individuals are aiming for (IFAD 2010B). The focus on assets results from a vision of poverty as a multi-dimensional situation and "...that you're poor not just because you have no money, but because you have no access to education, or natural resources, or political representation" (KÖBERLEIN 2003: 29). The SLA supports poor people as they address constraints or take advantage of opportunities. The SL Framework is an analysis which needs to be adapted and elaborated depending on the situation (IFAD 2010B). This requirement was met in the presented thesis.

The SL Framework is built upon seven guiding principles:

- People-centred
- Holistic
- Dynamic
- Building on strengths
- Promoting micro-macro links
- Encouraging broad partnerships
- Sustainable

The framework does not work in a linear manner and does not try to present a model of reality. Its aim is to help stakeholders with different perspectives to engage in a structured and coherent debate about the factors that affect livelihoods, their relative importance and the way they interact. This, in turn, should help to identify appropriate entry points for the support of livelihoods (DFID1999).

There are obvious examples for interactions between “Livelihood Assets” and “Livelihood Strategies”: Those owning more assets tend to have a greater range of possibilities available and the opportunity to switch between multiple strategies in order to secure their livelihoods (DIRR & FÖLDI 2007). Another example applies to “Livelihood Outcome”; if people feel less vulnerable they frequently choose to have fewer children. This has implications for population trends which might be an important part of the “Vulnerability Context” (DFID 1999).

Livelihood Assets

At the centre of the SL Framework are the “Livelihood Assets” in the shape of a pentagon. Its shape may vary depending on people’s access to and the combination of different assets (figure 3). The centre point of the pentagon represents zero access while the outer perimeter represents maximum access to assets. The shape of a pentagon can stand for communities, social groups or individuals (DIRR & FÖLDI 2007).

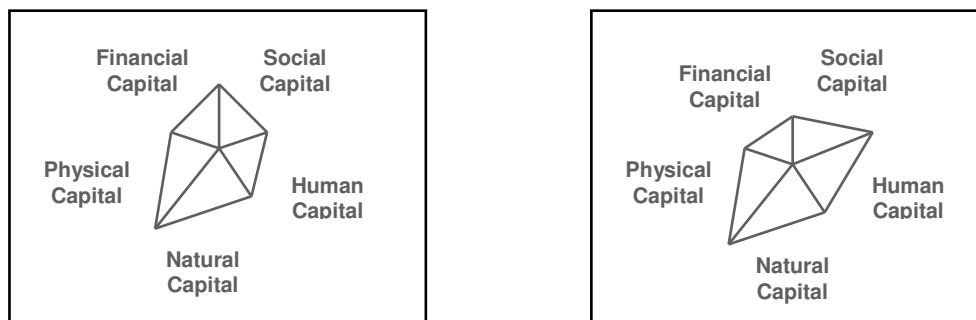


Figure 3: Possible Pentagons Shapes which Represent Changes in Access to Assets (REDRAWN FROM DFID 1999)

Generally, the “Livelihood Assets Pentagon” consists of five different capitals which are presented in the following table 4.

Table 4: Livelihood Assets

| Human Capital | Social Capital | Natural Capital | Physical Capital | Financial Capital |
|---|---|--|--|--|
| <ul style="list-style-type: none"> • Age • Gender • Education • Labor • Skills • Health | <ul style="list-style-type: none"> • Networks • Norms / Trust • Organizations • Social Cohesion • Kinship / Membership | <ul style="list-style-type: none"> • Stock of natural ecosystems⁹ • Ecosystem services¹⁰ | <ul style="list-style-type: none"> • Housing/Tenure • Household • Good Personal Belongings • Production Equipment & Tools • Property/Land • Infrastructure | <ul style="list-style-type: none"> • Credits • Debts • Earnings • Remittances • Pensions • Savings |

Source: MODIFIED AFTER DFID 1999

Changing Structures & Processes

These are institutions, organizations, policies and legislation within the livelihoods framework that shape livelihoods. Their importance cannot be overemphasized. They operate at all levels, from household issues to the international level, and in all spheres, from the most private to the most public (DFID1999).

They can be determined according to:

- Access (to various types of capital, to livelihood strategies and to decision-making bodies and sources of influence);
- Terms of exchange between different types of capital; and
- Returns (economic and otherwise) to any given livelihood strategy.

The following two tables 5 and 6 offer an insight into possible structures and processes.

⁹ **Stocks of Natural Ecosystems:** are yields of valuable ecosystem goods or services that flow into the future (CONSTANZA & CLEVELAND 2008).

¹⁰ **Ecosystem Services:** are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other nonmaterial benefits” (MILLENNIUM ECOSYSTEM ASSESSMENT 2003:3).

Table 5: Structures

| Public Sector | Private Sector |
|---|--|
| <ul style="list-style-type: none"> • Political (legislative) bodies at various levels from local through to national • Executive agencies (ministries, departments) • Judicial bodies (courts) | <ul style="list-style-type: none"> • Commercial enterprises & corporations • Civil society / membership organizations • NGO's |

Source: DFID 1999

Table 6: Processes

| Policies | Legislation | Institutions | Culture | Power Relations |
|---|--|--|--|---|
| <ul style="list-style-type: none"> • Macro • Sectoral • Redistributive • Regulatory | <ul style="list-style-type: none"> • International agreements • Domestic | <ul style="list-style-type: none"> • Markets • Institutions that regulate access to assets | <ul style="list-style-type: none"> • Societal norms & beliefs | <ul style="list-style-type: none"> • Age • Gender • Caste • Class |

Source: DFID 1999

Vulnerability Context

The “Vulnerability Context” frames the external environment in which people exist. People’s livelihoods and a wider availability of assets are fundamentally affected by critical trends as well as by shocks and seasonality - over which they have limited or no control. In order to analyze people’s livelihoods, it is crucial to understand the “Vulnerability Context”. Table 7 provides examples of trends, seasonality and shocks.

Table 7: Vulnerability Context

| Trends | Seasonality | Shocks |
|--|--|--|
| <ul style="list-style-type: none"> • Population trends • Resource trends (land use) • National / international economic trends • Trends in governance (including politics) • Technological trends | <ul style="list-style-type: none"> • Prices • Production • Health • Employment opportunities • Natural events | <ul style="list-style-type: none"> • Human health shocks (e.g. pandemics) • Natural shocks (e.g. climate change, extreme weather events) • Economic shocks (e.g. financial crisis) • Crop / livestock health shocks • Conflicts |

Source: MODIFIED AFTER DFID 1999

Livelihood Strategies

Within a dynamic process people combine activities to meet their various needs at different times (DFID 1999). The analysis of strategies is essential since the choice of specific strategies directly translates into a successful or hampered realization of objectives. In order to achieve these objectives, long-term planning is necessary but in most cases not possible for poor people. They have to develop their strategies on a daily basis (DIRR & FÖLDI 2007). According to KÖBERLEIN (2003) “Livelihood Strategies” can be distinguished into three types of strategies that are often combined (table 8):

Table 8: Livelihood Strategies

| Enhancement = Opportunities | Mitigation = Risks | Coping = Emergencies |
|---|--|---|
| <ul style="list-style-type: none"> • Objective: growth & increased security • Condition: an opportunity + possibility of investment | <ul style="list-style-type: none"> • Objective: precaution / prevention against possible risks / shocks • Condition: diversification + combination of different assets | <ul style="list-style-type: none"> • Objective: readjust or recover the old status quo • Condition: event / shock has all ready taken place |

Source: KÖBERLEIN 2003

Livelihood Outcomes

“Livelihood Outcomes” can range from lasting livelihood security as a positive outcome to extreme vulnerability as a negative outcome that has not been intended but is the result of badly chosen or inappropriate strategies.

Categories of desirable “Livelihood Outcomes” include:

- Reduced vulnerability
- More income
- Increased well-being
- More sustainable use of the natural resource base
- Improved food security

“Livelihood Outcomes” are not an “end state”. On the contrary, there is a dynamic and constant feedback from outcomes to other aspects of the framework (DFID 1999).

2.2 Methods - Application of the Sustainable Livelihood Approach

This chapter first provides an overview regarding the embedding of the project (section 2.2.1). The design of the case study (see 2.2.2) is then followed by the description of the methods used to answer the developed research questions (see 2.2.3). The introduced “Sustainable Livelihood Approach” (see 2.1.2) serves as a livelihood vulnerability assessment and intends to produce guidelines towards adaptive capacities, thus creating diversified livelihoods for the people in the respective communities. The application of the SLA was carried out in a methodical, stepwise fashion. Initially, the study area was selected (see 2.2.4); after this step secondary data was collected in order to gather necessary knowledge about the object of study. It was then possible to determine entry strategies, which include the identification of key stakeholders (see 2.2.5), and to accomplish further proceedings such as the preparation of the fieldwork. This led to the implementation of the assessment based upon different participatory methods (see 2.2.6). For example, it was indispensable to understand the range of assets, activities and capabilities that create different “Livelihood Strategies” and to assess the key aspects of the “Vulnerability Context”. The collected data was then analyzed, and in this way it was possible to draw links. This required the identification of connections between issues on the local level and factors affecting them that originate in the broader environment. Due to the linkages of the assessed information, recommendations could be developed for the national and local level. Another step was the reflection of the kind of fieldwork and approach applied due to the identification of strengths and weaknesses. This evaluation can be taken into account for further procedures or rather for the implementation of the recommendations. Some of the aforementioned steps will be singled out and presented in this subchapter.

2.2.1 Embedding of the Project

The author’s correlation between the selected research topic and the land registration process in the communal areas of Namibia was a three month involvement in a German Technical Cooperation (GTZ) internship in the field of land reform. Since the enactment of the Communal Land Reform Act (2002/2003), the GTZ, amongst others, attends the land registration process under the order of the Federal Ministry for Economic Cooperation and Development (BMZ). The goal of the project “Support to Land Reform” is to support the development and implementation of a coherent national strategy (action plan) for land reform. Further goals of the German support are to overcome institutional weaknesses in the field of land use planning and land management, to both build capacities and to create public awareness needed for sustainable land use (GTZ 2010A). The project is divided into

four project phases with a duration of 14 years (2003-2016). The third phase (2010-2013) is currently being implemented. The project has different focal areas, one of these areas regards the support of communal areas in terms of land related issues. Providing support for equal access to communal land and implementing productive as well as sustainable land use practices are the goals of this focal area. Different indicators were developed to measure the efficacy of the support. Relevant indicators for communal land are provided below:

- In those communal areas in which the Millennium Challenge Corporation (MCC) is not working 76.000 secure land use rights should be registered according to the Communal Land Reform Act, and the percentage of land use rights titles appropriated for women should amount to at least 40%. Baseline value is 15.300 (equal to 20%) registered land use titles by the end of 2009.
- At least 50% of land disputes in communal areas in which the MCC is not working should be finally covered by the communal land boards. Baseline value is 30% by the end of 2008 (GTZ 2010B).

Additionally, the Millennium Challenge Account (MCA) has a development fund created by the US Millennium Challenge Corporation, a government aid agency, and commissioned GTZ International Services to implement a programme in Namibia aimed at reforming the communal land administration. The programme calls for GTZ to support efforts over a four year period to systematically register land use rights in the communal areas of northern Namibia. The aim of the programme is to issue at least 15.000 land ownership or leasehold certificates by 2015 (GTZ 2010C).

2.2.2 Design of the Case Study

The research period for this thesis took place in Namibia from the middle of January 2010 to the middle of April 2010 and was subdivided into three phases (table 9).

Table 9: Research Phases

| | |
|---|---|
| 1. Preparation Phase: - 7 weeks in Windhoek - | <ul style="list-style-type: none"> • Overview and analysis of different research topics of global / national changes and land reform • Selection of research topic • Selection of study area • Intensive research of the selected topic by literature review & expert consultation • Selection of approach & methods • Concept design |
|---|---|

| | |
|--|--|
| | <ul style="list-style-type: none"> • Stakeholder analysis • Concept presentation • Concept evaluation & integration of advice |
| 2. Fieldwork / Assessment Phase: - 11 days in Northern Namibia - | <ul style="list-style-type: none"> • Expert consultation & coordination of the field study • Interviews with local people in two communities • Focus group discussion in one community • Field observations • 1st Evaluation of fieldwork • Feedback presentation |
| 3. Evaluation / Assessment Phase: - 3 weeks in Windhoek - | <ul style="list-style-type: none"> • Accomplishment of expert interviews • 2nd Evaluation of fieldwork • Presentation of preliminary results |

2.2.3 Research Questions

It is important to get an overview of the methods used to answer the research questions developed by the author, see table 10.

Table 10: Research Questions & Applied Methods

| Research Questions | Methods |
|--|---|
| Does the process of land registration in communal areas consider national and global change (e.g. climate variability, population growth, high HIV/AIDS ratio)? | <ul style="list-style-type: none"> • Literature Review • Group Consultations & Discussions |
| Does land registration in communal areas contribute to increasing the adaptive capacity and decreasing the vulnerability to national and global change (e.g. climate variability, population growth, high HIV/AIDS ratio)? | <ul style="list-style-type: none"> • Literature Review • Semi-Structured Interviews • Observations • Focus Group Discussion |
| Does land registration in communal areas contribute to investments in sustainable land use and thus to the enhancement of livelihoods and reduction of poverty for land users? | <ul style="list-style-type: none"> • Literature Review • Semi-Structured Interviews • Observations • Focus Group Discussion • Expert Interviews • Group Consultations & Discussions |

2.2.4 Selection of the Case Study Area

Several reasons led to the selection of the location of the case study in the northern part of the country. Whereas most reasons determine the viability of studies in general, other aspects were also decisive in terms of SLA:

- The communal land as one of three land use types is located in the northern part of the country as a result of political administrative distribution
- Existing experience of formerly implemented pilot projects in that area (the registration of communal land)
- Given feasibility of a case study because of political stability and accessibility
- The clear influence of seasonality (seasonal flooding) and shocks (floods & droughts) in that area, aspects which influence the vulnerability context immensely
- Special socio-economic characteristics (e.g. population growth and poverty)

Two communities in the Omusati Region were selected. In the Onashitendo community, located in the Tsandi Constituency, where a traditional land distribution system is still in place. In contrast, the Omagalanga community, located in the Oshikuku Constituency (see section 1.1.3), is organized by the new legal land registration measures. Both communities are characterized by seasonal flooding and extreme weather events.

2.2.5 Stakeholder Analysis

The approach of this research is the Sustainable Livelihood Approach. It is, on the one hand, a general framework offering guidelines and, on the one hand, an analytical tool applied for livelihood vulnerability assessment (see section 3.3). In order to assess the vulnerability of the communal land registration process it is necessary to analyze the stakeholders participating in this process. It is important to involve a wide range of different stakeholders with certain criteria in order to get a differential overview of people's situations and living conditions. The identification of stakeholder criteria is based on THE ULYSSES WEB TUTORIAL ON PARTICIPATORY INTEGRATED ASSESSMENT (1999). The following stakeholders were identified and grouped throughout certain criteria (table 11).

Table 11: Stakeholder Analysis

| Stakeholder Group | Stakeholder | Criteria |
|-------------------|--|---|
| Local People | <ul style="list-style-type: none"> • Headmen (traditional leaders of a community) • Land user (farmer & people with other occupations) | <ul style="list-style-type: none"> • Place of residence (in the respective community) • Gender (equal distribution) • Age (wide range of different age groups) |
| Experts | <ul style="list-style-type: none"> • Politicians of the Namibian government • Advisers of consulting corporations | <ul style="list-style-type: none"> • Involvement in the land registration process |

A vulnerability assessment was executed on the basis of different qualitative methods. Table 12 demonstrates the correlation between SL Framework components, identified stakeholder groups and applied methods.

Table 12: SL Framework Components, Stakeholder Groups & Applied Methods

| SL Framework Components | Stakeholder Group | Methods |
|--|-------------------|---|
| Vulnerability Context Livelihood Assets, Strategies & Outcomes | Local People | <ul style="list-style-type: none"> • Semi-Structured Interviews • Observations • Focus Group Discussion • Literature Review |
| Changing Structures & Processes | Experts | <ul style="list-style-type: none"> • Expert Interviews • Group Consultations & Discussions • Literature Review |

2.2.6 Applied Methods

This subchapter presents the amount of each applied method for this case study as well as a theoretical and practical description of each method.

Methods & Amount:

- Literature Review: see chapter “References”
- Semi-Structured Interviews: 20
- Observations: 20
- Focus Group Discussion: 1 with 15 participants
- Expert Interviews: 4
- Group Consultations & Discussions: 3 with 5-15 participants

Literature Review

The basis of the study is an intensive literature research of secondary data. Literature concerning land reform / land registration in Southern Africa, national and global change impacts in Namibia (with a focus on the Northern Central Region), such as climate change, population growth, HIV/AIDS ratio, unemployment rate, poverty, non sustainable land use and land use disputes was especially important for this analysis. Furthermore, literature about the Sustainable Livelihood Approach, vulnerability assessment and adaption measurements were included.

Semi-Structured Interviews

This technique belongs to the qualitative research methods. By setting up a situation (the interview) it allows the interviewee the necessary time and scope to talk about their opinion on a particular subject (SOCIOLOGY CENTRAL 2010). Semi-structured interviews are conducted with a fairly open framework which allows a focused, conversational, two-way communication. They can be used to give and receive information. This type of interview method starts with more general questions or topics. Relevant topics are initially identified before possible relationships between these topics and issues such as availability, expense, effectiveness etc. become the basis for more specific questions which do not need to be prepared in advance (FAO 1990). The objective is to understand the respondent's point of view rather than to make generalizations about behavior. Therefore, open-ended questions are used. Furthermore the researcher tries to build a rapport with the interviewee, and the interview is meant to be like a conversation. Questions are asked

when the interviewer feels it is appropriate to ask them. Their wording will not necessarily be the same for all respondents (SOCIOLOGY CENTRAL 2010).

- *Design & Objective*

The semi-structured interviews utilized for this thesis are divided into five sections (human, social, physical, natural and financial capital) with one additional section about the perception of climatic conditions, including impacts and adaptation measurements. The SLA was used as a framework and applied individually depending on the investigated subject. On this account, the topic “perception of climatic conditions on the local level” was included in the interview guideline. This way it was possible to acquire the relevant data for the analysis of the “Vulnerability Context” (trends, seasonality and shocks) in the two surveyed communities. Appendix A demonstrates the interview structure applied for this purpose. In addition, “Livelihood Assets”, “Livelihood Strategies” and “Livelihood Outcomes” could be identified. Livelihoods, as understood within this thesis, are centered on external living conditions in the sense of whether or not the legal land registration has been implemented. *Due to this it is not the author’s aim to establish a full picture of each individual complete personal livelihood but rather to identify key characteristics of the livelihoods of communities. The given opinions and perception of the interviewed people should reflect tendencies of the respective community.*

- *Framework Conditions of the Implementation*

In each of the two communities ten personal interviews were held with an average duration of one to two hours per person. The interviewees were randomly selected depending on their availability and within the framework of the previously established criteria. In most cases the interview took place in the residence of the interviewees; in a few cases interviews took place at the community school.

Observations

As an additional tool during the field studies in Northern Central Namibia, field observations were used. The aim of these field observations was to gain a close and intimate familiarity with a given group of individuals (such as a particular community, occupational or subcultural group etc.) and their practices through an intensive involvement with people in their natural environment, over a specific period of time (DOUGLAS 1976). In this way the author had the possibility of gathering information which was not mentioned during the semi-structured interviews. The focus of the observation was the collection of data regarding living and social conditions of the interviewed person

as well as the weather conditions during the rainy season. Based on an observation guideline it was possible to collect this additional information (see Appendix B).

Focus Group Discussion

A focus group discussion is a method of qualitative research in which a group of people is asked about their perceptions, opinion, beliefs and attitudes towards a product, idea, service, concept, advertisement etc. Questions are asked in an interactive group setting where participants are free to talk with other group members (BLOOR ET AL. 2001). It is important that the participants are randomly selected. The session is guided by a moderator and documented.

This method was chosen due to various benefits. Focus group discussion produces data and insights that would be less accessible without the interaction found in a group setting- listening to the verbalized experience of others stimulates memories, ideas, and experiences in participants. Group members discover a common language to describe similar experiences. This enables a form of “native language” to understand the situation. Focus group discussions also provide an opportunity for disclosure among similar others in a setting where participants are validated (LINDLOF & TAYLOR 2002).

- *Objective*

The intention behind applying a focus group discussion was to identify the perception about climate / climate variability as well as the knowledge and evaluation of the implemented land registration (see focus group discussion guideline in Appendix C). The focus group discussion was also used to compare the results of the individual semi-structured interviews and to receive a broader picture of subjects identified as those which play a key role in the analysis of the vulnerability context and of livelihood assets (e.g. communal land registration, extreme weather events, impacts and adaptation measurements).

- *Framework Conditions of the Implementation*

Through an announcement in the community school and with the help of the secretary of the community headman the participants were mobilized. All participants were, therefore, randomly selected. The focus group discussion was carried out in the community school of Omagalanga for a period of two hours and was guided by a moderator and assisted by a translator as well as a minute taker (picture 1). The outcomes were documented on photos and written notes. It was important to gather a representative amount of inhabitants of various ages, equal gender distribution and occupations.

- *Composition of the Participants*

The focus group consisted of eight females and seven males, in an age range from over 30 to under 90 years whereby almost the half of the participants were under 50 years old. The majority of the people (~86%) were subsistence farmers whereas the remaining participants were a teacher and a soldier who, besides pursuing their main occupations, were also subsistence farmers.



Picture 1: Focus Group Discussion at the Community School, (AUTHOR'S OWN PICTURE, OMAGALANGA: MARCH 2010)

Expert Interviews

Expert interviews are also an instrument of qualitative research. They offer expert knowledge which can be divided into three dimensions (MEUSER & NAGEL 2002):

1. Technical knowledge: The interviewee expert can offer specific knowledge about a certain subject with details, e.g. on laws, policies etc..
2. Process knowledge: The expert is able to give information on routines, specific interactions and processes due to their direct involvement with the subject.
3. Explanatory knowledge: The interviewed person can converse about subjective interpretations of relevance, rules and beliefs as well as ideas / ideologies and their inconsistencies.

According to MEUSER & NAGEL (2002) an expert is a person who is responsible for the development, implementation or control of solutions / strategies / policies and who has privileged access to information about groups of people or decision processes.

This interview method was applied in this study for the following advantages: experts have a deep insight into aggregated and/or specific knowledge as well as the meaning of processes, strategies etc.. It would often be difficult to explore this specific information with other methods. In general, experts work and live in an environment of vast networks and, therefore, may provide the interviewer with further contacts and resource persons. In addition to that, experts are frequently motivated people who are willing to cooperate and exchange (VAN AUDENHOVE 2007).

- *Objective*

In this thesis expert interviews were used as a tool to complement the other methods applied and to receive basic information about the legal and political context of the communal land registration process. However, the major focus of expert interviews was to identify “Changing Structures and Processes” (institutions, policies etc.). The interviewed experts are listed in the Appendix D.

Group Consultations & Discussions

Another method implemented for this study was the use of group consultations and discussions.

- *Objective*

This was done during three presentations with the goal of introducing and discussing the status quo of the research study with the respective attendant experts. It was also important to get an idea of the different perspectives regarding aims and improvements of the communal land registration as well as impacts of climate variability. Recommendations and advice given by the experts were afterwards integrated into the research (please see all participants listed in Appendix E).

- *Framework Conditions of the Implementation & Composition of the Participants*

The research concept was first presented by the end of February 2010 over a period of about one hour. It took place in the GTZ headquarters in Windhoek, Namibia with the participation of GTZ employees.

The preliminary results of the field study were then presented in the middle of March 2010 with the presentation lasting one and half hours. This happened in Oshakati in the regional GTZ office with the participation of different stakeholders such as employees of the GTZ, the Iishana-sub-Basin Management Committee (IBMC), the regional councilor of the Oshikuku Constituency and one interviewed subsistence farmer from the field study.

The third and last presentation took place in Windhoek in the Ministry of Agriculture, Water and Forestry (MAWF) at the beginning of April 2010 over a period of one and half hours. Representatives of following institutions participated: staff of the Ministry of Lands and Resettlement (MLR), the MAWF, the GTZ, the German Development Service (DED) and the Desert Research Foundation of Namibia (DRFN).

3 Results

This chapter presents the research findings in the framework of Sustainable Livelihood Approach of the implemented land registration process in Namibia. Initially, it gives an overview of the “Livelihood Assets” of the two communities, Onashitendo and Omagalanga, in the Omusati Region of Namibia. Firstly, similarities and then differences will be introduced. Furthermore, results of the institutional, policy and legislative framework of the investigated process will be presented. The assessment of the vulnerability demonstrates the vulnerability context of the two communities and analyzes at the end of chapter three the “Livelihood Strategies” and “Livelihood Outcomes” of the target groups.

3.1 Livelihood Assets

The capture of human, social, natural, physical and financial capital data should demonstrate the “Livelihood Assets” and, accordingly, the similarities and differences of both communities. It seeks to gain an accurate and realistic understanding of people’s strengths (assets or capital endowments) and how they endeavor to convert these into positive livelihood outcomes. Later, the “Livelihood Assets” data will be set in the context of the Sustainable Livelihood Framework in section 4.2.2. Furthermore, the data contribute to answer the research question: Does land registration in communal areas contribute to investments in sustainable land use and thus to the enhancement of livelihoods and the reduction of poverty for land users?

Note: The terms “majority” / “minority” are used to refer to interviewed local people whose responses are representative of their respective communities.

3.1.1 Similarities & Marginal Differences of Onashitendo & Omagalanga

The following table, 13 provides an overview of similarities and marginal differences of both visited communities. Marginal differences (such as work skills, government support, physical characterization, livestock, land productivity) are also mentioned in this table in order to paint a comprehensive picture regarding the livelihood assets of both communities but are only of minor relevance for the investigated topic.

Table 13: Livelihood Assets Similarities & Marginal Differences of Onashitendo & Omagalanga

| Livelihood Assets | Community Onashitendo Size Estimation ¹¹ 20-40 Households | Community Omagalanga Size Estimation 30-50 Households |
|-----------------------------|---|---|
| Interviewees | 10 | 10 |
| Focus Group | - | 15 |
| Human Capital | | |
| Age | <ul style="list-style-type: none"> • 20-39 years: 30% • 40-59 years: 10% • 60-79 years: 50% • 80-99 years: 10% | <ul style="list-style-type: none"> • 20-39 years: 32% • 40-59 years: 28% • 60-79 years: 36% • 80-99 years: 4% |
| Gender | Female: 60% Male: 40% | Female: 60% Male: 40% |
| Workers | <p><u>Majority</u>: merely family members of the respective household perform farming activities.</p> <p><u>Minority</u>: employs seasonal workers during the cultivation season usually for a period of a few to 10 days.</p> | |
| Occupation | <p><u>Majority</u>: subsistence farmer</p> <p><u>Minority</u>: teacher, construction worker, taxi driver or soldier</p> | |
| Years Working in this Field | <u>Majority</u> : their whole life | |
| Work Skills Source | <p><u>Majority</u>: apprenticeships with relatives</p> <p><u>Minority</u>: job trainings apply merely to people who have or had occupations other than subsistence farming.</p> | |
| Work Skills Appraisal | Half of the people feel a lack of knowledge and wish to improve their farming techniques and animal husbandry. The other half feel no lack of knowledge. | The majority feels a lack of knowledge and wishes to improve their farming techniques and animal husbandry. |
| Social Capital | | |
| Milieu | <p><u>Majority</u>: simple farmer milieu (low literacy level, low grade of economic wealth, no/low permanent income)</p> <p><u>Minority</u>: advanced farmer milieu (increased literacy level, grade of economic wealth & permanent income)</p> | |

¹¹ **Size Estimation:** No statistical census regarding the number of inhabitants for Onashitendo and Omagalanga exists. Hence the author made an estimation about the number of households per community based on observations.

| | | |
|---------------------------|---|---|
| Gender Equality | <p>Women & men have the opinion to make decisions equally¹². (This statement does not consider the aspect of whether or not women are commonly holders of the land use right)</p> | |
| Government Support | <p><u>Financially</u>: retired people receive a pension amounting to 450 Namibian Dollar (NAD) per month (~47 Euros). People who have worked for the state, such as teachers, receive an additional pension around 1.500 NAD (~158 Euros) per month. → Almost every household includes one or more retired persons. <u>Knowledge Transfer</u>: no one received any capacity building regarding any topic.</p> | <p><u>Financially</u>: retired people receive a pension amounting to 450 Namibian Dollar (NAD) per months (~47 Euros). People who have worked for the state like teacher or police officer receive an additional pension around 1.500 – 1.900 NAD (~158 - 200 Euros) per months. → Almost every household includes one or more retired persons. <u>Knowledge Transfer</u>: no one received any capacity building regarding any topic.</p> |
| Which Support is Needed | <p>Capacity building regarding improved & adapted farming techniques & animal husbandry, financial support to purchase farming equipment or convenience goods (e.g. food & cloths) is especially required.</p> | |
| Natural Capital | | |
| Physical Characterization | <p><u>Landscape</u>: Cuvelai Drainage¹³ characterized by floodplain grasslands <u>Climate</u>: <ul style="list-style-type: none"> • Average annual temperature: over 22°C • Average annual precipitation: 400-450 mm • Main rainy season: December - March <u>Vegetation</u>: Mopane¹⁴ shrubland in Cuvelai Oshana <u>Soils</u>: Cambic Arenosols & Ferralic Arenosols¹⁵</p> | <p><u>Landscape</u>: Cuvelai Drainage characterized by floodplain grasslands <u>Climate</u>: <ul style="list-style-type: none"> • Average annual temperature: over 22°C • Average annual precipitation: 450-500 mm • Main rainy season: December- March <u>Vegetation</u>: Mopane shrubland in Cuvelai Oshana <u>Soils</u>: Eutric Cambisols¹⁶ (URBAN DYNAMICS AFRICA & MLR</p> |

¹² **Amendment Statement:** Especially women confirmed that they have a voice regarding making decisions. This has significance for many issues, but in the context land tenure and livelihoods it is important for the implementation of new livelihood techniques and approaches and thus the alleviation of poverty. Usually women have the obligation to cover the basic needs of their families. Hence, women play a key role in coping strategies of poor households, in ensuring food security and shelter and in reducing risk. In general, they also tend to spend a higher share of their earnings on providing food and literacy to the family than men (GTZ 1999).

¹³ **Cuvelai Drainage:** Is an extraordinary river system which originates in southern Angola and covers almost the whole Northern Central Region of Namibia through hundreds of oshanas (meaning: flat pan of the Cuvelai Delta, temporarily filled with water in the rainy season) meandering into the Etosha Pan (URBAN DYNAMICS AFRICA & MLR UNPUBLISHED).

¹⁴ **Mopane Tree (*Colophospermum mopane*):** Are shrub or medium-sized to tall deciduous tree. The species occurs in almost pure stands in hot, low-lying areas, often on alluvial or lime-rich soils (VAN WYK & VAN WYK 1997).

RESULTS

| | | |
|---|--|---|
| | (URBAN DYNAMICS AFRICA & MLR UNPUBLISHED, MENDELSON ET AL. 2002). | UNPUBLISHED, MENDELSON ET AL. 2002). |
| Cultivation | <p><u>Seeds</u>: it is not common to purchase seeds. Usually the farmers select the seeds of the best plants and keep them for the next year. In some cases farmers exchange seeds with the seeds of other farmers (INTERVIEW MEIJS, INTEGRIERTE FACHKRAFT, CIM IN THE MINISTRY OF LANDS AND RESETTLEMENT, AUGUST 2010).</p> <p>The <u>majority</u> cultivates the following crops: pearl millet, millet, maize, pumpkins, water melon, beans and ground nuts (picture 2).</p> <p>No crop rotation is used within a field. The <u>majority</u> uses manure of their own livestock to fertilize their fields (INTERVIEW MEIJS, INTEGRIERTE FACHKRAFT, CIM IN THE MINISTRY OF LANDS AND RESETTLEMENT, AUGUST 2010).</p> | |
| Livestock | <p><u>Common</u> to rear goats, chicken, cattle and partly donkeys.</p> <p><u>Amount of Livestock</u>: comprises a wide range from only a few up to 150 animals.</p> | <p><u>Majority</u> rears goats, chicken and donkeys and <u>some of them</u> also rear cattle as well as hogs.</p> <p><u>Amount of livestock</u>: ranges between a few to more than 80 animals per species.</p> |
| Further Use of Natural Resources Examples | <p><u>Mopane Tree (<i>Colophospermum mopane</i>)</u>: used for ornamental furniture, fences and <u>firewood</u>. The tree is food source for the mopane worm, a caterpillar which is rich in proteins. Hence they are eaten by people and animals (VAN WYK & VAN WYK 1997).</p> <p><u>Marula Tree (<i>Sclerocarya birrea</i>)</u>: The seed kernels are high in protein and fat with a subtle nutty flavor. Fruits are commonly eaten fresh or used to prepare juice (NATIONAL RESEARCH COUNCIL 2008).</p> <p><u>Spider Flower (<i>Cleome gynandra</i>)</u>: is an annual herb which can grow up to a size of 60 cm. Leaves are picked and boiled and then dried as a loose layer → it's a kind of spinach which is an essential food source (KOLBERG 2001).</p> | |
| Land Productivity | <p>Perception of Interviewees</p> <p><u>Soil productivity</u>: between good & bad</p> <p><u>Soil structure</u>: predominantly good (common to cultivate polycultures)</p> <p><u>Erosion problems</u>: occur in combination with strong precipitation and were assessed mainly as medium</p> <p><u>Soil salinity</u>: marginal problems</p> | <p>Perception of Interviewees</p> <p><u>Soil productivity</u>: between middle & bad</p> <p><u>Soil structure</u>: predominantly good (common to cultivate polycultures)</p> <p><u>Erosion problems</u>: occur in combination with strong precipitation and were assessed between medium to high</p> <p><u>Soil salinity</u>: no problems</p> |

¹⁵ **Arenosols**: Are sandy soils without a diagnostic horizon, missing or less developed soil structure, very low water-holding capacities, few essential nutrients (such as phosphorus) and highly acidic. Moderately appropriate for agricultural use (HARTEMINK & HUTING 2008). **Cambic**: soils characterized by changes in color, structure and consistency. **Ferralic**: high contents of combined oxides of iron and aluminium (sesquioxides) (MENDELSON ET AL. 2002).

¹⁶ **Cambisols**: They develop in medium and fine-textured materials derived from a wide range of rocks, mostly in alluvial, colluvial and aeolian deposits. Fertility is usually moderate or high, in part because of their good water-holding capacity and internal drainage. Most of these soils make good agricultural land and are intensively used (IUSS WORKING GROUP WRB 2007). **Eutric**: fertile soils with high base saturation (MENDELSON ET AL. 2002).

RESULTS

| | | |
|----------------------------------|--|---|
| Yield Variation | Occur from year to year, dependent on insufficient application of fertilizer, varying weather conditions such as intensity and length of rainy and dry seasons. | |
| Physical Capital | | |
| Location | Houses are located in plain areas surrounded by cultivated fields and are <u>often close</u> to an oshana (temporary water body) (picture 3). | Houses are located in plain areas surrounded by cultivated fields and in <u>some cases close</u> to an oshana (temporary water body). |
| Living Environment | <p>One <u>household consists of</u>: several little houses (1-4) made out of timber (traditional form) or grout (modern form) + various bigger storage buckets and an open air kitchen with a fireplace (timber of the Mopane tree is used as firewood among others) (picture 3).</p> <p>House size and amount of houses versus number of people per household is in most cases appropriate.</p> | |
| Security of Land Use Rights | <p><u>Majority</u>: feels secure about their land use rights</p> <p><u>Minority</u>: feels insecure about their land use rights and had to defend their land against utilization by other people</p> | |
| Financial Capital | | |
| Income | <p><u>Majority (subsistence farmer)</u>: has no permanent income</p> <p><u>Minority (employees: teacher, police officer or construction worker)</u>: has a permanent income</p> | |
| Access to Finance Institution | <p><u>Majority (in most cases subsistence farmer)</u>: has no access to a bank account, micro credit or loan</p> <p>→ Justification: finance institutions need an income guarantee which subsistence farmer are not able to give.</p> <p><u>Minority (in most cases employees)</u>: has access to a bank account and / or taken a loan.</p> <p>→ Reasons for taking a loan: investments in infrastructure (e.g. building a house, purchase a car) or apprenticeship for themselves or their children</p> | |
| Ability to Save Money | <p><u>Majority (in most cases subsistence farmer)</u>: are not able to save money due to no permanent income</p> <p><u>Minority (in most cases employees)</u>: are able to save money</p> | |
| Major Operational Costs per Year | food (which is not cultivated), clothes, school and / or university fees, water / electricity access, medical attendance, transportation costs and tractor renting fees | |
| Further Income | <p><u>Majority</u>: receives financial support from other family members.</p> <p><u>Minority</u>: generates income through the selling / providing of:</p> <ul style="list-style-type: none"> - food and beverages, for example, in front of the community school - self-made handcrafts in the market of the next small town - taxi service <p><u>Amount of further income per months</u>: ranges from 50 - 1.400 NAD (~ 5-145 €)</p> | |



Picture 2: Top Left: Pearl Millet, Top Right: Ground Nuts, Bottom Left: Beans (AUTHOR'S OWN PICTURES, ONASHITENDO: MARCH 2010)



Picture 3: Top Left: Typical Environment with an Oshana in the Background, Top Right: Traditional & Modern House Architecture, Bottom Left: Outdoor Cooking Place, Bottom Right: Storage Bucket (e.g. for Pearl Millet) (AUTHOR'S OWN PICTURES, ONASHITENDO: MARCH 2010)

3.1.2 Differences of Onashitendo & Omagalanga

The next table, 14 gives an overview of the significant differences between the two communities in the context of the investigated land registration process and under basic living conditions such as literacy, health or social involvement.

Table 14: Relevant Livelihood Assets Differences of Onashitendo & Omagalanga

| Livelihood Assets | Community Onashitendo | Community Omagalanga |
|---|---|---|
| Human Capital | | |
| Household Size Average in the Omusati Region: 5.9 People (NPC 2007) | <ul style="list-style-type: none"> 0-6 people per household: 60% 7-12 people per household: 40% 13-18 people per household: - | <ul style="list-style-type: none"> 0-6 people per household: - 7-12 people per household: 60% 13-18 people per household: 40% |
| Literacy School Attendance | <ul style="list-style-type: none"> Primary school (0-7 years): 50% Secondary school (8-12 y): 50% | <ul style="list-style-type: none"> Primary school (0-7 years): 70% Secondary school (8-12 y): 30% |
| Health | More than the half of the households have people infected with HIV/AIDS or disability. | The majority of the households have people infected with HIV/AIDS, disability or tuberculosis. |
| Social Capital | | |
| Socializing | The majority has a frequent exchange with their neighbors about farming techniques, daily challenges or general well being. | The minority has a frequent exchange with their neighbors about farming techniques, daily challenges or general well being. |
| Member of Group / Network | <p>Around half of the people are members of a social group (e.g. religious community, drought relief committee or AIDS enlightenment group).</p> <p>→ No benefits regarding exchange about farming techniques / adaptation measurements.</p> | <p>The minority is member of a social group (e.g. community health committee or AIDS enlightenment group).</p> <p>→ No benefits regarding exchange about farming techniques / adaptation measurements.</p> |
| Physical Capital | | |
| Land Use Right | Verbal agreement with the traditional authority or rather headman regarding traditional land use rights | <p><u>Majority</u>: Customary Land Right (picture 4)</p> <p><u>Minority</u>: Right of Leasehold</p> |
| Land Size | unknown | 3-20 ha |
| Background of the Land Registration Process | --- | <p><u>Majority</u>: Lack of knowledge</p> <p><u>Minority</u>: Marginal idea</p> |

RESULTS

| | | |
|---|--|--|
| Land Use Disputes in the Community | <u>In the past</u> : marginal <u>Nowadays</u> : marginal | <u>In the past</u> : marginal <u>Nowadays after the implementation of the customary land right / right of leasehold in 2008 / 2009</u> : less disputes then before |
| Investment in (Sustainable) Land Use | <u>Majority</u> : no investment <u>Minority</u> : marginal investments increased cultivation of crops | No investment |
| Personal Infrastructure | <u>Own water access</u> : 50% <u>Electricity access</u> : none <u>Gas access</u> : none <u>Own transportation possibility</u> : minority <u>Working equipment</u> : Majority: hoes & ploughs Minority: tractor renting for cultivation, use of organic fertilizer | <u>Own water access</u> : 60% (picture 4) <u>Electricity access</u> : 60% <u>Gas access</u> : none <u>Own transportation possibility</u> : 50% <u>Working equipment</u> : Majority: hoes & ploughs Minority: tractor renting for cultivation, use of organic fertilizer |
| Financial Capital | | |
| Alternative Access to Money / Finance Institution | <u>Minority</u> : money lending | <u>Minority</u> : Building of a loan group ¹⁷ → provides access to bank account |



Picture 4: Left: Subsistence Farmer Florian Shavuka Fransiskus, Holder of a Customary Land Right Certificate, Right: A Private Water Access (AUTHOR'S OWN PICTURES, OMAGALANGA: MARCH 2010)

¹⁷ **Loan Group:** For this cluster every group member (15 members) had to deposit 60 NAD (~ 6 Euros) after which it was possible to open up a bank account.

In the following section relevant differences in the physical and financial capital of the livelihood assets between both communities will be precisely explained.

Physical Capital

- *Land Use Rights, Land Size, Land Use Disputes & Investments*

In **Onashitendo** the *traditional land use right*, a verbal agreement between the land user and the traditional authority or rather headman, is still in place. The land is not measured; therefore, the inhabitants of this community are not aware of *their land size*. With the start of the verbal agreement the land user has to pay a one-time user fee of 600 NAD (~ 60 Euro) and an additional, a yearly user fee of 10 NAD (~ 1 Euro) to the headman.

It appears that the people do not have problems with *land use disputes*. This result is also underlined by people's perception that their traditional land use right is secure. However, this land use right security does not lead to *investments in sustainable land use*. If people invest in the development of their resources they do so because they have to react to external conditions like extreme weather events and/or market price variability in terms of food security.

Omagalanga belongs to one of the pilot regions of the Communal Land Reform Act (CLRA). In 2008 the complete land area of the community was surveyed via aerial photos. Inhabitants who filled in the application form could receive their certificate in 2008 and 2009 which was in most cases a *Customary Land Right* certificate. The people who collected their certificates are aware of their *land size*. It can range between a few hectares to almost twenty hectares. Some people did not collect their certificates due to transport and financial limitations. The applicant of a land use right has to collect their certificate at the office of the traditional authority and pay a handing-over fee of 50 NAD (~ 5 Euro). The distance to collect the certificate can be quite far, and the applicants are not sufficiently informed as to when the certificate can be collected (INTERVIEW MEIJS, INTEGRIERTE FACHKRAFT, CIM IN THE MINISTRY OF LANDS AND RESETTLEMENT, MARCH 2010). Usually the applicant is informed by the headman, but this is not always the case. As a result of the aforementioned aspects, not all applicants collect their certificates.

Although the land was surveyed and the people were aware of the land registration process, most people have a lack of knowledge regarding the *background* of this procedure. For example, some people are afraid that big land parcels will be divided and that they will be forced to share it with other land users, or they absolutely do not know that the obtainment of the certificate benefits them. The reason why several people have

only a slight idea of the land registration process is due to the insufficiency of the preparatory information campaign.

Raising the public's awareness regarding the land registration procedure works as follows: Initially, all headmen of a constituency are invited to an information meeting which is usually held by employees of the Ministry of Lands and Resettlement and development cooperations (e.g. GTZ and/or DED) in the district capital of the constituency. In the considered case it was held in Oshikuku village. During this meeting all relevant aspects of the land registration process are introduced in English via PowerPoint presentation. The aim is to enable the attending headmen to distribute the communicated information in their communities. Furthermore, the radio broadcasts make announcements about the measurement procedure of the land in the respective communities (INTERVIEW KASITA, DEPUTY DIRECTOR OF LAND BOARDS, TENURE AND ADVICE, MINISTRY OF LANDS AND RESETTLEMENT, MARCH 2010). In the case of Omagalanga the headman did not attend the information meeting in Oshikuku village. Therefore, further distribution of the relevant information to the community did not take place. Another hindrance to the information flow is the low literacy level and little or no comprehension of the English language of many headmen.

According to RITA SIMEON (subsistence farmer, picture 5) many participants were absent from an upcoming information meeting held by the senior headman of the Uukwangula District in the community for the inhabitants of Omagalanga as a result of the meeting not having been announced. RITA SIMEON further said that other inhabitants who attended the meeting were probably not listening carefully or had difficulties understanding the introduced procedure. That explains why most people have a lack of knowledge regarding the background and benefits of the implemented registration of land in Omagalanga.



Picture 5: Rita Simeon (AUTHOR'S OWN PICTURE, OMAGALANGA: MARCH 2010)

The inhabitants express that there were not many *land use disputes* in the past, but they are also of the opinion that after the implementation of the CLRA land use disputes decreased. This correlates with the statement that several people had to defend their land against the exposure by other people. The security of land use rights in Omagalanga does not lead to *investments in sustainable land use*.

- *Personal Infrastructure*

The households in **Onashitendo** have *partly their own water access*. None of the households have *electricity or gas access*. Most people have no own *transportation possibility* in the form of a car or a donkey cart. Due to the location of the community (around eight kilometers away from a tarred road) only gravel roads exist in this area. Hence in the case of traveling to work, no transportation is needed since most people only do subsistence farming in the surroundings of their houses and do not have to overcome great distances between living and working place.

As *working equipment* hoes and partly ploughs are used as well as tractors. It is necessary to rent the tractor in the cultivation season for some hours since the majority of the inhabitants are financially not able to own a tractor. In some households it is customary to use fertilizer to increase the soil fertility and thus the crop yields.

In **Omagalanga** many people have an *own water access*. The people who do not have one have to walk regularly (several times a day is normal) five to fifteen minutes to a public water tap. Due to the proximity to Oshikuku village and thus to the administrative centre of the constituency Oshikuku and the direct access to a tarred road, several households have *electricity*. Omagalanga has, therefore, a better infrastructural accessibility than Onashitendo. But *access to gas* is also not common in Omagalanga. In the community more inhabitants have *own means of transportation* like cars or donkey carts. Most people practice subsistence farming around their houses; therefore, no transportation is needed to reach the place of work. In most cases it is common to use traditional *working tools* such as hoes and ploughs. In the cultivation season some people are able to rent a tractor for a few hours.

Financial Capital

- *Alternative Access to Money / Finance Institution*

In **Onashitendo** some people borrow money from private persons in the community. In this way they circumvent the restriction of finance institutions to demonstrate a permanent income guarantee.

In **Omagalanga** another alternative to circumvent this restriction exists. It consists in the clustering of a loan group, and one such loan group was formed by fifteen inhabitants. For this cluster every group member had to deposit 60 NAD (~ 6 Euros). It was possible to open up a bank account. The aim of this private association is to save money on a regular basis.

3.1.3 Summary

In summary, it can be said that both communities have a similar low standard of living and therefore a minor access to their livelihood assets. The asset pentagon of Onashitendo and Omagalanga shows the following characterizing **similarities and marginal differences** (see figure 4):

- Human Capital: age, gender, workers, occupation, work skills and years working in this field
- Social Capital: milieu, gender equality, government support and support which is needed
- Natural Capital: physical setting, cultivation techniques, livestock rearing, further use of natural resources and the perception of yield variations
Land productivity is in the perception of the interviewees slightly better in Onashitendo than in Omagalanga → in general both communities have equal access to natural capital.
- Physical Capital: location description, living environment and security of land use rights
- Financial Capital: income, access to finance institutions, ability to save money, major operational costs per year and further income

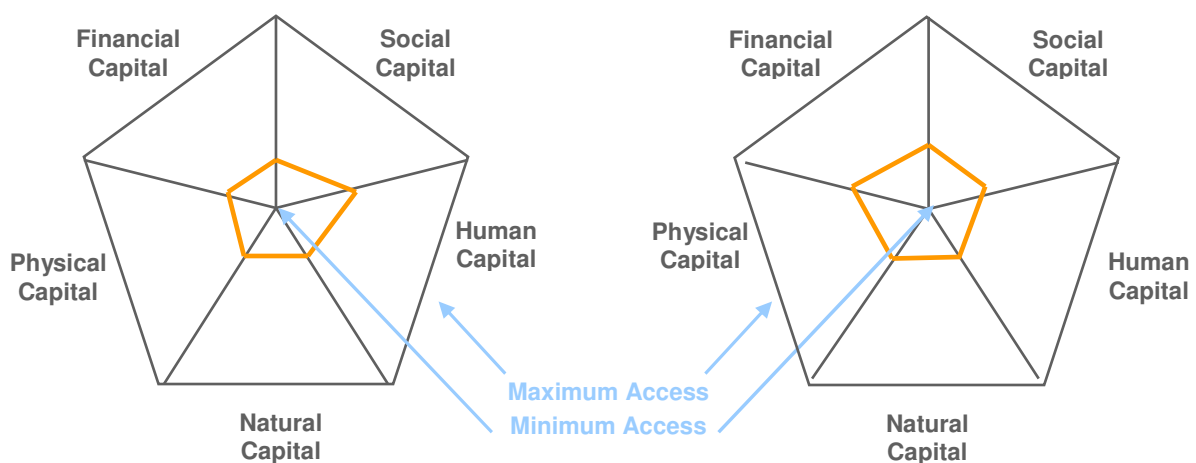


Figure 4: Livelihood Assets of Onashitendo (left) and Omagalanga (right), shown as orange line

As shown in figure 4 there are also **bigger differences** between the two livelihood assets of Onashitendo and Omagalanga, which are listed in the following:

- *Onashitendo has a better access to:*
 - Human Capital (household size is smaller, school attendance was longer and health conditions were better): these aspects are better in Onashitendo.
 - Social Capital (regarding socializing and member of a group / network): a frequent social exchange exists in Onashitendo.

- *Omagalanga has a better access to:*
 - Physical Capital (regarding land use rights, land size, background of the land registration process and land use disputes within the community): the access is better in Omagalanga due to the implementation of the customary land right and right of leasehold. Regarding personal infrastructure, Omagalanga has a better developed infrastructure due to the proximity to the capital of the Oshikuku Constituency. Investment in sustainable land use is only taking place in Onashitendo where the traditional land use rights still exist. In summary, it can be said that the people of Onashitendo have a lower access to physical capital than the people in Omagalanga.
 - Financial Capital (regarding alternative access to money / finance institutions): is due to an establishment of a loan group better in Omagalanga.

3.2 Changing Structures & Processes

This chapter provides information about the legal structure and processes of the communal land reform from its genesis up to the present time. Therefore, an overview about the legislation and the executive bodies of the Communal Land Reform Act will be provided.

The legal basis of the land registration process is the Communal Land Reform Act from 2002 / 2003. Table 15 gives an overview of the CLRA the objectives, administrative institutions and the two land use rights which belong under the Communal Land Reform Act (left row). The relevant aspects of the final draft (not legally binding) of the new Land Bill from 2010, which is currently under review, are also shown below (right row).

Table 15: Relevant Aspects of the Communal Land Reform Act, 2002 / 2003 & Purposed Amendments of the New Land Bill, 2010

| Communal Land Reform Act (2002/2003) | Final Draft of New Land Bill ¹⁸ (2010) |
|---|--|
| Objectives <ul style="list-style-type: none"> • Equal rights in terms of access & gender to communal land • Regulated allocation of land use rights (secure tenure) to reduce land disputes • Promotion of an economic & social development • Sustainable use of natural resources | Amplified Objectives <ul style="list-style-type: none"> • Extent of communal land • Establishment of new communal land areas & additions to or subtractions from communal land areas • Vesting of communal land • Prohibition against fencing |

¹⁸ **Bill:** Is called the draft legislation (not legally binding), is tabled in Parliament, where the National Assembly and the National Council debate it. Once both Houses of Parliament accept it, the Bill has been passed by Parliament. After the Bill has been passed, it is sent to the president for signing. Once it is signed, the Bill becomes an Act of Parliament and legally enforceable upon signature by the President. Usually the Act of Parliament becomes operational on a date to be announced in the Government Gazette (LAC & NNFU 2009).

| | |
|--|---|
| <p>Administrative Institution</p> <p>Communal Land Boards (CLBs)</p> <ul style="list-style-type: none"> • <u>Functions</u>: <ul style="list-style-type: none"> - Controlling the allocation and cancellation of customary land right by chiefs and / or traditional authorities - Allocation of leasehold rights - Development and maintenance of a communal land register in every region - Monitoring construction and maintenance of fences - Backup that no unresolved dispute exist before the land use right registration is issued • <u>Board Composition</u>: Representatives of each TA within the Board's region, the organized farming community, regional council, conservancies, Ministry of Lands and Resettlement, Ministry of Environment and Tourism, ministry of Agriculture, Water and Forestry, Ministry of Regional and Local Government, Housing and Rural Development as well as four women (two with farming and two administration experience). | <p>New Administrative Institutions</p> <p>Regional Land Boards (RLBs)</p> <ul style="list-style-type: none"> • <u>Functions</u> of the RLBs regarding communal land will be basically the same. <p><i>Justification</i>: The RLBs were created to eliminate overlaps in functions and to create a uniform board for both communal and commercial land. The Communal Land Boards did not benefit from the Land Acquisition and Development Fund; had limited resources and technical expertise to facilitate effective execution of their mandate.</p> • Amendments of <u>Board Composition</u> (additional members): Deputy Director responsible for urban and regional planning matters in the Ministry; four women (two with farming expertise, one for gender affairs and one woman with expertise in the functions of Land Boards; representatives for the National Youth Council, the Federation of People with Disability, one person who is not a civil servant, nominated by the Community Based Natural Resources Management and one person who is not a public servant to be nominated by NGOs. <p>Land Reform Advisory Commission</p> <ul style="list-style-type: none"> • <u>Function</u>: are inter alia to receive and review recommendations of short listed applicants for allotment or units from Regional Land Boards and submit final short listed recommendations to the Minister. <p>Land Acquisition and Development Fund</p> <ul style="list-style-type: none"> • <u>Functions</u>: are inter alia for the payment of: <ul style="list-style-type: none"> - Compensation in connection with any termination or cancellation of a lease in terms of this Act; - Compensation for improvements on both communal and commercial land - Agricultural infrastructure in both commercial and communal lands <p>The Lands Tribunal</p> <ul style="list-style-type: none"> • <u>Function</u>: All land disputes irrespective of their origin (i.e. from communal or commercial land) are to be heard by the Lands Tribunal. |
| <p>Customary Land Right (CLR)</p> <ul style="list-style-type: none"> • Purposes: use as farming and/or residential unit for self-subsistence • Size: maximum of 20 ha • Period: lifetime, after the death of the certificate holder wife/husband has the first right to take the certificate over | <p>Relevant Amendments</p> <ul style="list-style-type: none"> • <u>Transfer and Conversion</u>: <p>A CLR may be converted into a right of leasehold by the board with the approval of the Minister.</p> <p><i>Justification</i>: to promote / encourage CLR holders to upgrade from customary tenure to</p> |

| | |
|---|---|
| <ul style="list-style-type: none"> • Piece of land is not reliable for finance institution to receive a loan • <u>Application Procedure:</u> <ul style="list-style-type: none"> - A letter of consent from the Chief of the TA concerned - A copy of the applicant's identification document - Any available document that can prove the validity of the claim (necessary for existing land rights, allocated before the enactment of the CLRA 2003) - The application plus a fee of 25 NAD (~ 2.45 Euro) must be handed over to the chief/headman of the respective community - Latter on the applicant have to pay an handing over fee of 50 NAD (~ 4.90 Euro) | <p>leasehold tenure for securities at banking institutions and for development purposes.</p> <ul style="list-style-type: none"> • <u>Duration:</u> <p>CLRs may now upon the death of the holder be allocated to all dependent children, including adopted children, of such holder including children born outside marriage who may be regarded as dependents of the surviving spouse in terms of inheritance of the right.</p> <p><i>Justification:</i> To avoid discrimination against children born outside marriage or adopted children.</p> |
| <p>Right of Leasehold</p> <ul style="list-style-type: none"> • Purposes: specific commercial activity • Size: maximum of 50 ha • Period: 99 years, which can be renewed • Piece of land is reliable for finance institution to receive a loan • <u>Application Procedure:</u> <ul style="list-style-type: none"> - A letter of consent from the TA - Any information on the present and intended land use - A business plan for the planned activities - Consent of the conservancy, communal forest or other community-based organization, where applicable - An Environmental Clearance letter from the Ministry of Environment and Tourism - An Environment Impact Assessment, if available - A copy of the applicant's identification document - The application must be handed over to the Secretary of the Communal Land Board in the respective region. - The application fee of 25 NAD (~ 2.45 Euro) has to be paid into the Communal Land Reform. - Later on the applicant have to pay a handing over fee of 50 NAD (~ 4.90 Euro) plus an annual leasehold fee which depends on the size and type of the business. | <p>Relevant Amendments</p> <ul style="list-style-type: none"> • <u>Application Procedure:</u> <ul style="list-style-type: none"> a. Where a business applies for a right of leasehold, the business may apply to the board for exemption from paying rental fees until such time that the board determines that the business is making reasonable profit. <i>Justification:</i> to prevent overburdening small scale businesses. b. Environmental impact assessments may now be requested by the boards upon receiving an application for right of leasehold. <i>Justification:</i> to comply with environmental concerns. <hr/> <p>Occupational Land Rights for Public Services</p> <p>Note: Communal Land Reform Amendment Act from 2006</p> <ul style="list-style-type: none"> • <u>Function:</u> These rights may be allocated for government and community projects, projects by parastatals or government owned companies or statutory bodies, health facilities, educational facilities, churches, and non-profit making organizations. <i>Justification:</i> the original communal land rights did not cater for these rights. These new rights are necessary for development within the communal areas. |

Source: BASED ON MEIJS & KAPITANGO 2009, LAC & NNFU 2009, FINAL DRAFT SK AMOO GOVERNMENT GAZETTE OF THE REPUBLIC OF NAMIBIA 2010

The next table 16 gives an overview of the development after the enacting of the CLRA up to the current situation.

Table 16: Development of the Communal Land Reform Act

| Period | Activities |
|---------------------|---|
| 2002 - 2003: | <ul style="list-style-type: none"> Enactment of the Communal Land Reform Act |
| 2003 till nowadays: | <ul style="list-style-type: none"> Implementation of Communal Land Boards Training of staff |
| 2008 - 2009: | <ul style="list-style-type: none"> Implementation of different pilot areas: Oshikuku Constituency (Omusati Region), Olukonda Constituency (Oshikoto Region) & Sibbinda Constituency (Caprivi Region) |
| End of 2009: | <ul style="list-style-type: none"> Evaluation of pilot phase by the Ministry of Lands and Resettlement Around 10% of 236.000 communal parcels is registered |
| 2010: | <ul style="list-style-type: none"> Final draft of new Land Bill was developed and discussed in four regional and one national stakeholders' consultative workshops Final draft is under review → an alignment with other laws needs to be done before it can be enacted |
| 2011: | <ul style="list-style-type: none"> Enactment of new Land Bill is planned |
| 2010 - 2012/13: | <ul style="list-style-type: none"> Implementation of communal land registration in the entire communal area is planned |

Source: BASED ON INTERVIEWS WITH KASITA, DEPUTY DIRECTOR OF LAND BOARDS, TENURE AND ADVICE, MINISTRY OF LANDS AND RESETTLEMENT, MARCH 2010 & MEIJS, INTEGRIERTE FACHKRAFT, CIM IN THE MINISTRY OF LANDS AND RESETTLEMENT, AUGUST 2010

Tables 15 and 16 show a discrepancy between theoretical legislation and practical implementation of the CLRA. The implementation has begun, but only around 10% of 236.000 communal parcels was already registered in a period of seven years between 2003 and 2009 and will still last several years.

3.3 Vulnerability Context

In the following chapter trends (e.g. socio-economic trends) (see 3.3.1), seasonality (e.g. natural events) (see 3.3.2) and shocks (e.g. human health shocks) (see 3.3.3), which all have an impact on the vulnerability of the Northern Central Region, will be discussed. Accordingly, the negative effects of trends, seasonality and shocks (occurrences over which the inhabitants of this area have little or no control) upon the livelihoods of the land users will be presented. Under point 3.3.4 the whole vulnerability assessment will be summarized.

3.3.1 Trends

Trends may (or may not) be more benign, though they are more predictable. For the livelihoods of land users in the Northern Central Region national / international economic trends, demographic trends and land use trends are of relevance. They have a particularly important influence on the selection of livelihood strategy.

National / International Economic Trends

Namibia's economy is, among other aspects, currently characterized by poor market prices of livestock products, rising oil prices and rising food prices. Namibia relies therefore on *food imports* from other countries, and as a result, the standard of living increased through imported foods (KACHALE 2009). Furthermore, the economy is closely linked to that of South Africa. The country's trade policies, exchange rate and monetary policies are set within the Southern African Customs Union framework. The majority of the country's imports (> 80% in 2008) are from South Africa, and a large portion of its exports are either destined for the South African market (~ 25% in 2008) or transit that country. Food imports amount to 13.9% of merchandise imports and are mostly from South Africa 2007) (WORLD BANK 2009, IFAD 2008).

Although agriculture's share of Namibia's GDP is low (~ 6%), about *70% of the population depends on agriculture* for most or part of their livelihood, and *about half of the population (around 1 million people) depends on subsistence agriculture* (AEO 2008, IFAD 2008). About 47% of the total land area is suitable for agriculture, whereof the main part of the agricultural land is only appropriate to rear livestock due to the arid and semi-arid climatic conditions in Namibia. Therefore, livestock as well as crop production fluctuate widely according to rainfall patterns (IFAD 2008). The area for crop cultivation is situated in the North, particularly in the Northern Central Region, Kavango and Caprivi Region. These regions, which are communal land, have the highest mean precipitation rates of Namibia ranging from about 400 mm to more than 600 mm per year (see section 1.1.1) (MENDELSON ET AL. 2002). As mentioned before, communal land is mainly used for small-scale subsistence farming with fields below 20 ha. Based on Namibia's legal requirements of the Communal Land Reform Act, in particular the Customary Land Right, the majority of people in the Northern Central Region have therefore, only *access to small areas of land*. Northern communal land is, amongst other socio-economic and physical criteria (see section 1.1.2 on the example of the Omusati Region), characterized by *insufficient basic infrastructure* (e.g. inadequate access to water, sanitation facility, electricity access and / or agricultural working tools), *insufficient job opportunities* and a *high unemployment rate* of 48.8% in Oshana Region and 78.6% in Omusati Region (IFAD 2008, JO-MARÉ DUDDY

2010). Figure 5 shows the development of the unemployment rate in Namibia and in the Omusati Region. Besides the strong increase in unemployment on the national as well on the regional level over time, the unemployment rate is significantly higher in rural areas like Omusati Region (see figure 5). The increase of unemployment has to be seen in the context of an employment growth of less than 1% per year during 1991-2004 contrasted

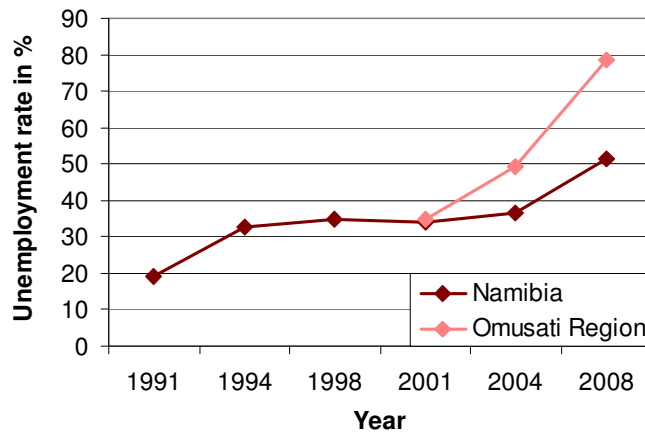


Figure 5: Development of the Unemployment Rate in Namibia (1991-2008) & Omusati Region (2001-2008) (BASED ON AGUILA ET AL. 2004, IMF 2006, JAUCH 2001, JO-MARÉ DUDDY 2010 & NPC 2004)

with annual labor force growth of about 3% (IMF 2006). In addition, it is also noteworthy that for about 45-50% of the households in the Omusati Region the *main “source of income” are subsistence farming activities* which implies that these people are officially unemployed, but in reality they are at least able to provide food for themselves (IFAD 2008, NPC 2007).

The rural economy of the communal areas is constrained by a low demand for domestic products, high transport

costs and the competition with South African products (IFAD 2008). In these areas, however, a domestic production of fruit and vegetables exists which accounts for about 25% of domestic demand and has the potential for further growth (AEO 2010). Nevertheless, the potential is less exploited and more investments in agriculture continue to delay expansion of sector enterprises. Employment creation could also result from such investments, but currently, it remains an issue that needs to be revitalized (NEPRU 2010).

To get a better picture of the socio-economic trends in the region it is important to also consider the educational level of the population (see excursus “Literacy & Education”).

Excursus: Literacy & Education

*The region is characterized by a **low educational attainment**. Most people of the Omusati Region (96%) merely attended primary school compared to 46% who attended secondary school. However only 7.3% have completed primary school; the rest attended some years in the primary level. The illiteracy rate in the region was around 17.5% in 2001 and has declined to about 14% in 2007 (MOHSS & MACRO INTERNATIONAL INC. 2008, NPC 2007).*

Demographic Trends

Namibia's *population has doubled* in the last ~ 24 years, from around 1 million in 1981 to about 2 million in 2005, as shown in figure 6 (NPC 2004). But *recently the growth rate has declined* from 3.0% (1980-1990) to 2.6% (1990-2000) and to 1.6% in 2008 (IFAD 2008, NPC 2004). The fast spreading of the HIV/AIDS pandemic in the last 20 years has been a significant contributing factor to this decline.

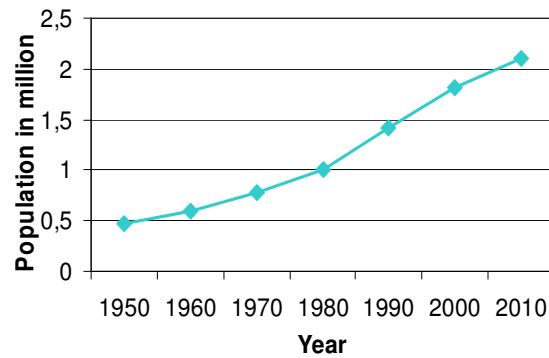


Figure 6: Namibia's Population Development from 1950-2010 (BASED ON PDDESA OF THE UN SECRETARIAT, REVISION 2008)

The overall population size will nevertheless not be reduced by the pandemic. Even in the worst case scenario Namibia will have a projected population size of *around 2.8 million people by 2030*. Three different population projections are shown in figure 7, whereby the worst case scenario, marked as low projection (in light blue), is supposed to be the most probable when considering the former development. The high projection (in dark blue) is estimated based on the 1991 census, indicating that Namibia's population would continue to increase with an annual population growth rate of slightly over 3% and without the limitation of population size caused by the high HIV prevalence rate (NPC 2004, PDDESA OF THE UN SECRETARIAT, REVISION 2008).

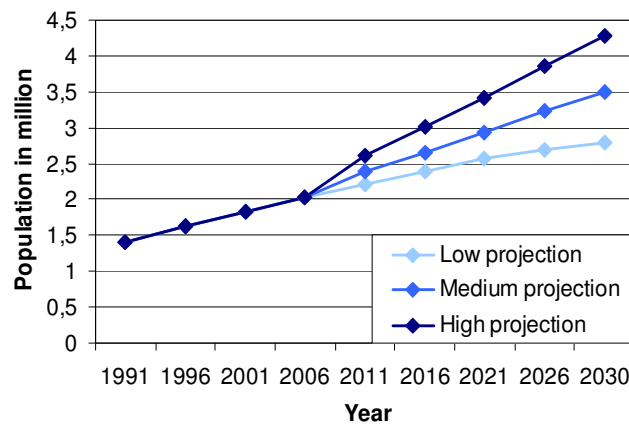


Figure 7: Namibia's Population Projections until 2030 (BASED ON NPC 2004, PDDESA OF THE UN SECRETARIAT, REVISION 2008)

Considering the birth rate it can be seen that the total birth rate is 3.4 per woman (2008), whereas a difference consists between women in rural areas and urban areas (4.2 births and 2.6 births per woman, respectively) (MOHSS & MACRO INTERNATIONAL INC. 2008, WHO 2009A). Namibia's population (2.1 million) and the population density of 2.5 people per km² is low in comparison to neighboring countries like e.g. Angola (~ 18 million inhabitants and a population density of ~ 14 people km²) or South Africa (~ 50 million inhabitants and a population density of ~ 41 people per km²) (PDDESA OF THE UN SECRETARIAT, REVISION 2008). But in consideration of Namibia's population distribution it can be said that in the North and in particular in the area of the Cuvelai Drainage, the population density is much higher than in the rest of the country (see chapter 1.1.2, map 5 Namibia's Population Density). In the *Cuvelai Drainage area, population densities rise to about 100 people per km². Approximately 28% of Namibia's population (~ 700.000 people) lives on an area which accounts for about 1% of the total area* (NPC 2002). Additionally, the demographic structure and distribution are influenced by migration (see excursus "Migration").

Excursus: Migration

*Supported by the **interregional and intraregional migration** the demographic structure of the Northern Central Region displays a special characterization. The number of women exceeds the number of men particularly in the employable age between 20 to 60 years. There are three different types of migration in that area:*

- *The region was and is a destination for migrants from Angola, which is, amongst other aspects, due to the cultural and historical togetherness of the Ovamboland northwards and southwards of the border between Namibia and Angola.*
- *Mainly young men in the employable age migrate to Namibia's political and economic centres such Windhoek (capital), Walvis Bay and Swakopmund (coastal towns). In return many migrants return to the Northern Central Region after they have retired, which results in an increasing number of the over 60 age group.*
- *The migration from rural areas to urban centres such as Oshakati, Ondangwa and Ongwediva within the Northern Central Region (ISOE 2006).*

The average annual *population growth of 2.8% is one of the most important threats to the Cuvelai Wetland* (ISOE 2006). The expanding population is putting increasing pressure on the wetland resources. Rapid *urbanization* around the towns and along roads is also having a negative effect on the area (KOLBERG ET AL. 1996). The majority of the population in the Cuvelai area lives strewn in single homesteads which has led to urban sprawl across the land and a shortage of natural resources, such as agricultural land, pastures,

water and wood. The overuse of land has already led to severe land degradation, deforestation and bush encroachment (ISOE 2006).

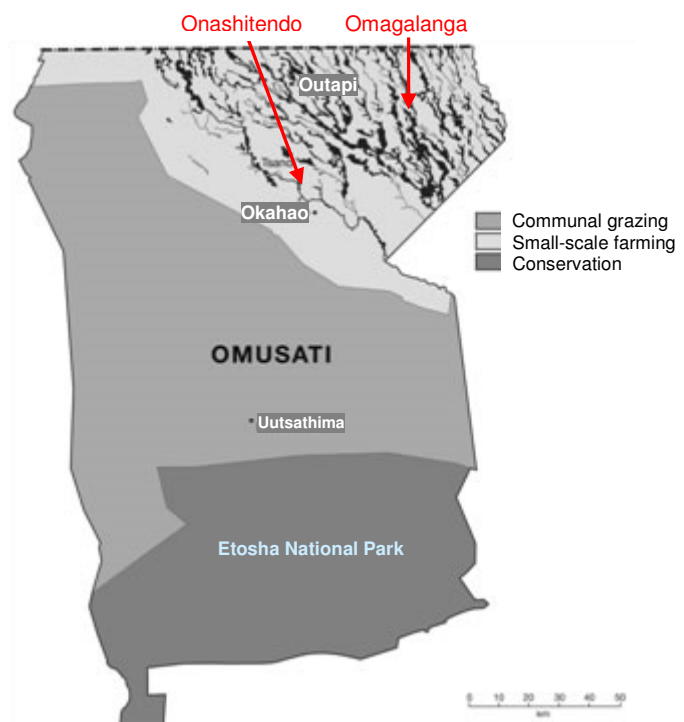
Land Use Trends

As already mentioned, the high population density and insufficient job opportunities, amongst others, *causes a number of different environmental impacts* which lead to *unsustainable land use* and *reduce ecosystem services* (which will be explained in detail in the following section).

Land degradation is, amongst others, caused by deforestation, increased non sustainable land use: Soils in the communal areas are generally very sandy and the trees have been removed in large numbers over the past 50 years, leaving large areas of soils totally unprotected from wind and precipitation. House and compound construction requires large amounts of wood; an average Ovambo¹⁹ homestead requires over 20.000 poles, more than 100m³ of construction wood from the surrounding woodlands. The favored woods are the harder, slower - growing species, such as

Mopane trees (*Colophospermum mopane*) which are more resistant to termites and usually last for about six years before needing replacement.

Map 10 shows, on the example of the Omusati Region, the land use structure of the Northern Central Region.



Map 10: Land Use Structure in the Omusati Region (MODIFIED AFTER THE UNIVERSITY OF SHEFFIELD 2010)

¹⁹ **Ovambo People:** Belong to the ethnic group of the Bantu family and consist of eight kindred tribes which inhabit in the Ovamboland in northern Namibia (Northern Central Region). The Ovambos make up the greatest population in Namibia with about 900.000 people. They migrated south from the upper regions of Zambezi. The reason that they settled in the area where they now live was the rich soils that are scattered around the Ovamboland (NIEMANN 2000).

Large numbers of cattle graze every hectare of land and consume virtually all crop residues, leaving soil micro-organisms without any feedstock. In recent years, large farms have been fenced in the communal areas, and this has put increased pressure on the limited grazing lands in the commonage areas. Population pressure is putting increasing demands on land which used to be grazed by livestock. Temperature increases of uncovered soils to levels that preclude the survival of necessary micro-organisms essential for the maintenance of soil fertility and for rendering phosphate and other nutrients available to plants are also acting to degrade soils. Soil organic matter levels decrease under these conditions, reducing the water and nutrient holding capability of the soil such that the little nitrogenous fertilizer which is applied does not remain for long in the soil but is easily leached out by the first rains. Fertilizers and manure are little used in communal areas (FAO & WFP 2009).

The flow of water in oshanas has been declining since the end of the 1970s. Riparian and floodplain vegetation is considered to be in decline due to *grazing pressure* and *removal of trees for fuelwood*. Freshwater fish populations are under stress from *over-fishing*, especially in recent years as more efficient but less sustainable methods for catching fish have been adopted by rural subsistence fishers (MET 2002). As a *result of reduced ecosystem services* such as water availability, soil fertility and erosion, crop yields are showing clear indications of long term decline in the communal areas which *reduces food security* (GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2009, NPC 2004).

3.3.2 Seasonality

Seasonal shifts in weather conditions (dry and wet season), health condition and food availability are some of the greatest and most enduring sources of hardship for poor people in developing countries. In the Northern Central Region natural events and malaria occur in certain seasons of the year. These significant seasonal changes will be presented in this chapter.

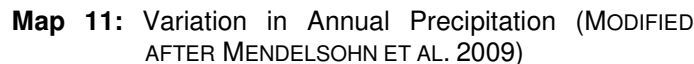
Natural Events

- *Droughts*

Droughts are a regular feature of Namibia. They mainly occur between May and September / October, and it is unusual for droughts not to affect some part of Namibia in any given year (BOTHA 1999). Drought occurrence is caused by variation in climatic conditions. The combined influence of low, erratic precipitation (mean annual precipitation of 270 mm) and high evaporation and transpiration rates result in the regular occurrence

Northern Central Region

Coefficient of Variation in %



The map 11 demonstrates that the highest annual variation of rainfall is in the South and along the coast with values from 60% to more than 100%. Regarding the Northern Central Region, it can be said that the variation of annual precipitation ranges

- *Floods*

56

Although Northern Central Region is situated in a flood plain, *moderate, seasonal floods are common and extreme floods are relatively rare in the area* (see section 3.3.3 under extreme weather events) (GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2009).

Seasonal / moderate floods in flood plains have positive impacts and benefits for the environment and the people. These are mentioned in the following and in the excursus “Significance of the Cuvelai Drainage”:

- Increase of ground water table to trees and via boreholes to humans
- Redistribute nutrients and organic debris downstream, increase of cultivation conditions
- Floodplains provide ideal breeding and feeding habitat for specific fauna like fish, amphibians, birds, and support a diverse flora which increases the resilience and balance of the wetland ecosystem (KACHALE 2009).

Excursus: Significance of the Cuvelai Drainage

*This wetland provides water and nutrients for people, livestock and crops. It also brings fish which are an important source of protein. Aquatic plants abound in the warm, nutrient-rich water and are used as food and medicine. The flooding of the oshana is augmented by local rainfall in the area. **The people of the area depended entirely on this seasonal floodwater** and on wells in the dry season (DFRN & CLIMATE SYSTEM ANALYSIS GROUP 2008).*

Malaria

Malaria is a major public health problem in Namibia (GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2009). It is the leading cause of illness and death among under-five year olds and the third leading cause among adults after AIDS and Tuberculosis. The transmission is seasonal; it occurs mainly between January and May in the North-East and North-West of the country where most people live and where mosquito vector numbers are highest. *Rates of infection vary from year to year and are especially high after heavy rains* (MENDELSON ET AL. 2002, NPC 2004). Heavy rainfall, high temperatures and high humidity in northern Namibia creates pools of stagnant water where malaria carrying mosquitoes breed (UN'S IRIN HUMANITARIAN INFORMATION UNIT 2004). Infections also vary during the year starting earliest in December in the North-East (Caprivi Region) because that region receives rain before areas to the West and South (see map 12). The disease then spreads so that rates of infection peak in March, April and May in regions such as Omusati and Kunene (MENDELSON ET AL. 2002). In the Northern Central Region the occurrence of the malaria infection rate is mainly between 50-100 and 100-300 cases per 1.000 people (see

Incidence per 1.000 People

- 0-5
- 5-50
- 50-100
- 100-300
- 300-500
- > 500

This change has led to an increase in treatment expenses for malaria such as the increased distribution of mosquito nets by the government (NPC 2004, GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2009, WHO 2009A & 2009B).

Shocks can destroy assets directly, such as in the case of floods. They can also force people to abandon their home areas and dispose of assets (such as land) prematurely as part of coping strategies. Recent events have highlighted the impact that human health shocks or international economic shocks, including increased prices of basic needs, can have on the very poor. This chapter will highlight the relevant shocks and their impacts on the Northern Central Region.

- *HIV/AIDS Pandemic*

58

from 2002 (20%) to 2008 (~23.8%), further increased and has not declined like the national HIV rate (MOHSS & UNGASS 2010, MOHSS 2008 & NPC 2007).

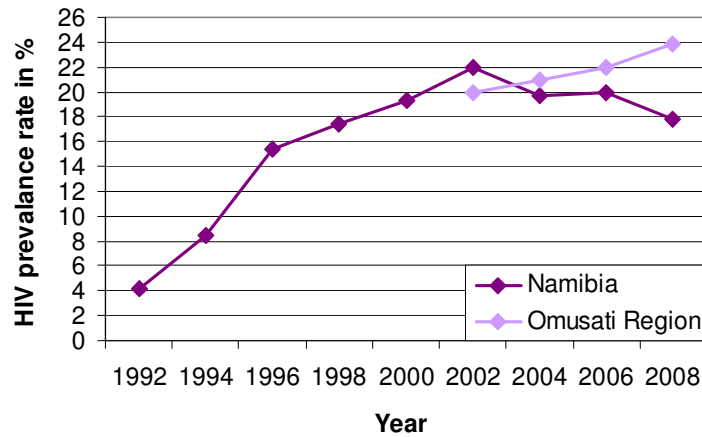


Figure 8: Development of HIV Prevalence Rate amongst Pregnant Women aged 15-49 in Namibia (1992-2008) & Omusati Region (2002-2008) (BASED ON MOHSS & UNGASS 2010, MOHSS 2008 & NPC 2007)

The negative impacts of HIV/AIDS on health, like the debilitation of the immune system and decrease in human life spans, already became noticeable by the decrease of Namibia's population growth rate of about 1.6% in 2008 and by the relatively low life expectancy of about 61 years (NPC 2004, PDDESA OF THE UN SECRETARIAT 2008). AIDS has altered demographic attributes of the Namibian population. The age structure for Namibia has shifted in the last 20 years (USAID 2009A). People in the reproductive and employable age (15-49 years) are particularly affected by the pandemic which causes negative consequences for the economic and social structure of the area (ISOE 2006). For example, economic output is expected to be adversely affected, and this is compounded by reductions in productivity which results from morbidity and the shortage of skilled labor. Increasing health expenditure and expenditure for funerals are, moreover, expected to lead to a decrease of disposable income at the household level with effects in terms of economic growth (MET 2009). Social impacts could be observed during the field study. In the visited communities there are more children than elderly people, and more women can be found than men. However, this observed demographic structure is not only caused by the HIV/AIDS pandemic but is also due to insufficient job opportunities. That is why many people between 15-49 years migrate to towns and cities where job opportunities are better (excursus Migration, p. 53). Furthermore, it is expected that lower birth rates (has already declined from 5.4 children per woman in 1992 to 3.4 children per woman in 2008) and higher migration rates will occur which will also have an impact on the reduction of the population size in the Northern Regions (MOHSS & MII 2008, ISOE 2006, WHO 2009A).

- *Tuberculosis*

Tuberculosis is a common and often deadly infectious disease caused by *Mycobacterium tuberculosis* in humans. Tuberculosis usually attacks the lungs but can also affect other parts of the body (WHO 2010). Namibia faces a high tuberculosis prevalence rate of 290 per 100.000 people in 2008. In comparison, Swaziland has one of the highest prevalence rates in the world with 770 cases per 100.000 people, and Germany has one of the lowest with 2 per 100.000 people in 2008 (WHO 2009A). About two thirds of people with tuberculosis are also HIV-positive (WORLD BANK 2009). The case notification rate has averaged around 736 cases per 100.000 people for the last five years which is nearly eight times higher than the rate in 1996. This increase has been fueled by the spread of HIV/AIDS (USAID 2009B). Namibia's high HIV/AIDS prevalence poses serious problems for the successful treatment of tuberculosis HIV/AIDS (WORLD BANK 2009). Due to a high (average above 20%) HIV/AIDS prevalence rate in the Northern Central Region and the abundant occurrence of tuberculosis, this epidemic also poses a threat for the people of this region (MOHSS 2008). The impacts of tuberculosis are similar to those of the HIV/AIDS pandemic, such as debilitation of the immune system, inability to work and increased mortality, and also have consequences for the social and economic structure of the region.

Extreme Weather Events

- *Droughts*

The occurrence of seasonal droughts is common in Namibia, but the occurrence of long and persistent droughts is certainly a threat in vulnerable areas like the Northern Central Region. Extreme drought events occurred in the country in 1970/71, 1982-84, 1992/93, 1994/95, 1997/98, 2002/2003 and 2006/07 (SWEET 1998, GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2010). Of Namibia's limited and erratic rainfall, an estimated 83% is lost through evaporation and 14% through transpiration while only 2% runs off into rivers or dams. Only 1% of the precipitation infiltrates and recharges groundwater. Due to the high evaporation from dams, uncertain groundwater recharge rates, and high population density in specific areas like the Northern Central Region, extreme water stress can be observed in these parts of the country and have following negative impacts for the environment and the people (SWEET 1998):

- Reduced land carrying capacity and overgrazing in high livestock density areas leads to environmental degradation.
- The drying up of boreholes and, for example, temporary water bodies like oshanas in the northern rural areas leads to severe water deficit which affects especially humans.
- Reduction in the conditions of livestock and hence the value of livestock as well as increased livestock mortality due to long and hot drought periods which results in an economic decline for land user.
- Crops lose their quality or dry up, yield losses occur, which has an impact on the food security of land user, and cereal deficits occur which increase cereal imports and prices. (KACHALE 2009, INTERVIEWS WITH COMMUNITY MEMBERS OF ONASHITENDO AND OMAGALANGA, MARCH 2010 & UNIVERSITY OF NAMIBIA 2008).

- *Floods*

Extreme flood occurrence is related to rainfall variability the absolute volume of rainfall and the point in time when rainfall is received and represents a high risk factor, particularly for agriculture and the local people (ISOE 2006).

The primary causes of flooding in most areas within Namibia are above average rainfall and floodwater from neighboring countries, particularly Angola and Zambia. The secondary causes which contribute to flooding, especially in the Northern Central Region, include the following: high population density in towns and cities that has led to unplanned informal settlements that are either close to a waterway or block the natural flow of a river or lacks proper drainage facilities; narrow bridge culverts that are not routinely cleared of debris; reluctance of people vulnerable to flood disasters to relocate to high ground; and inadequate expertise and knowledge in disaster risk management at regional and constituency levels (KACHALE 2009).

In general, extreme flood events have negative impacts for both the environment and people and include the following:

- Inaccessibility and damage to homesteads and public as well as private infrastructure (e.g. road network, clinics, schools, water supply system) (as an example see picture 6). Especially informal settlements are worst hit in densely populated areas.
- Poor crop performance, yield losses or complete destruction of crop fields (as an example see picture 6)
- Loss of human and domestic animal life through drowning
- Increased outbreak of water-borne diseases such as diarrheal illnesses, cholera and malaria (KACHALE 2009 & INTERVIEWS WITH COMMUNITY MEMBERS OF ONASHITENDO AND OMAGALANGA, MARCH 2010)



Picture 6: Left: Infrastructure Damages, Right: Flooding causes Waterlogging on Fields and leads to Yield Losses (AUTHOR'S OWN PICTURES, OMAGALANGA: MARCH 2010)

Extreme floods of severe impacts occurred in 2008 and 2009 in the Cuvelai Drainage. Floods with impacts similar to the aforementioned ones have occurred in the 1960s and 1970s. The latest flood from 2009 has caused substantial negative impacts in the Northern Regions. The flood affected some 670.000 people (83% of the population in the Northern Central Region); 21.000 were displaced (3%), and 4.000 were relocated (0.5%). In addition, the flood resulted in the closure of certain small and medium enterprises, roads and schools. Three settlements had their sewerage systems washed away, twelve clinics were cut off, 45.000 ha of agricultural land were destroyed, and 3.000 livestock (mostly goats) were lost. Immediately following the floods, 71.000 people were estimated to be in critical need of food relief (GOVERNMENT OF THE REPUBLIC OF NAMIBIA 2009).

Climate Change

- *Temperature*

Based on the historical development, a clear trend for warmer temperatures in the latter half of the 20th century has been observed which is generally 1-1.2°C warmer than at the beginning of the last century (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008).

The climate change risk in Namibia indicates that overall a hotter climate is expected which will lead to mostly more arid conditions (NPC, MET, UNDP 2009). Changes in temperature are minimal towards the coast and increase further inland during all seasons for time period between 2046-2065 with minimum expected increases of 1-2°C during summer and winter. The maximum projected increases in summer are between 2-3.5°C and 2.5-4°C winter (see figure 9) (MET 2009). Accompanied by a temperature increase are both an increase of evaporation by 5-15% and wind speed (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008).

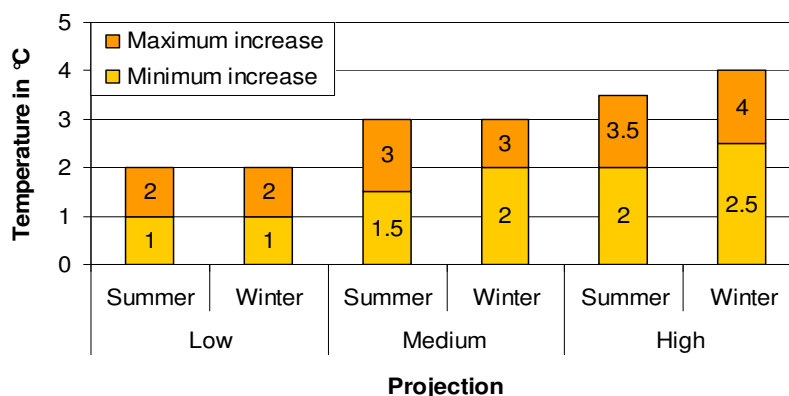


Figure 9: Three Projected Increases in Mean Surface Air Temperature in Summer (January-March) & Winter (July-September) for the time period between 2046-2065. The three scenarios are taken from the IPCC A2 SRES²⁰. The Projected Change is based on 13 Global Circulation Models (BASED ON DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008).

- *Precipitation*

Although there are no obvious historical trends in precipitation on timescales of four years, this does not mean that there have not been changes in rainfall on shorter timescales such as during the start and end of the wet season or that daily precipitation amounts have not changed. Evidence of increases in the length of the dry season and decreases in the number of consecutive wet days has been found at different meteorological stations in Namibia. For instance, a later start and earlier interruption of the rainy season, especially in northern Namibia, has been observed. Additionally, there have been statistically significant increases in measures of rainfall intensity at the station in Windhoek (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008).

Generally speaking, there is little and deficient long-term primary data across Namibian weather stations which make the evidence of the climate development in the last decades difficult to find (GTZ & IECN 2009).

In the future strong regional variations might appear, and certain areas of the country will potentially benefit from more humid conditions (NPC, MET, UNDP 2009). It is likely that in the period between 2046-2065 there will be an increase in late summer rainfall over major parts of the country, especially for the central and north-eastern regions, and a decrease in winter rainfall in the south-western regions. Increases in precipitation are likely in the second half of the wet season from January to April, especially in the central and north-eastern regions. The global circulation models are not conclusive about the amount and

²⁰ **IPCC A2 Special Report on Emission Scenarios (SRES):** describes a very heterogeneous world. "The underlying theme is self-reliance and preservation of local identities. Fertility patterns across regions converge very slowly, which results in continuously increasing global population. Economic development is primarily regionally oriented and per capita economic growth and technological change are more fragmented and slower than in other storylines" (IPCC WORKING GROUP III 2000).

intensity of precipitation in the Cuvelai Drainage (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008). Individual precipitation events are expected to become more intense and pronounced, especially in late summer, while the wet seasons are likely to be shorter (MET 2009). Some global circulation models predict a total reduction of the precipitation amount of 10-20% over Namibia and South Africa (DE WIT & STANKIEWICZ 2006).

- *Extreme Weather Events*

Climate variability is likely to have a very significant impact on Namibia. The number and intensity of extreme weather events (floods and droughts) will increase. It is expected that regional climate variability will offset the changes introduced by longer-term climate trends in some cases. For example, increasing rainfall intensity could offset a shortening of the wet season (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008; NPC, MET, UNDP 2009). It is noteworthy to mention that understanding of the high natural variability of Namibia's climate is limited; it is, therefore, likely to remain a key aspect of the country's climate in the future. More information needs to be collected, and more modeling is required to determine and understand the inter-annual variability of the climate in the future (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008).

- *Impacts*

Temperature, precipitation and extreme weather event changes are expected to lead to short- and long-term changes in the environment, many of which will have a direct and indirect impact on human health. For example, outbreaks of cholera are linked with recent flood events in northern Namibia. Malaria may become more prominent in areas predicted to have higher rainfall. Respiratory and gastro-intestinal infections may also increase due to poor nutrition and shortage of clean water if conditions become drier and hotter. Hence, climate change is expected to add additional pressures to the social capital which is already burdened by poverty and health challenges such as the HIV/AIDS pandemic, tuberculosis and malaria, especially in the Northern Central Region (MET 2009, UNDP 2005).

Regarding agriculture or rather subsistence farming, there is the risk of shifts in the growing season and insufficient seasonal rainfall duration. This leads to a lower frequency of sufficient seasonal rainfall for cultivation. The severity of the situation will depend on the location and the crops grown (GTZ & IECN 2009; NPC, MET, UNDP 2009). Often different factors are linked with each other; hence increased temperatures and reduced rainfall are likely to cause shifts in dominant woody vegetation with resultant reduction in livestock production in some areas and bush encroachment in others. It will also lead to reduced

grain/crop production and yields due to droughts and floods which has an impact on loss of food security and, therefore, an increased rural poverty in the northern communal areas (UNDP 2005, NPC 2004, DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008). Rain-fed agriculture (main type of agriculture in the Northern Central Region) is highly vulnerable to changes in climate variability, seasonal shifts, and precipitation patterns. Hence, any amount of warming will result in agronomic drought due to increased water stress (UNIVERSITY OF NAMIBIA 2008). For example, pearl millet, which is relatively drought resistant, is the most cultivated crop in the northern regions, but if effective soil moisture decreases in the future, then decreases in yield, and a greater inter-annual variability in yield, are likely (MET 2002).

Under current climate conditions Namibia's carrying capacity for water will be exceeded within the next decade, as a doubling of the demand for water is expected to surpass the currently installed abstraction. Driving forces in the Northern Central Region are population growth, urbanization, land use, lack of tenure rights and extreme weather events (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008, GTZ & IECN 2009). Desiccation, due to a combination of climate change and human demand for water, is likely to accelerate trends like deforestation and over-fishing. Higher water temperatures, changes in flow regimes and water levels and a decrease in water quality are also damaging to aquatic ecosystems and their endemic and indigenous biodiversity (MET 2002). Increased evaporation causes further stress on water availability which will, in turn, lead to a decrease of ecosystem services of wetlands such as the Cuvelai Drainage which will be inundated and dry out sooner. Reduced water availability will also cause a further decline of crop yields. Rainfall decreases of 10-20% would induce a decrease of runoff and drainage of about 25% in rivers dependent on rainfall over Angola and Zambia as well as to a likely reduction of groundwater recharge (DFRN & CLIMATE SYSTEMS ANALYSIS GROUP 2008, GTZ & IECN 2009).

Using Onashitendo and Omagalanga as examples, the following table, 17 demonstrates how climatic conditions, its changes, their impacts and adaptation measurements on the local level look.

Table 17: Perception of Climatic Conditions on the Local Level

| Perception of Climatic Conditions | Community Onashitendo | Community Omagalanga |
|-----------------------------------|---|--|
| Appropriate Climatic Condition | <ul style="list-style-type: none"> • <u>Majority</u>: is satisfied with temperature & rainfall conditions • <u>Minority</u>: is not satisfied with temperature & rainfall conditions | <ul style="list-style-type: none"> • <u>Majority</u>: is not satisfied with temperature & rainfall conditions • <u>Minority</u>: is satisfied with temperature & rainfall conditions |
| Changing Climatic Conditions | <ul style="list-style-type: none"> • <u>Temperature</u>: majority did not notice any change • <u>Rainfall Occurrence / Intensity</u>: some people notice an increase and others no change at all • <u>Flood Occurrence / Intensity</u>: majority notice an increase • <u>Drought Occurrence / Intensity</u>: 50% did not notice any change and some people notice an increase | <ul style="list-style-type: none"> • <u>Temperature</u>: majority notice an increase • <u>Rainfall Occurrence / Intensity</u>: majority notice an increase • <u>Flood Occurrence / Intensity</u>: majority notice an increase • <u>Drought Occurrence / Intensity</u>: majority notice an increase |
| Impacts | <ul style="list-style-type: none"> • <u>Floods</u>: majority experienced yield losses, infrastructure damages and some people experienced malaria infections • <u>Droughts</u>: majority did not experienced any impacts, some people experienced losses of yields and livestock or erosion problems | <ul style="list-style-type: none"> • <u>Floods</u>: majority experienced losses of yields and livestock, infrastructure damages and some people experienced malaria infections • <u>Droughts</u>: majority experienced livestock losses and some people experienced yield losses |
| Adaptation | <ul style="list-style-type: none"> • <u>Against Floods</u>: more than 50% take adaptive measures such as: <ul style="list-style-type: none"> - Erosion protection due to change of cultivation direction, cultivation on the top of the soil dam instead along the plough depression and cultivation of trees - Increased storage of food - Building of new houses on safer areas, not that close to an oshana • <u>Against Droughts</u>: minority take adaptive measures such as <ul style="list-style-type: none"> - Increased storage of food - Rain water harvesting | <ul style="list-style-type: none"> • <u>Against Floods</u>: minority take adaptive measures such as: <ul style="list-style-type: none"> - Erosion protection due to change of cultivation direction, - Building of dams around houses • <u>Against Droughts</u>: minority take adaptive measures <ul style="list-style-type: none"> - Rain water harvesting |
| Problem | <u>Majority</u> has no or insufficient knowledge about adaptation measurements | |

There is a clear correlation between scientific evidence of changing climatic conditions and their perception by the people of Omagalanga. Contrary to the perception of changing climatic conditions in Onashitendo, no clear trend can be seen apart from increases in flood occurrence and intensity. However, in both communities first approaches of adaptation exist, especially against floods and particularly in Onashitendo. Generally, it could be assessed that insufficient knowledge exists about adaptation measurements which the people could employ to protect themselves against extreme weather events.

3.3.4 Summary

In summary, it can be said that the vulnerability context for the people and their livelihoods in the Northern Central Region, especially in the Cuvelai Drainage, is very complex and high, and is composed of trends, seasonality and shocks. All of the aforementioned trends, seasonality and shocks have different functions; they can be drivers, impacts & drivers, impacts or rather high vulnerability impacts (see figure 10).

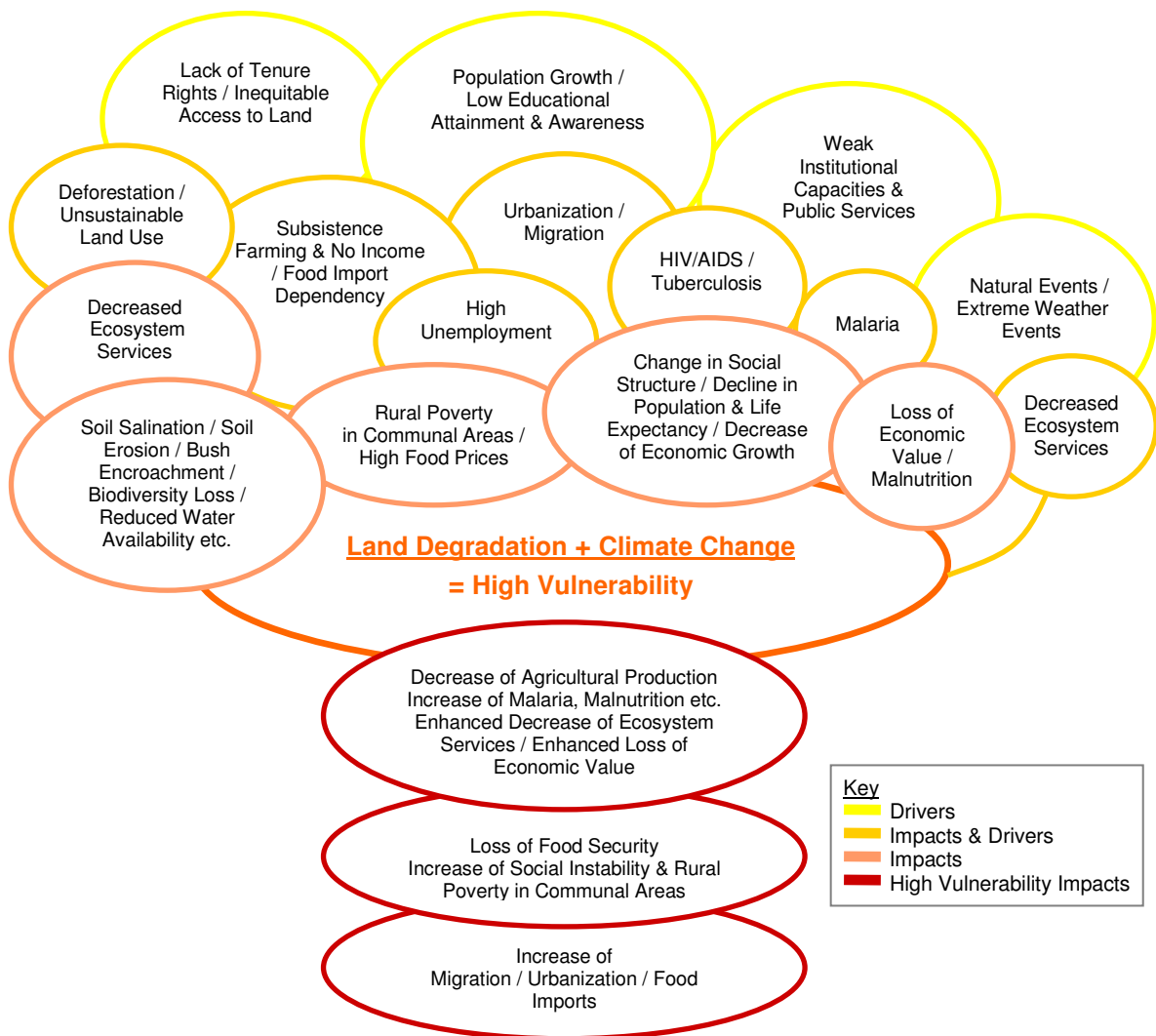


Figure 10: Vulnerability Driver & Impact Chain

Based on land degradation and climate change in the center of the vulnerability assessment, the main drivers are: lack of tenure rights & inequitable access to land, population growth / low educational attainment & awareness, weak institutional capacities & public services as well as natural events & extreme weather events. These drivers have different impacts on the ecological and socio-economic level such as: deforestation / unsustainable land use, subsistence farming & no income / food import dependency, high unemployment, urbanization / migration, HIV/AIDS / tuberculosis, malaria and changed ecosystem services. These impacts are, at the same time, also drivers for the following impacts: reduced ecosystem services (e.g. soil salinity / soil erosion / bush encroachment / biodiversity loss / reduced water availability etc.), rural poverty in communal areas / high food prices, change in social structure / decline in population & life expectancy / decrease of economic growth as well as loss of economic value / malnutrition. All these aspects have an influence on the degradation of land and thus to an increased vulnerability of the region.

Climate change is expected to add additional pressures to human, natural, physical, and financial capital. Human capital, especially, is already burdened by poverty and health challenges such as the HIV/AIDS pandemic, tuberculosis, malaria and malnutrition. Due to the influence of climate change, such as increased temperatures, shorter rainy season and high climate variability, deforestation and unsustainable land use will lead to an enhanced reduction of ecosystem services such as soil erosion, bush encroachment and biodiversity loss as well as to a decreased agricultural production and reduced water availability. These climate change impacts lead to an enhanced loss of food security and an increase of social / human instability and rural poverty in communal areas which will further increase migration, urbanization and food imports. These drivers and impacts compose a *high vulnerability of the Cuvelai Drainage and, therefore, to the livelihoods of its people.*

3.4 Livelihood Strategies & Outcomes

The following chapter describes the livelihood strategies and livelihood outcomes of subsistence farmer (3.4.1) and employees / freelancers (3.4.2) from the communities Onashitendo and Omagalanga. The analysis of strategies is an essential part since the choice of specific strategies directly translates into a successful or hampered realization of the personal objectives of the target groups. The result of the chosen livelihood strategy is the livelihood outcome which demonstrates the level of vulnerability of different groups as well as their adaptive capacity.

3.4.1 Subsistence Farmer

Livelihood Strategy

Subsistence farming as such is a pure coping or rather survival strategy that is pursued in the absence of better alternatives. These strategies are rational approaches to risk mitigation given the semi-arid climates, fragile ecology, and poor linkages to markets that dominate the environment in which subsistence farmers operate (SATTAR ET AL. 2003). Through this strategy, subsistence farmer have a complete lack of income. Financial support is available only in the form of monthly pensions from the state or through (irregular) support from relatives (mostly the children) working outside the region. Hence, the coping / survival strategy does not allow for the pursuit of long-term enhancement strategies. The communities' lack important human (in the sense of low educational attainment & awareness) and financial capital and have only very limited options to secure their livelihoods.

Subsistence Farmers are the most vulnerable group in the Cuvelai Drainage. Their farming activity does not allow for measures taken in order to cover operational costs (such as additional food, clothing, school fees, transportation, health care or electricity and water access). At the same time it is also impossible to take measures for adaptation to possible trends (3.3.1), seasonality (3.3.2) and shocks (3.3.3). In the case of a negative event, the only coping mechanism at hand is the reliance on social networks within the community, family as well as friends and to readjust or recover the old status quo after a certain period of time.

Livelihood Outcome

Subsistence farmers live in very simple conditions on the subsistence minimum. Incomes or rather food generated through farming are hardly enough to ensure physical survival and do not allow for any savings or investments to improve living situations, enhance adaptive capacity and reduce vulnerability.

3.4.2 Employees & Freelancer

Livelihood Strategy

Employees and freelancers (such as teachers, construction workers or taxi drivers) follow a mitigation strategy in the sense that the workers activate their own human capital which, in particular, is their physical ability to labor in order to generate an income and sustain themselves and their families. This group of people is at least able to cover operational costs and to protect themselves better against possible risks and shocks due to

diversification and combination of different assets. Most people in this group live in households where subsistence farming is also being employed.

Livelihood Outcomes

Employees and freelancers are less vulnerable to shocks and, especially, trends. This group of people has improved food security, more income and a better well being than the group of subsistence farmers.

At the time of the field research (March 2010), the pilot phase of the communal land registration in Omagalanga was running since year an a half. At this stage it is not possible to evaluate the effects of this implemented land registration in regard to vulnerability reduction, poverty reduction and / or sustainable development compared to a community like Onashitendo where traditional land use rights are in place. In general, there is no evidence or clear difference in the living conditions, livelihood strategies and outcomes between Onashitendo and Omagalanga. Clear differences, however, can be seen in regard to the livelihood strategies and outcomes between subsistence farmers and employees / freelancers. Employees / freelancers possess an adaptive capacity and are less vulnerable than subsistence farmers.

4 Discussion

This chapter is divided into three subchapters. The first one presents lessons learned from the applied approach and methods of the master thesis at hand (4.1). The second one will discuss the presented results and respond to and conclude the research questions (4.2). The third and last subchapter will provide recommendations for different operating levels (4.3).

4.1 Evaluation of Approach & Methods

It is important to evaluate the applied sustainable livelihood approach and methods of this thesis since some of them show strengths and others deficiencies. The section lessons learned provides an impression about the representativeness of the case study and demonstrates several aspects where further investigations would possibly optimize the outcomes.

4.1.1 Sustainable Livelihood Approach

The Sustainable Livelihood Approach was used within this master thesis as an approach to assess the livelihood circumstances of land users in the Northern Central Region of Namibia. The SL approach provides a clear guideline to assess the livelihood circumstances of the target group and thus the grade of vulnerability against trends, seasonality and shocks. Using this approach simplifies the assessment process of the aforementioned object in many respects. For example, it is possible to identify drivers of vulnerability and impacts of driving trends, seasonality or shocks. Nevertheless, it became apparent during the implementation of the SL approach that the number of aspects (five capitals plus one extra topic regarding the perception of climatic conditions) which have to be approached during the livelihood assets assessment is extensive and, therefore, rather time intensive. Furthermore, it is noteworthy that the “Livelihood Assets” consist of five capitals (human, social, natural, physical and financial), but the cultural capital is not considered. The cultural capital also has an influence on “Livelihood Strategies” and thus its “Livelihood Outcomes”. Another aspect is that every asset capital is equally weighted which does not correspond to reality. Certain capitals, such as the natural-, human- or financial capital, have a more critical relevance in terms of the “Vulnerability Context”, “Livelihood Strategies” and its “Livelihood Outcomes”. For example, a certain area, such as the Cuvelai Drainage, with its significant physical and socio-economic characteristics, has a stronger exposure against extreme weather events than an area like the Skeleton coast in Namibia where the number of inhabitants is very low.

An aspect which is missing in the present master thesis is the assessment of the communal land boards which is the implementing actor of the CLRA on the regional level. Based on a limited time frame in the case study area it was not possible to investigate their work. The assessment of the communal land boards could help to gain a deeper understanding about difficulties and reasons of the slow CLRA implementation process on the regional level.

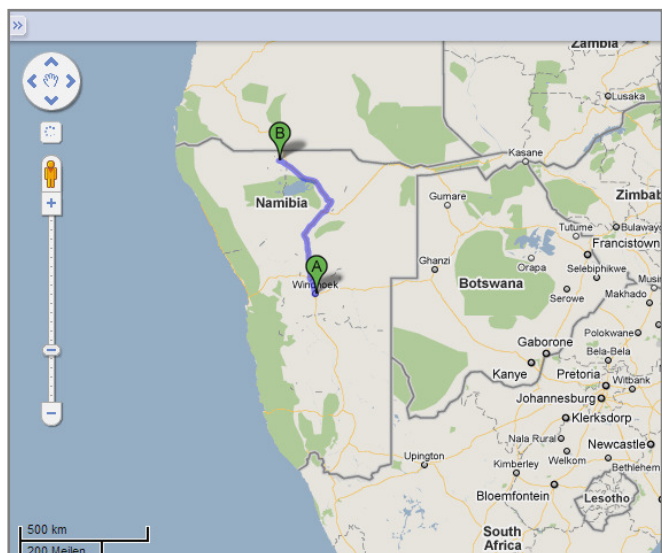
For the implementation of possible strategies developed with the help of the outcomes of the SL approach it would be additionally necessary to assess the reasons behind actors' decisions regarding certain policies to initiate changes in land-dependent livelihoods over time. This will produce a more integrated understanding of sustainable land management at different levels (individual, household, village, and potentially, even region wide) and lead to more appropriate policy recommendations for the present and future as also mentioned in the study of BUECHLER 2004.

4.1.2 Methods

Six different methods were used to apply the SL approach. They are literature review, semi-structured interviews, observations, focus group discussion, expert interviews and group consultations & discussions.

It is very important to mention that a lot of relevant and useful *literature* was found although data and figures differ noticeably in the various publications. Therefore, it is important to clarify that the correctness of certain data does not lie within the responsibility of the author. Conflicting data could be found in sources relating to, for example, climate and socio-economic data.

One very significant limitation during the entirety of the research was the time frame of three months, especially the short time which was allotted for the field study in Northern Central Namibia. Due to logistics and time constraints, the remote study area (around 720 km away from Windhoek, see map 13) could only be visited for 11 days. Within this time



Map 13: Distance between Windhoek (A), in the Centre and Oshakati (B), in the Northern Central Region of Namibia (SCREENSHOT: GOOGLE MAPS 2010)

only two communities could be visited, each of them for three days. Based on the aforementioned logistic hindrances merely 10 semi-structured interviews in each community and one focus group discussion with 15 participants could be realized. This number of interviews or, rather participants and communities might not be representative but, nevertheless, provide a first inside impression of the livelihood situation. Therefore, it is recommendable to extend the case study regarding the amount of interviews and communities within the Cuvelai Drainage in the future in order to get a better and more representative picture.

Regarding the semi-structured interviews, which were applied for data collection, it can be said that it was a challenge in terms of time. The average time for an interview required one to two hours per person which is too long for both the interviewees and the interviewer. KOLLMAIR & GAMPER (2002) reached similar conclusions regarding interview times in their study. In some cases the interviewed person began to lose their concentration after a certain time and, in order to finish the interview quickly, did not think deliberately about their answers. Therefore, it can be assumed that certain aspects could neither be approached nor discussed. On the other hand, if the whole livelihood asset assessment were shorter (in terms of interview time per interviewee) important aspects could not be assessed.

Nevertheless, the progress during the field study in the Omusati Region, especially the applied semi-structured interviews and focus group discussion, was mainly satisfactory. Both the participants and the translators were very cooperative and receptive. It was, therefore, possible to achieve very comprehensive results which were additionally completed by field observations. It has to be further considered that language barriers caused some bias: a translator was necessary for the translation from English to Oshiwambo, and in addition, not all English words have the same meaning in Oshiwambo and vice versa. The people obviously had difficulties in answering questions of perception, such as, "Are there any changes in the occurrence and intensity of floods within the last years / decades?", or questions of exact amounts like, "How big is the size of your land?". It must be considered that answers given to this type of questions differ widely. A further difficulty was that it was not always possible to interview people who fulfilled the identified criteria (such as age or gender). This has to do with the availability of the people during the week. For instance, males between 20 and 60 are often working within the week in other places and are, therefore, not available. All of these aforementioned aspects contribute to a limited representativeness. They do, however, reflect the reality of a field study which represents exactly the discrepancy between theory and practice.

Expert interviews were a very helpful method to get a better picture about the political background. However, the four expert interviews only allowed some first impressions. This could be intensified in future investigations.

Group consultations & discussions can be classified as very revealing method due to the direct contact, comments and advice of experts. Thus, this method made a vital contribution to the research in that it allowed for a broader range of aspects to be considered and widened the perspective on the investigated topic.

In summary, it can be said that it is recommendable for further studies to consider the following aspects:

- assess the cultural capital of the target group,
- evaluate the work of the communal land boards or rather the new institution in form of the regional land boards,
- reasons behind actors' decisions of certain policies,
- assess a representative amount of interviews with local people as well as with experts
- and time should be adjusted to data collection.

4.2 Discussion of Results

In a first step this section will discuss the research findings, and in a second step it will respond and conclude the research questions.

4.2.1 Research Question 1

Does the process of land registration in communal areas consider global & national change (e.g. climate change, population growth, high HIV ratio)?

The Communal Land Reform Act (the registration of communal land) was implemented to achieve the following goals:

- secure equal rights in terms of access and gender to communal land,
- regulate the allocation of land use rights (secure tenure) to reduce land disputes,
- promote economic and social development, and
- support environmentally sustainable use of natural resources.

Equal access to communal land, in terms of subsistence farming in the context of basic food security, is significant in times of high population density and growth, high food prices and high unemployment within the Cuvelai Drainage. Therefore, equal access to communal land is, for the majority of land users, essential for survival. It is also important regarding *gender mainstreaming*. Traditionally, communal land use rights were in the hands of men. Considering both migration (family members migrate within the country to have better job opportunities) and the high ratios of HIV/AIDS and tuberculosis (and therefore a low life expectancy) it is of high importance that both men and women have the possibility to be the certificate holder of the certain land use right. It is also determined within the CLRA that after the death of the certificate holder, family members have privilege access to take over the land use right. This aspect is relevant with respect to secure land use rights and thus planning security, and it also contributes to basic food security.

The objective of the CLRA to “*regulate the allocation of land use right*” is especially relevant with regard to high population density. Population growth leads to an increased overexploitation of land and thus to an increased occurrence of land disputes. With the new regulation the allocation of land is no longer a subjective decision of one person (traditional authority / headman) but rather a decision of a board (communal land board or rather the new regional land board) consisting of different representatives (see section 3.2). This supports a more objective land allocation and at the same time reduces land disputes.

Therefore, it can be stated, that the first two objectives of the CLRA, namely “*secure equal rights in terms of access and gender to communal land*” and “*regulation of the land use rights allocation (secure tenure) to reduce land disputes*” consider a number of national changes but not global changes, such as climate change or international economic trends (food import dependency).

Regarding the objectives “*promote economic and social development*” and “*support environmentally sustainable use of natural resources*”, it is not clear how they will be reached. Within the programme of land registration, neither communication strategies nor capacity building exist (such as strategies to use natural resources in a sustainable way, to adapt more favorably to extreme weather events or to create job alternatives and generate income) for the people who live in communal areas. These impressions were confirmed through the interviews in Onashitendo and Omagalanga. The study showed that the inhabitants often lack knowledge and awareness regarding alternative land use practices, income possibilities and adaptive strategies to protect themselves better against floods or droughts.

This leads to the conclusion that the objectives “*promote economic and social development*” and “*support environmentally sustainable use of natural resources*” do not consider national as well as global changes in the way that the CLRA is implemented.

In summary, it can be stated that the CLRA considers some national changes. The objectives of “*equal rights in terms of access and gender*” and “*the regulation of the allocation of land use right*” contribute to decrease possible negative impacts of national changes such as population growth, high HIV/AIDS and tuberculosis ratios and land use pressure. Nevertheless, the CLRA does not adequately consider national changes such as high unemployment rate and, therefore, insufficient job opportunities, deforestation, unsustainable land use or extreme weather events. Furthermore, it also does not consider global changes like climate change and international economic trends such as food import dependency. So far there are no strategies or capacity building measures in the context of the CLRA which would “*promote an economic and social development*” and “*support or rather achieve an environmentally sustainable use of natural resources*”.

4.2.2 Research Question 2

Does land registration in communal areas contribute in increasing the adaptive capacity and decreasing the vulnerability to global & national change (e.g. climate change, population growth, high HIV ratio)?

Before discussing the 2nd research question it is necessary to determine the term vulnerability: “The vulnerability of any system (at any scale) is reflective of the exposure and sensitivity of that system to hazardous conditions and the capacity or rather resilience of the system to cope, adapt or recover from the effects of those conditions” (SMIT & WANDEL 2006).

As presented in section 3.3 (vulnerability context) the vulnerability of Cuvelai Drainage has been increased. This is reflected by the exposure and sensitivity of the political, socio-economic and physical conditions of the case study area. The exposure of the people who live in the Cuvelai Drainage is characterized by external (e.g. climatic changes) and internal factors (e.g. demographic changes). After analyzing the livelihood situation in Onashitendo and Omagalanga as example communities of the Cuvelai Drainage, it became apparent that adaptive capacity is low. Table 18 provides an overview of how the vulnerability of both visited communities is composed.

Table 18: Level of Vulnerability in Onashitendo & Omagalanga

| Exposure | Sensitivity | Adaptive Capacity |
|--|--|---|
| <u>Political</u> <ul style="list-style-type: none"> Communal land (traditional allocation & administration of small land parcels, no property rights) Weak institutional capacities & public services | <u>Impacts</u> <ul style="list-style-type: none"> Deforestation / unsustainable land use Increased occurrence of diseases (HIV/AIDS, tuberculosis, malaria etc.) | <u>Political/Institutional Structures</u> <ul style="list-style-type: none"> Onashitendo: lack of tenure rights / inequitable access to land Omagalanga: lack of knowledge regarding reasons and benefits of the CLRA |
| <u>Socio-Economic</u> <ul style="list-style-type: none"> High population density High HIV/AIDS & tuberculosis ratio Insufficient job opportunities Subsistence farming Food import dependency Fragile infrastructure | <u>Impacts</u> <ul style="list-style-type: none"> Deforestation / unsustainable land use Low life expectancy & high mortality rate Insufficient income & market access Migration Loss of economic value e.g. <ul style="list-style-type: none"> Crop variations Yield crop- and livestock losses Insufficient nutrition Infrastructure damages | <u>Human Capital</u> <ul style="list-style-type: none"> Low educational level Weak state of health (HIV/AIDS, tuberculosis) |
| | | <u>Social Capital</u> <ul style="list-style-type: none"> Social network & gender equality can be classified as medium to good |
| | | <u>Physical Capital</u> <ul style="list-style-type: none"> Insufficient infrastructure Technical know how |
| | | <u>Financial Capital</u> <ul style="list-style-type: none"> Low / no income Marginal possibilities to transact investments |
| <u>Natural Resources</u> <ul style="list-style-type: none"> Higher temperatures Enhanced variability of precipitation Increased intensity of extreme weather events | <u>Impacts</u> <p>Decreased ecosystem services:</p> <ul style="list-style-type: none"> Soil salination & erosion Bush encroachment Biodiversity loss Reduced water availability | <u>Natural Capital</u> <ul style="list-style-type: none"> Mean physical conditions & land productivity |

This current level of enhanced vulnerability is likely to even increase through certain trends (e.g. population growth, economic dependencies or land use practices), seasonality (e.g. malaria) and shocks (e.g. climate change or HIV/AIDS ratio). Especially the likelihood of increased temperatures, strong variability of rainfall (in occurrence and intensity) and increased intensity of extreme weather events (floods and droughts) have a strong impact on the high vulnerability of the Cuvelai Drainage and thus the people of the region. To reduce the vulnerability certain aspects have to be fulfilled: One of the key elements of vulnerability reduction is the enhancement of the adaptive capacity of the target group. This would be possible through an adequate implementation of the Communal Land

Reform Act which implies, among others, a transparent information campaign about the reasons and benefits of the CLRA, awareness raising and conveyance of knowledge of alternative and sustainable approaches as well as strategies. This would include, for example, strategies regarding job alternatives to generate income due to improved market access or adaptation measures against extreme weather events. The opacity of the benefits of the legal Communal Land Reform Act for the users became also apparent in a study about “Land rights and vulnerabilities in the Kete Krachi pilot Customary Land Secretariat Area” in Ghana (YANKSON, ASIEDU & YARO 2009).

Besides enhancing the adaptive capacity it is also essential to reduce the exposure. This would be possible by changes in the framework of the CLRA. For example, would it be useful for subsistence farmers under the Customary Land Right to receive micro credits and use their land as loan security besides other criteria. Another change which would contribute to the reduction of the exposure would be the change of land use rights into property rights. Secured land use rights still do not have the same meaning as secured property rights in terms of incentives for sustainable farming practices.

The CLRA and therefore the process of communal land registration alone cannot achieve or rather contribute to increase the adaptive capacity and reduce, therefore, the vulnerability of the land users towards national and global changes such as population growth or the weak state of health (HIV/AIDS, tuberculosis, malaria etc.) within the region. But the CLRA could contribute more to reduce the vulnerability. This would only be possible if the process of communal land registration is accompanied by changes in legislation, capacity building, job opportunities or rather a sustainable economic development of the region, a better health care and improved infrastructure by the usages of renewable energies (e.g. electricity generation). As mentioned by KAGWANJA (2008) & IFAD (2010A) the land reform must go hand in hand with reforms in other related sectors and be part of national development plans and strategies.

4.2.3 Research Question 3

Does land registration in communal areas contribute to investments in sustainable land use and thus to the enhancement of livelihoods and reduction of poverty for land users?

To answer this question it is important to clarify at first what the general conditions are for investments. In order that investments are transacted, certain conditions have to be fulfilled (MAATMAN & SCHRADER 2009):

- Political Stability
 - Economic Stability (Currency)
- } Planning Security
- Knowledge / Awareness → Why (advantages / disadvantages)
 - How
- } to make and finance Investments?
- Financial Basis

Furthermore, it has to be considered that the cultural background, in the sense of why and how to transact investments, is different in certain climate zones. Survival strategies in temperate and continental climates are based on the principle “get in supplies”, thus long-term strategies are utilized. In subtropical and tropical climate zones the survival strategies are basically based on “living from hand to mouth”, thus short-term strategies are utilized. Most developing countries are located in tropical and subtropical climate zones where short-term strategies secure the survival of many poor people (BRAUN 2008, IFAD 1995). This is related to their negligible man-made capital assets, insufficient tenure rights, limited access to financial services and other markets, inadequate safety nets in times of stress or disaster, low educational level and lack of participation in decision-making. This can result in adopting "short-term strategies" or coping strategies that rely mainly on the use of natural resources (IFAD 1995). Furthermore, it is important to stress here one physical aspect: In comparison to temperate and continental climates where one compromised growing period per year exist, in subtropical as well as tropical climate zones there is a widespread growing period which is nearly perennial. Therefore, it is important to keep in mind that especially people in developing countries follow different survival strategies. Apart from that, many people lack a financial basis to save money; they are not used to saving money over a long period of time due to livelihood strategies which are influenced also by physical conditions (e.g. perennial growing period) and a lack of knowledge. There is also little awareness regarding investing in sustainable development and, therefore, in their own and their children's future. Furthermore, it is common for small-scale farmers to use what little money they have to finance their extended family.

Note: Due to the new legally implemented land tenure system in the Oshikuku Constituency the focus of the following discussion is on Omagalanga (Onashitendo is only marginally considered). This is based on the fact that in Onashitendo is still the traditional land tenure system in place.

By analyzing the research findings of both case study communities it can be assumed that the majority of both communities feel “*secure about their land use rights*”, but this does not

lead to an investment towards sustainable land use. Apparently, the feeling about “secured rights”, which is predominant in Onashitendo (traditional land tenure system) as well as in Omagalanga (legal land tenure system), is no catalyst for increased investment behavior. This result is based on the fact that only one of four conditions is fulfilled to transact investments in Omagalanga. Due to the implementation of the Communal Land Reform Act, the political stability in the sense of planning / legal security is given, but the three other conditions, namely economic stability, knowledge / awareness and financial basis, do not exist for most subsistence farmers in the case study area. Investments are primarily conditioned by financial concerns. As shown in the livelihood asset assessment (section 3.1), the livelihood strategies as well as outcomes (section 3.4) of the case study communities, it is clear that the majority of subsistence farmers have no secured monthly income. If they have one it is, in most cases, nominal and neither sufficient for substantial needs nor for the tenure right certificate fee. One financial possibility for small investments would be a microcredit. However, for land users who live under the traditional land use right or the legal customary land right (land use right for areas below 20 ha) it is not possible to use their land as financial security to receive a microcredit. This is only possible for land users with the right of leasehold (section 3.2). In the FINAL DRAFT OF THE NEW LAND BILL (2010) there is one amendment through which it would be possible to convert a legal customary land right into a right of leasehold and make it feasible to use the land as security for a finance institution and to receive a loan. This, again, is merely useful if a legal customary land right holder can demonstrate a business plan and an environmental assessment to the relevant authorities. These conditions are not feasible for most land users in the case of Omagalanga due to a lack of knowledge regarding advantages and disadvantages of both legal tenure rights which fall under the CLRA as well as about conditions and application procedure. Therefore, it can be assumed that the communication strategy guided by the Ministry of Lands and Resettlement (MLR) was not appropriate. This was also the result of an internal evaluation by the MLR of the land registration pilot phase by the end of 2009 (INTERVIEW KASITA, DEPUTY DIRECTOR OF LAND BOARDS, TENURE AND ADVICE, MINISTRY OF LANDS AND RESETTLEMENT, MARCH 2010). They came to the conclusion that the communication strategy regarding procedure and benefits of the land registration has to be improved inter alia by the following arrangements:

- Generation of a new vacancy within the MLR for an officer who is responsible for a new communication strategy regarding the information campaign in the course of CLRA implementation. Part of this strategy is, for example, a language shift from English to local language of the traditional authorities / headmen during the

information workshops which take place before the land registration starts in the particular area.

- GTZ International Services provides support to the MLR for example in terms of designing a new communication strategy for the land registration process which is embedded in the project “Support to Communal Land Boards”.

Another significant aspect why land users do not practice sustainable land use is a lack of knowledge. Information about how to improve land use effectiveness with and without financial investments and the possibilities or varieties of sustainable land use techniques is marginally existent.

In consideration of the discussion on a more theoretical level it can be assumed that the land use in the case study communities, in terms of population pressure, overexploitation and missing crop rotation, is unsustainable; but in the sense of cultivation, in the form of polycultures, organic fertilizer and non genetically modified seeds, it is already sustainable.

As mentioned under 3.4.2, it is not possible to evaluate in detail the influence of the CLRA on livelihoods of the people in Omagalanga since it was implemented recently in 2008/2009. The benefits of the new tenure system will not appear immediately but rather in long term. However, this will only happen if local land users are aware of their benefits and if they know how to use them in a sustainable way, which was not the case at the time of the evaluation. This implies a part of a new tenure system with secured land use rights:

- a financial basis based on alternative income opportunities to be able to, for example, pay the certificate fee for the tenure right,
- the knowledge about sustainable land use techniques and adaptation measures
- and also how to receive financial support, for instance, in the form of a microcredit as well as economic stability.

At this stage (2010) no significant difference became apparent between both communities with two different land tenure systems in terms of enhanced level of living and thus a reduction of poverty. But the 3rd research question can be answered as follows: Land registration and thus the legal implementation of tenure rights can contribute to enhance livelihoods and reduce poverty, but it is assumed that the three other conditions, which are required to transact investments, attend the process of land registration in order to approach the desired target.

4.2.4 Conclusion

In conclusion, it can be ascertained that the Communal Land Reform Act builds the foundation for “secure equal rights in terms of access and gender to communal land” and “a regulated allocation of land use rights (secure tenure)”. These benefits of the CLRA are so far unknown in the circle of small-scale farmers as seen in Omagalanga (belongs to the pilot area of CLRA). For the other two goals of the CLRA, namely “the promotion of economic and social development” and “support of environmentally sustainable use of natural resources”, it is not clear how they are going to be reached due to the fact that no contributing measures or, rather, strategies were implemented. The CLRA does not sufficiently consider national and global changes (e.g. climate change, population growth, low educational level, high HIV ratio) and is, therefore, not able to contribute adequately to the reduction of vulnerability for the land users of the Cuvelai Drainage. This leads to the conclusion that the CLRA, as it is currently designed, does not contribute to the enhancement of livelihoods and thus to a reduction of poverty for small-scale farmers.

To overcome vulnerability and achieve resilience it is necessary to change previous structures and livelihood approaches based on:

- the generation of employment opportunities, particularly for women and youth to reduce rural-to-urban migration patterns
- the diversification of income sources
- a more sustainable use of natural resources
- the promotion of adaptation strategies

Only due to the aforementioned measures will it be possible to promote economic and social development and support environmentally sustainable use of natural resources and contribute essentially to the enhancement of livelihoods and thus to a reduction of poverty for land users of the case study region.

4.3 Recommendations

The needed response would include the following measures: increase adaptive capacity, reduce vulnerability, invest in sustainable land use and enhance livelihoods of land users. Implementing these measures involves a combination of science, institutional, and policy innovations. This should be taken into account in national, regional and local strategies.

4.3.1 National Level

The national level addresses the Namibian government, particularly the MLR, development corporations, banks, insurance companies and non-governmental organizations. On the national level the following five key issues should be improved:

- Communication
- Access to Financial Capital
- Weather Insurance
- Capacity Building
- Monitoring

Communication

The communication process should be more transparent. Reasons and benefits of CLRA should be clear and communicated in a simple way with the help of improved communication strategies. It is therefore necessary to take the following steps:

- analyze the previous communication approach
- define and analyze the target groups (broad public, headmen / traditional authorities, farmer etc.)
- develop alternative communication strategies for each target group

The broad public, for example, could be reach by advertisements in radio, newspapers, TV and billboards. During information meetings for headmen and traditional authorities visual media could be utilized alongside presentations. The GTZ produced the documentary “More Security for All - Registration of Communal Land in Namibia.” This documentary, for instance, could be a helpful tool to explain the processes and benefits of the customary land right registration to the above mentioned target group. Farmers should be actively involved during the community information meetings regarding the land registration procedure. A drama group could demonstrate the background information and

benefits of the certificates based on the participation from members in each community. Furthermore, it is very important that for all communication strategies local languages, especially Oshiwambo, are used when addressing headmen, traditional authorities and farmers. In this way it will be possible to exclude language barriers. It would also be beneficial to integrate local people into communication strategy planning on the local level because of their knowledge regarding communication behaviors within communities. The adjusted communication of the CLRA is a prerequisite for its success. If the CLRA is appropriately communicated to the local people, this reform can be more successful in terms of implementation, acceptance and sustainability.

Access to Financial Capital

It is essential to provide a better access to financial capital for rural people of the Cuvelai Drainage. This would be possible with the help of micro loans from, for example, FIDES Bank Namibia Limited. The FIDES Bank Namibia Ltd. focuses on savings, credit and transfer services for small entrepreneurs and the self-employed people in rural and urban areas. The bank intends to fill a main gap in the Namibian banking market to provide reliable financial services for those citizens who are economically active but lack fixed salaries (FIDES 2009). However, the interests for loans are currently too high. Therefore, it would be useful to aim for the establishment of a cooperation between development cooperation's and the FIDES Bank Namibia Ltd. This could support adjusted interest rates thereby facilitating access to credits for farmers and subsistence farmers. Collateral, along with the access to financial capital, would be the provision for capacity building for a micro loan committee on the community level. This committee would be able to provide the necessary assistance for subsistence farmer applying for a micro loan.

Access to financial capital also signifies alternative income opportunities. This could be possible through Public Private Partnerships (PPP) in communal areas and especially in the Cuvelai Drainage. The basis for these partnerships is the conviction that if both parties pool their resources, they can achieve their respective objectives better, faster and at lower cost. Investment from the private-sector creates jobs, enhances know-how and generates income for the people in the particular region (GTZ 2002). Areas of PPP would be the production of crafts, natural cosmetics, irrigated agriculture or renewable energies to name a few. A successful example of income generation is the Oshikuku Basket Project which was established in Oshikuku village (see following excursus).

Excursus: Oshikuku Basket Project

This project is a small producer group connecting local weavers of Northern Namibia with business, wholesalers, and distributors both in Namibia and abroad. It was created in 2006 to utilize the traditional Namibian art of making baskets to economically and socially empower women. The project has grown from eight members to about 80 and still more are waiting to join. Monthly meetings provide a space where together the women negotiate prices and encourage standards of excellence, resulting in a local project with a global reach (THE OSHIKUKU BASKET PROJECT 2011).

This project shows that the region has potential to generate alternative income for local people. However, these kind of small economic initiatives need financial and organizational support in their early phase.

Weather Insurance

The development of a sound rural financial sector is an important factor when trying to close the income gap between rural and urban populations and ensuring socially balanced development, especially in developing countries. This includes supporting rural people in coping with climate risks by creating access to affordable and economically viable weather insurances (UNDESA 2007). As mentioned in section 3.3.3 “Extreme Weather Events”, the Cuvelai Drainage is particularly vulnerable to floods and droughts. So far weather insurance products do not exist in Namibia. The implementation of such a product is a long term target without immediate benefits for the most vulnerable target groups. However, in the long term, subsistence farmers would be better protected against extreme weather events in terms of financial aid. For a suitable weather insurance product it would be essential to develop an index-based micro-insurance on the basis of parametric triggers. This implies that farmers, for example, will receive insurance payouts once a certain trigger (e.g. a certain precipitation or water level for flood insurance) is reached (JIANG ET AL. 2010).

Capacity Building & Monitoring

Capacity building should be applied for subsistence farmers through workshops and / or trainings. Topics of capacity building should include the following:

- Application procedure for the Customary Land Right
- Application requirements for the Right of Leasehold
- Adaptation to extreme weather events (e.g. weather insurance, alternative cultivation practices including drought resistance crops or alternative infrastructure such as dams against floods or buckets for rain water harvesting for droughts)

When introducing adaptation measures on the local level, it is particularly important that these measures are cheap in order that subsistence farmers are able to buy them or, rather, that it is easy to produce/install and maintain practical devices for adaptation. It is otherwise very likely that farmers will neither buy nor utilize these adaptation measures.

In order to maintain a frequent and close overview of the implemented communal land registration, appropriate monitoring is of utmost importance. The impacts of the CLRA should be evaluated after 2-3 years and strategies should be improved corresponding to the evaluation.

4.3.2 Regional Level

The regional level addresses Communal Land Boards (CLBs) or, rather the new institution Regional Land Boards (RLBs) as well as Regional Councils of each constituency in the Northern Central Region. On the regional level the following factors should be improved:

- Communication
- Logistics
- Knowledge Exchange Support
- Monitoring

The staff of the CLBs should be trained in communication approaches appropriate for each target group.

The announcement of information meetings regarding procedure, benefits and reasons of the communal land registration in each community should be improved. It is important that community members are aware of the land registration process. Announcements should, therefore, be made by the headman with the support of representatives of the Regional Council, CLB and radio.

Support should be provided by the CLBs regarding the organization of knowledge exchanges between different communities about adaptation measurements in terms of visits in other communities and information meetings.

For the establishment of a communal land registration / adaptation committee in every community it would be essential to train two to three members of each community, along the lines of “support to self-help”.

To improve efficiency it is necessary to monitor the work of the CLBs / RLBs frequently.

4.3.3 Local Level

The local level addresses the inhabitants of communities within the Cuvelai Drainage. The following measures are recommendable:

- Communication
- Networking

Possible measures for improvement would be the knowledge exchange about topics such as land registration, adaptation against floods and droughts within and between the communities. Community meetings could provide an adequate venue for such knowledge exchanges. The presence of trained and trusted people in such meetings would contribute to favorable outcomes and support the flow of information. Field visits carried out within the framework of this study showed that some of the community members possess certain knowledge regarding adaptation measures. Community meetings could facilitate the exchange and distribution of the present knowledge.

Another improvement in the information and knowledge exchange would be the establishment of committees in every community. Committees could be formed regarding the respective topics of knowledge such as procedure and requirements of communal land rights, micro loans, weather insurance and further adaptation measures. These committees could then provide appropriate information and assistance while constantly improving their own knowledge through information provided by experts in training sessions and workshops.

Finally, it can be ascertained that the crucial point of Communal Land Reform is the appropriate communication of the subject. Therefore, it is particularly important to improve the knowledge and awareness of the reform and related topics on all three operating levels. This could be achieved with a comprehensive information-exchange network which provides an adjusted knowledge transfer for all involved stakeholders.

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Appendix

Appendix A - Semi-Structured Interview Guideline

Personal Data

| | |
|-----------------------------|-------------------------------------|
| Interviewer: | Date: |
| Type of actor: | Location of interview: |
| Age and gender: | Place of living: |
| Years spend in this region: | Years attended school: |
| Household size: | Number of earners in the household: |
| Family status: | |

Livelihood Assets

Human Capital

1. Describe your occupation:
2. Since when you are working in this field?
3. With what kind of activity did you start being involved in the sector?
4. What type of land use do you do?

| Type | Cultivation of Land | | | Livestock Breeding | | | |
|---------|---------------------|-------|--------|--------------------|------|-------|-------|
| | Millet | Maize | Others | Cattle | Goat | Sheep | Other |
| Yes = X | | | | | | | |

5. Which economical type of land use you do?

subsistence farming ____ cash crop farming ____ both ____ other ____

6. Where/Who do you sell your products to?

7. Where are your suppliers from (of seeds, livestock etc.)?

local ____ regional ____ nation wide ____

8. Do you mostly work with the same suppliers or do they change frequently?

If so, than why?

9. Where are your customers from (of seeds, livestock etc.)?

local ____ regional ____ nation wide ____

10. Do you mostly work with the same customers or do they change frequently?

If so, than why?

11. Where did you gain the necessary skills for your business activity?

| Type | Apprenticeships with relatives | Learning by doing | On the job training | Work- shops | School/ University | Other |
|---------|-----------------------------------|----------------------|------------------------|----------------|-----------------------|-------|
| Yes = X | | | | | | |

12. Do you feel that you are particularly lacking in a certain type of information?

13. If so, what kind of information is lacking?

14. Are there any impact on the work ability of the family member (pregnancy)?

15. Is anyone in your family infected by HIV / AIDS? yes/no ____ number ____

16. Is anyone infected by another disease? If so, what kind of disease and number?

Social Capital

17. Are you a member of a group or network related to your business activity?

18. If so, what is the name?

19. If so, what is the purpose/benefit of the group?

20. Which problems does the group face?

21. Are there any interactions/problems with public sector institutions (MAWF, MLR etc.)?

22. Do you receive any kind of support from an organization, i.e. NGO, public funding institutions?

23. If so, what support exactly?

24. Which kind of support do you want to get?

→ I.e. trainings in special skills like farming ____ or book keeping ____

→ Or financial support to purchase equipment ____ or other ____

25. Which business relations are the most important to you and why?

commercial buyer _____ private buyer _____ other _____

26. Problems encountered with other actors/stakeholders in the sector (business relations)?

27. What kind of problems?

28. Are the business relations unstable due to high fluctuation in the sector?

Natural Capital

29. Do you use land or forest for your business?

30. What is the size of your resource?

31. What is the nature of access rights (e.g. private ownership, rental, common ownership, leasehold)?

32. How secure are these rights?

33. Is insecurity hindering you from further investment in the development of the side?

34. Is this security increasing your investments in the development of the side?

35. If so, do you invest in sustainable development of the side?

36. Can these resources be defended against exposure by other people?

37. Why and how?

38. Is there evidence of significant conflict regarding resources?

39. What kind of conflicts is there?

40. How productive is the resource?

| Type | Soil Fertility | Structure | Erosion | Salination |
|-----------|----------------|-----------|---------|------------|
| High/Good | | | | |
| Middle | | | | |
| Low/Bad | | | | |

- 41. How has this been changing over time (e.g. variation in yields)?
- 42. Is there existing knowledge that can help increase the productivity of resources?
- 43. How versatile is the resource? Can it be used for multiple purposes?
- 44. If so, for which kinds of purposes?

Physical Capital

- 45. Number of people working in your business?
family member's _____ employees _____ seasonal workers _____
- 46. If fluctuation, why? and how do employees cope in the other time?
- 47. Where is your business located / in which area are you operating?
- 48. From whom do you lease or rent business location / resource?
- 49. If so, do you invest in a sustainable development of the side?
- 50. Do you have access to basic infrastructure and services, such as water, electricity, roads?
- 51. If not, is this hindering your business activity? yes/no _____ and How? _____
- 52. What kind of working equipment is used/needed for your business?
- 53. Which other equipment that you currently not own could improve your business (erosion protection, fertilizer etc.)?

Financial Capital

- 54. What level of investment is needed to run the resource/business?
starting capital _____ working capital _____
- 55. Ever thought of taking a loan or micro-credit to enhance business capacities?
- 56. Where would you turn / who would you address if you needed money?
- 57. Do you have access to microcredit institutions?
- 58. Do you know any institutions?
- 59. Do you know about bank restrictions?
- 60. Are you currently taking a loan?

61. What kind of a loan?
62. If so, for which reason did you needed a loan?
63. Is it a major risk to the viability of your business activity?
64. Do you have access to or are you granting the payment of advance money?
65. Maximum granted or received?
66. What are the major operational costs?
67. Do you have any other permanent or temporary sources of income other than this activity?
68. If so, what kind of source of income?
69. From your income, are you able to accumulate savings? In what form?

Perception of Climatic Conditions and Adaptation Context

70. Are the climate conditions (rainfall, temp. etc.) appropriate for the efficient use of you resource?
71. Are there any climatic variability's within the last years/decades (temp., prec., floods, droughts)?
72. If so, what?
73. Which impacts does this have on your business? (productivity, yields, water, income)
74. Do you adapt to these changes, if so, then how?
75. If not, then why?
76. Which impacts does extreme weather events have on you?
77. How do you adapt to extreme weather events?

Appendix B - Observation Guideline

| | |
|--------------------|-------------------|
| Name of Community: | Residential Type: |
| Name of Area: | Date: |

| Living Conditions | Observations |
|-----------------------------------|--------------|
| House location (plain, hill etc.) | |
| House/property (fields, etc.) | |
| House size vs. number of people | |
| Infrastructure | |
| Transport | |
| Distance to work | |
| Work equipment | |
| Other | |
| Social Conditions | |
| Social milieu | |
| Socializing | |
| Gender equality | |
| Other | |
| Weather Condition | |

Appendix C - Focus Group Discussion Guideline

1. What are your resources and what problems exist regarding them?
2. Are there any weather changes within the last decades?
3. Which impacts do weather changes have on you personally and your resources?
4. How do you adapt to these impacts? Do you do it alone or with the community?
5. Is there anything done by the regional council or do you get any support of them regarding climate adaptation, agriculture practices, infrastructure etc.?
6. What do you need for future adaptation to weather changes?
7. Do you know the land registration by the Ministry of Lands and Resettlement?

Appendix D - List of Interviewed Experts

| Name | Position | Institution |
|------------------|---|--------------------|
| Frank Gschwender | Advisor Natural Resources Management & Land Reform | GTZ |
| Gabriel Indombo | Development Planer for Communal Areas | MLR |
| Maria Kasita | Deputy Director of the Division Land Boards, Tenure & Advice | MLR |
| Marcel Meijs | Adviser Land Registration & GIS | CIM |

Appendix E - List of Group Consultations & Discussions Participants**1st Consultation:** GTZ Headquarter, Windhoek, February 2010

| Name | Institution |
|-------------------|--------------------|
| Christian Graefen | GTZ |
| Tanja Pickardt | GTZ |
| Martin Neumann | GTZ |
| Sonja Berdau | GTZ |
| Beata Xulu | GTZ |

2nd Consultation: Regional GTZ Office, Oshakati, March 2010

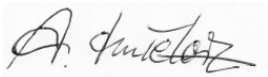
| Name | Institution |
|--------------------|--|
| Beata Xulu | GTZ |
| Werner Mbongo | GTZ |
| Ernst Mbangula | GTZ |
| Silvanus K. Uunona | IBMC |
| Peter Endjambi | Regional Councillor of Oshikuku Constituency |
| Elifas Ampueja | Small-Scale Farmer from Onashitendo |

3rd Consultation: Ministry of Agriculture, Water and Forestry, Windhoek, April 2010

| Name | Institution |
|---------------------------------|--------------------|
| Olaf Haub | CIM |
| Marcel Meijs | CIM |
| Jochen Baumgart | DED |
| Participant | DFRN |
| Christian Graefen | GTZ |
| Martin Neumann | GTZ |
| Konrad Uebelhör | GTZ |
| Daniel Kehrer | GTZ |
| Penna Louise Rebekka Shixwameni | GTZ |
| Jennilee Magdalena Kohima | GTZ |
| Jonathan Ziebula | GTZ |
| Kuniberth Shamathe | MAFW |
| Aune Amwama | MAFW |
| Katjizeu Mc-Cloud | MAFW |
| Maria Kasita | MLR |

Declaration of Independent Work on this Master Thesis

With this statement, I declare that this Master Thesis was prepared by me, only using the given references in this paper.

A handwritten signature in black ink, appearing to read 'A. Dunkel', is placed on a light gray rectangular background.

Berlin, 4th February 2011