LOCAL KNOWLEDGE OF NATURAL RESOURCES IN RURAL NAMIBIA: A CASE STUDY OF SALAMBALA CONSERVANCY IN EASTERN CAPRIVI.

by

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ABSTRACT

Historically, local communities have been excluded from the management of natural resources and their knowledge about their social and physical environment has been ignored and disregarded. The aim of this is study is to assess whether local knowledge is a significant resource and arbitrates in the management of natural resources in rural Namibia.

The study looks at the place and use of local knowledge in governmental and non-governmental organisations, especially in their rural development programmes. It also examines local knowledge in institutional management of natural resources. Lastly, the study assesses the significance of local knowledge in different land use systems.

The study found that local knowledge is widely acknowledged as an important source of information and a useful part of development. However, this recognition is often not translated into practice. The knowledge system is not recorded and available to people who are not members of the community, which limits the contribution it can make to natural resource management and rural development.

The study shows that local communities have a vast knowledge of the social and physical environment in which they live. Rural development organisations can make better contributions to rural communities by learning from them and using their accumulated knowledge and experience in their programmes. The recommendations made in the study will help rural development practitioners, researchers, academics and agricultural extension officials to realise that local knowledge is a resource which can be used to the benefit of the community and the environment.

PREFACE

The research described in the dissertation was carried out in the School of Environment and Development, University of Natal, Pietermaritzburg, from August 1997 to January 1998, under the supervision of Professor Tessa Marcus.

The fieldwork was carried out in Salambala, East Caprivi region in Namibia, with the support Professor K. J. Mchombu and regular contact with Professor Tessa Marcus.

This dissertation represents original work by the author and has not otherwise been submitted in any form for any degree or diploma at any University. Where use has been made of the work of others, it is duly acknowledged in the text.

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LIST OF ABBREVIATIONS AND ACRONYMS

AGRUCO	Agroecology University Cochabamba
CBNRM	Community-Based Natural Resources Management Programme
CGG's	Community Game Guards
IIED	International Institute for Environment and Development
IK	Indigenous Knowledge
IRDNC	Integrated Rural Development and Nature Conservation
MET	Ministry of Environment and Tourism
MRC	Multidisciplinary Research Centre
NANGOF	Namibia Non-Governmental Organisations Forum
NGO's	Non-Governmental Organisations
SPSS	Statistical Package for the Social Sciences
UNAM	University of Namibia

CHAPTER 1.

INTRODUCTION

Rural people in most third world countries possess an enormous wealth of local knowledge which is under-utilised. This accumulated body of experience and practice is a national resource which could contribute to the management of natural resources and rural development. Brokensha, Warren and Werner (1980:25) hold that local knowledge systems should be regarded as part of the national resource,

> "although so far all nations have virtually ignored this national asset".

The terms 'indigenous,' 'traditional' and 'local' knowledge refer to knowledge which is developed by the communities and passed on to successive generations over years in an effort to cope with their own social and physical environments. These terms are used interchangeably within this dissertation.

> "This knowledge is generated and transformed through a systematic process of observing local conditions, experimenting with solutions, and readapting previously identified solutions to modified environmental, socio-economic and technological solutions" (Brouwers, in Fernandez 1994:6).

Local knowledge is usually unique to a given community and culture, although it may have some components of outside influence. This makes local knowledge different from the international knowledge system generated through universities and research institutions (Warren et. al 1995).

Agenda 21, which set out an international programme of action to achieve sustainable development, was adopted during the Earth Summit of the United Nations Conference on Environment and Development in Rio de Janeiro (1992). This was an important turning point for governments, donors, Non-Governmental Organisations and development practitioners because it emphasises people-centred development, which is in harmony with the environment and is

participatory. Development, as it has been practised in many African and Third World countries, has not been sustainable in the past because it did not consult and recognise resources which were available from communities at grass-root level. As a result, people at grass-roots level were not involved in the planning and decision making processes (Kakonge 1995).

> "Local knowledge has been ignored in the past, and still is in other sections of development, primarily because of long-standing paradigmatic differences underlying knowledge systems" (Matose and Mukamuri, 1993:24).

Nevertheless, rural communities continue to use their knowledge systems in their daily lives. The problem of ignorance and disregard of local knowledge was recognised as a development issue in the 1980's by anthropologists and some rural development practitioners. This stimulated the creation of international indigenous knowledge centres and journals to document and disseminate information on these systems. Similar centres emerged in many developing countries to document and disseminate information of local knowledge in their countries, although such a centre has yet to be developed in Namibia.

This dissertation uses a case study of the Salambala conservancy community in Eastern Caprivi, Namibia to assess whether local knowledge is a significant resource and should arbitrate in the management of natural resources. The Salambala community was used because of their active involvement in the management of natural resources and their dependence on them. During previous fieldwork carried out by the researcher in the area, the community demonstrated a strong local knowledge of the natural available there (Mosimane, 1996). In assessing the place and importance assigned to local knowledge, the following issues were examined: 1) the significance of local knowledge in Governmental Organisations (GO's) and Non-Governmental Organisations (NGO's) and its use in the management of natural resources in rural communal areas; 2) the significance of local knowledge in local institutional management of natural

resources; 3) the extent to which local knowledge is used in the current land use systems such as harvesting of natural resources, crop farming, livestock farming; and 4) the role of local knowledge in the development of wildlife and eco-tourism.

Chapter 1 introduces the concept of local knowledge and the research project. Chapters 2 and 3 describe the study area and the methodology used in the study. Chapter 4 reviews the literature in relation to local knowledge. Chapter 5 describes the data collected during fieldwork. Chapter 6 analyses the findings of the study in relation to the literature and contemporary scientific and policy assumptions. Chapter 7 draws conclusions and makes some recommendations on the importance and kind of contribution local knowledge can make if it is accorded its true value and built in as a factor in development of rural areas.

CHAPTER 2

BACKGROUND TO THE STUDY AREA

2.1 INTRODUCTION

This chapter will introduce the study area, its climatic conditions, geographic location and ecology. It will further introduce the socio-economic conditions of the communities living in the study area.

2.2 NAMIBIA

Namibia is a large but sparsely populated country in the western region of Southern Africa. The population is approximately 1.6 million people who live on 824 295 km² of land. With 1.7 inhabitants per square kilometre, Namibia has one of the lowest population densities of the world.

Namibia is an arid to semi-arid country (97% of the total land mass), which experiences a dry, warm climate with a maximum rainfall during the summer and precipitation distribution that ranges from virtually zero in the Namib desert to around 600mm per annum in the northern regions. Drought and occasional flooding are considered to be part of the Namibian climate. Rainfall is not only generally low but also variable and unreliable (Jansson 1991).

Much of Namibia consists of the barely inhabitable Namib and Kalahari deserts. Four fifths of the best agricultural area is utilised by cattle ranches and commercial farming. This is sharply contrasted by the concentration of more than 60% of the population on a narrow strip in the far north in the Caprivi, Kavango and Ovambo areas, which represents only 13% of the total surface area of the country. One consequence of this colonially determined settlement pattern is serious environmental degradation (Eriksen in Fosse 1992). See figure 1.
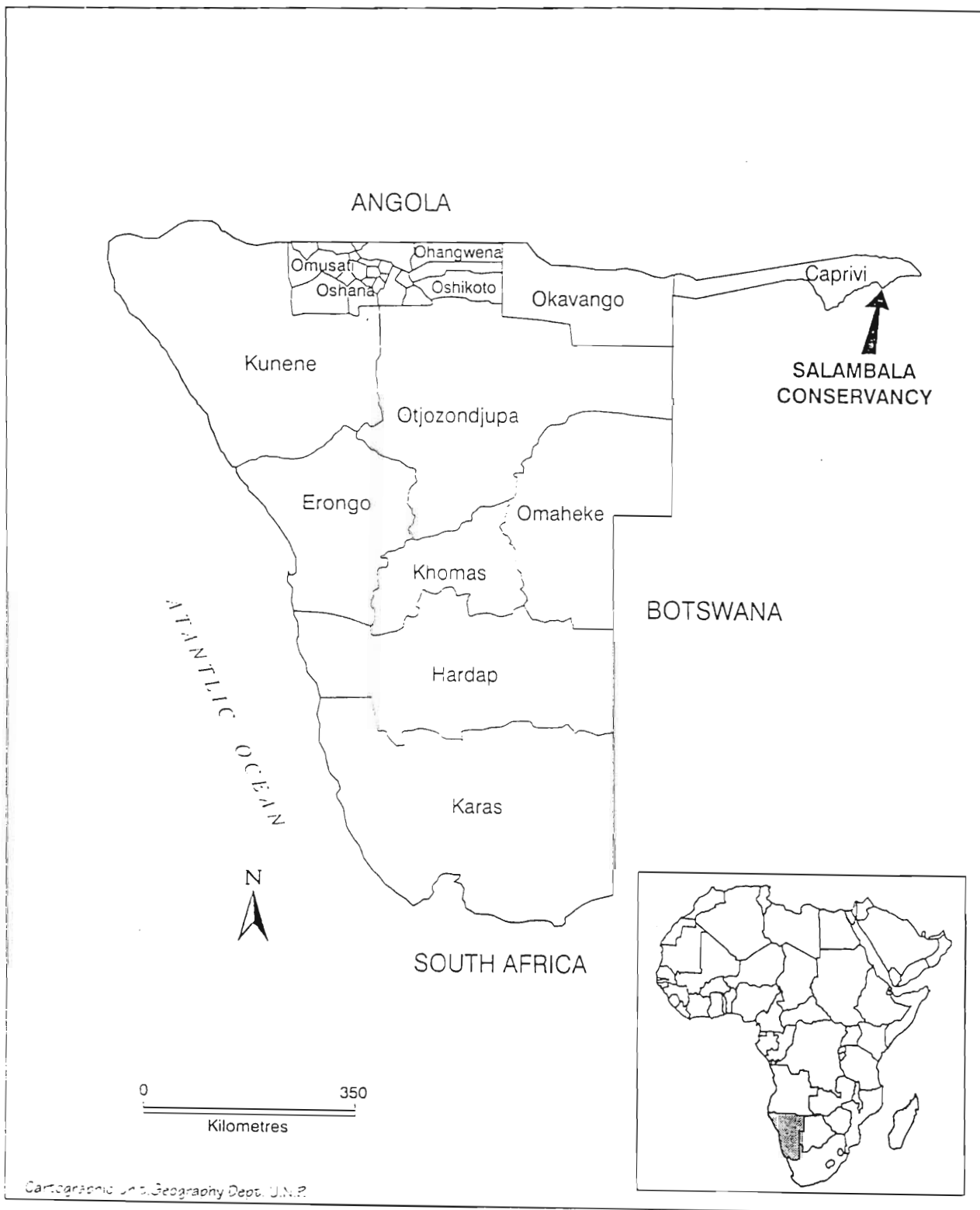
Figure 1 : Regional Map of Namibia.

2.3 CAPRIVI REGION

The geographical location of the former Caprivi Strip stretches between Angola, Zambia, Botswana and Zimbabwe. Caprivi is normally the best watered part of Namibia with the amount of rainfall increasing from west to east. The rainy season can extend to five months (November-March) and may reach a total precipitation of more than 600mm a year (Eriksen, in Fosse 1992). Rainfall is, however, extremely unreliable from one year to the next and resulted in drought, crop losses (estimated at 90%) and near starvation in the 1992 season. Although the Caprivi strip is bounded by rivers, water is as scarce a commodity as in the rest of Namibia, because irrigation, which could ease the effects of drought, is only poorly developed in the region (Fosse, 1992).

East Caprivi is bounded by the Zambezi River to the northeast and the Kwando-Linyanti-Chobe river system to the south and west. Only on its northwestern border with Angola is there no perennial river. Temperatures are among the highest in Namibia, ranging from a daily average of 10°C in winter to 39°C in summer. Caprivi's sub-humid climate dictates vegetation characterised by forest savanna and woodland.

The Caprivi region has a population of 90 400, on a total surface of approximately 19 532 kilometres, giving a population density of 4.62 person per square kilometre. The population density is considerably higher than the national average of 1.69 persons per square kilometre. There is a total of 18 000 households in the region, with an average household size of 4.6 (National Planning Commission, in Tveden et al, 1994).

The two main ethnic groups in Caprivi are the Mafwe and Basubia. The Mafwe represent the majority group. The only urban centre in the region is Katima Mulilo, the centre of all business activities and administration in the region. The

town serves as a major source of employment within the region, with government being the major employer.
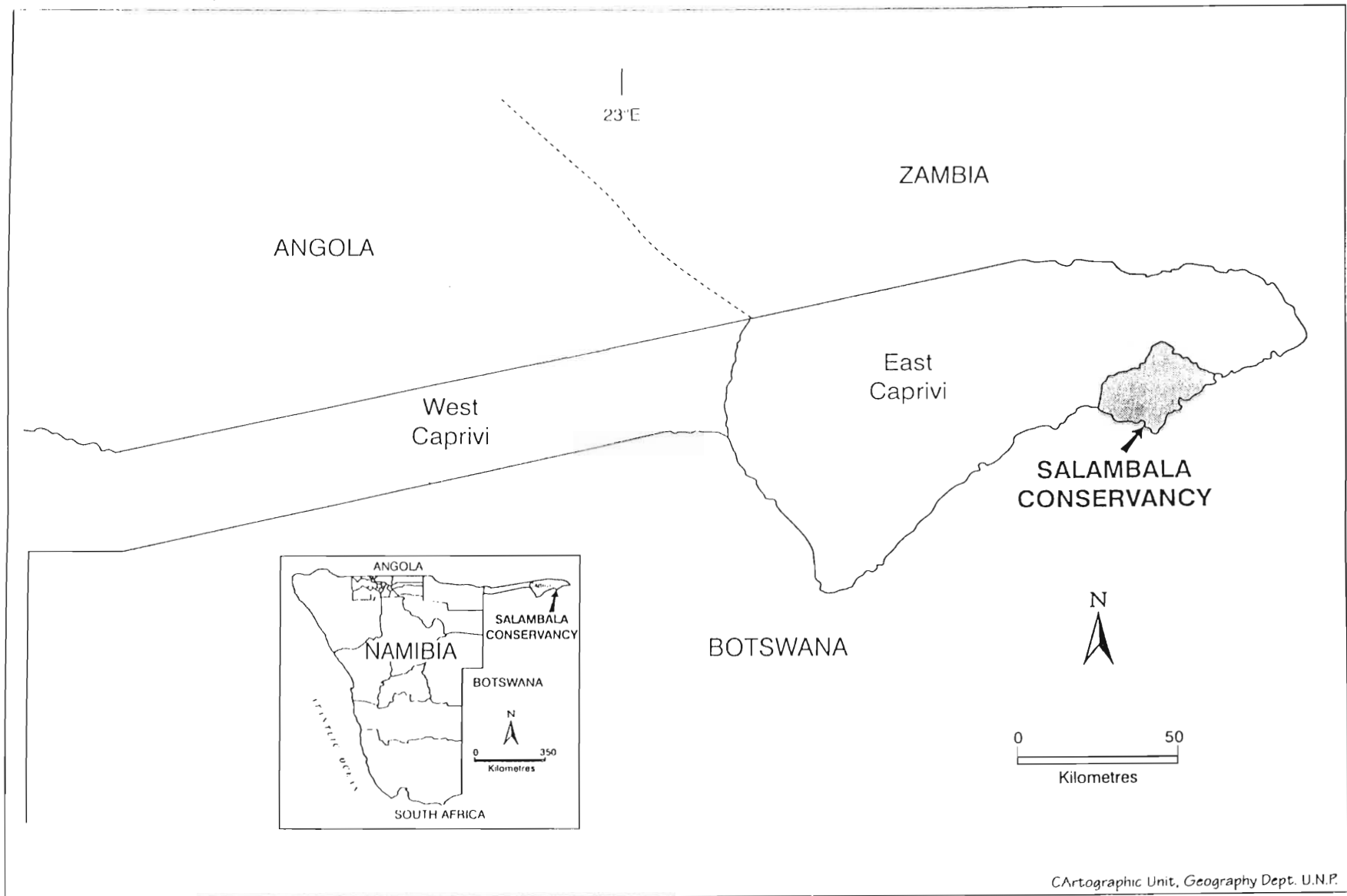
Figure 2 : Location of Salambala Study Area.

2.4   STUDY AREA

2.4.1 Geographic location and Ecology

Salambala Conservancy is in the Eastern Caprivi region, in the Katima Mulilo constituency (See Figure 2). The conservancy is dominated by dense to open woodlands, mixed with terminalia woodlands. The flood plains south, towards the Chobe river, are covered by grass. The boundaries of Salambala stretch from Bukalo village to Masikili village on the banks of the Chobe river in the north. The Chobe river, between Namibia and Botswana, forms the boundaries in the south, and the eastern boundary stretches from Masikili village on the banks of the Chobe down the Chobe river to the south. The Liambezi Lake flood plains (channel) form the boundary in the west.

2.4.2 Socio-economic

The social organisation of households is led by heads of households, who are either male or female. The traditional structures are still functional in the Caprivi region as people continue to live traditionally and respect their traditional structures (See Figure 3).
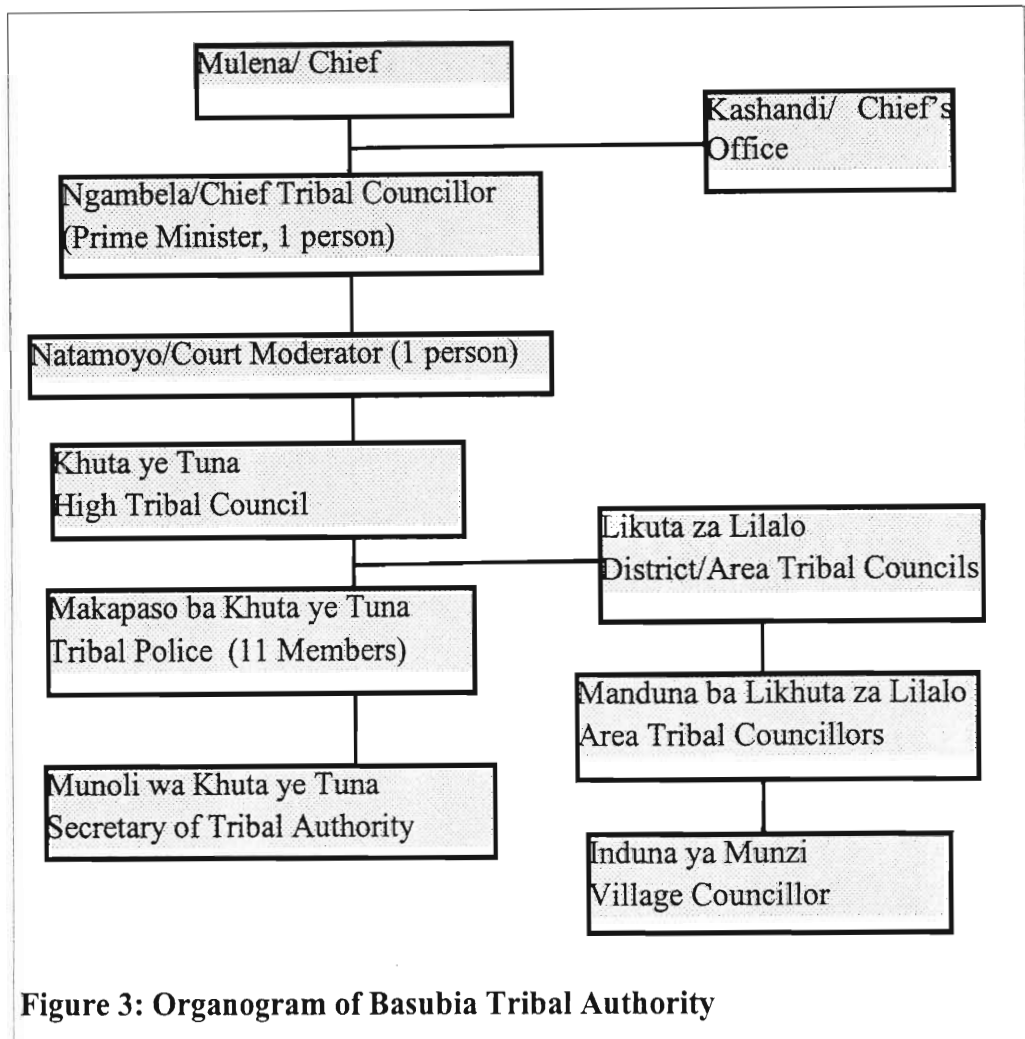
Figure 3: Organogram of Basubia Tribal Authority

Source: Likando E. (1989:104).

All members of the Salambala community belong to the *Khuta*. The highest member of the *Khuta* is the chief (*Mulena*), followed by the prime minister (*Ngambela*), the senior councillor negotiator (*Natamoyo*), and the headmen in all the districts (*Induna ya Silalo*) of the *Khuta* jurisdiction. At the lowest level are the village headmen (*Induna ya Munzi*). According to Wingerden (1996: 7), the chief's office, the *Kashandi*, forms the top of the hierarchy. It functions as a court of appeal and deals with the most serious cases such as murder, witchcraft, land disputes and opening an enterprise. Cases in which members of the royal family or council members are involved go directly to the chief's office (*Kashandi*).

The structures of the tribal authority are represented in all levels of the community. This representation makes the tribal authority available to all members and ensures broader consultation in all aspects of communal interest. Through these structures, some members of the tribal authority are responsible for environmental issues and disputes. For example, when there is a case of poaching in one jurisdiction, members responsible for environmental issues in that tribal authority will have to investigate the case and give feedback to the khuta. These people are particularly knowledgeable about traditional rules and regulations regarding environmental conservation and management of natural resources. The tribal authority, through its structures, is the custodian of local knowledge and sees to it that the cultural norms and values of natural resource management are maintained and passed on to each generation through cultural means. The tribal authority is actively involved in the allocation and management of land. It also used to control the hunting of wildlife and issued permits for cutting poles and use of other natural resources. Although the tribal authority has lost control over wildlife and management of natural resources, it still possesses a vast reservoir of local knowledge of these resources. The tribal structures and their members are centres of local knowledge and are therefore often more knowledgeable than ordinary members of the community.

The Salambala management committee is responsible for the management of natural resources and the introduction of eco-tourism to the area, which, it is hoped, will create employment and bring about development. The committee is composed of the tribal authority and community members who have any formal knowledge of environmental conservation and development, as well as people recommended by the headmen in their area because of their knowledge of the local environment and their leadership abilities. The tribal authority and the Salambala management committee are the only local institutions involved in the management of natural resources and the use of these resources for community development in the Salambala area.

The traditional lifestyle of the community is reflected in the economic status of Salambala. The area of Salambala is inhabited by the Basubia tribe, which continues to live a rural life. The people depend on livestock farming, crop farming and harvesting of natural resources. Most residents practise subsistence agriculture and are highly dependent on their ability to produce food from the land. Cash income is also very important because it provides security during drought. Households with some source of income represent 89% of the households in the study, while only 11% do not have a relative who has a source of income. Income is obtained from formal employment (e.g. teacher) and from government old age pension funds (Mosimane 1996). Decisions are made by older members of the family and people share all resources harvested among themselves. For example, they cultivate the same crop field and collectively share products from livestock and natural resources that are collected. The position of household heads as decision makers, in terms of land use and management of resources, makes them particularly knowledgeable in the community. They possess considerable knowledge about the land and natural resources which they have been using for years to feed their families.

The most common livestock in the Salambala area are cattle, although some households have goats and chickens. In most households, cattle are owned by an individual but the use of cattle products is collective. Livestock are used as a means of transport, to plough fields, for traditional rituals such as lobola and are a source of investment for the family in difficult years.

The main crops cultivated in the area include maize, sorghum, millet, pumpkin, beans and watermelon. All these crops are common, with the most favoured crops being maize, sorghum and millet which form the staple diet in Salambala. When there is a surplus, crops are sold to generate cash income for other needs. In addition, crops are used for traditional functions such as preparing home brew (tombo) which is also sold to generate income.

Different types of natural resources are harvested for domestic use. These include thatching grass, poles, fish, palm leaves and nuts, reeds, waterlilies, clay and veld fruits. Poles, thatching grass and reeds are used to build traditional huts and these are sold to members of the community who are unable to harvest resources themselves, to generate income for other households. Fish are caught from the Chobe River to supplement diets and sell. Reeds and clay are used to make mats and pots for own use and for sale as crafts. Some tree resources are used for traditional medicinal healing as well as for crafts to sell to tourists. Also, veld fruits are harvested for consumption and are a very important source of food during drought.

Within the household, family members are encouraged to look for employment and to become independent, although family ties and support are maintained. The members of the family who are employed provide support to relatives during environmental disasters such as drought. Income generated is spent on food, labour, school fees, clinics, transport, household necessities, savings and the purchase of agricultural equipment and livestock.

The generally low socio-economic status and lack of employment in the Salambala area has prompted the tribal authority to seek developmental support from donors and Non-Governmental Organisations. Although government departments, such as agricultural extension, environment and tourism have been actively involved in helping the community, there is still a lack of development and the community continues to depend on the state.

Some Non-Governmental Organisations have emphasised the environmental richness of the area in terms of biodiversity. They express the desire to conserve this biodiversity, while also improving the living conditions in the area. Other Non-Governmental Organisations, have been interested in improving the agricultural production of the community. These development initiatives provide a pool of governmental and Non-Governmental Organisations which are familiar

with local conditions and traditions of the Salambala community (see, Chapter 3, 3.2).

2.5 CONCLUSION

The climatic conditions of the study area give an indication of variabilty of environmental conditions. These conditions, the geographic location as well as the social and economic background of the study area underscores the dependence of the people on their immediate environment. This has been the case for decades and, as a result, people have accumulated a knowledge base through years of trial and error to meet the social and physical environmental challenges. Their knowledge of their own environment has been an inspiring source of information and an important tool for their survival.

CHAPTER 3.

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The aim of this study is to assess the significance of local knowledge as a resource and to determine whether it arbitrates in the management of natural resources. Questionnaires were used to generate quantifiable data of the general view of the sampled populations. The methods used to collect the data included structured and close ended questionnaires, as well as documentary information.

3.2 STUDY POPULATION AND SAMPLING

The study population comprised of Governmental and Non-Governmental Organisations, local institutions and household heads.

Different methods of selecting respondents were used for the three targeted groups in the study. Respondents for the Government and Non-Governmental Questionnaire (See Appendix I) were not sampled, but all organisations from a list of 15 were interviewed. The list was compiled by the Community Based Natural Resource Management Programme (CBNRM) of the Multidisciplinary Research Centre (MRC) at the University of Namibia (UNAM) from all the participants who are actively involved in natural resource management and implementation of rural development programmes. Governmental Organisations and Non-Governmental Organisations were targeted to assess the significance and use of local knowledge in natural resource management within these organisations. The researcher assumed this target group would have vast knowledge of local conditions and traditions because of their involvement in the development of Salambala community. Some organisations were targeted because of their involvement in natural resource management in other rural

communities.

As two organisations did not reply, the total study population of 13 comprised the following Government and Non-Governmental Organisations (one respondent each):

1.   Ministry of Agriculture, Water and Rural Development (2),

2.   Ministry of Environment and Tourism (3),

3.   Ministry of Local Government and Housing (2),

4.   Namibia Development Corporation,

5.   Namibia Community-based Tourism Association,

6.   Centre for Applied Social Sciences,

7.   World Wildlife Fund,

8.   Sustainable Animal and Range Development Programme and Integrated Rural   Development and Nature Conservation.

The study targeted members of the organisations who were in decision- making positions and able to reflect the position of their organisations regarding local knowledge. Respondents held the following positions:

1.   Chief Agricultural Extension Officer (1),

2.   Community-based Tourism Officer (1),

3.   Regional Representative (1),

4.   Business Advisor (1),

5.   Extension and Engineering Officer (1),

6.   Educationalist (1), Chief of Party (1),

7.   Technical Advisor (1),

8.   Chief Planning Officer (1) and

9.   Directors (2)

The sample was well balanced in Governmental and Non-Governmental representation.

There are only two local institutions (See Appendix II) which actively participate in the management of natural resources and because of their active involvement and experience have vast local knowledge. The positions of the members of these institutions as traditional leaders and experienced members of the community in natural resources management and the use of local knowledge made them potentially reliable informants. The institutions are the Tribal Authority (Khuta) and the Salambala Conservancy Management Committee. These institutions were targeted to explore the significance of local knowledge in local institutional management of natural resources. A simple random sampling was used to select respondents from these institutions. All the members of these institutions (60) were allocated numbers to give them an equal chance of being selected. All numbers were put into a hat and the 16 respondents were randomly selected from a total of 60 institutional members. The selected sample comprises headmen (Indunas) from the Khuta (81%) and village representatives serving on the Salambala Management Committee (19%). These two institutions work together with some members serving on both. The Khuta has greater authority, as it approves all the management plans of the Salambala Committee and is responsible for ensuring that they are adhered to.

A sample, for the Household Heads Questionnaire (See Appendix III) was drawn from a list of household heads (compiled by village representatives) living in and around the Salambala Conservancy. Household heads were targeted because they are land users and, as decision makers in their households, were regarded as likely to be more knowledgeable about the use of local knowledge. Each of the household heads was allocated a number to give all household heads an equal opportunity of being selected for the study. Systematic random sampling was used to select 60 household heads from a total of 800.

The sample comprised 58% male and 42% female, and was equally balanced below and above 60 years of age. Fifty percent of the respondents were below 60 years old and the others above. 66% of the sample consisted of illiterate

respondents with only 24% having a school education. Respondents with no education (41%) or incomplete primary school (25%) were considered to be generally illiterate. Those with complete primary (10%), incomplete secondary (7%), secondary (14%) and those who attended teacher training or other college (3%) were classified as literate. The respondents can also be classified as those who considered their way of life to be traditional (65%) and those whose way of life was a mixture of traditional and modern (17%). Only (18%) felt that their way of life was modern. The respondents main economic activities were the harvesting of natural resources (80%), owning livestock (93%), and growing crops (95%). Some practised more than one land use system or in fact, all three of them.

The term "household" in the study referred to a family unit living in the same house. Although each house in the clusters of houses is registered as a separate household, they function together as an economic and social organisational unit. Decisions are taken by the older members of the family and people share all resources harvested between themselves. For example, they cultivate the same crop field and collectively share products from livestock and natural resources collected.

In terms of the samples, the information gathered for the organisations can be generalised with a high level of confidence. With the exception of two Governmental Organisations, all Governmental and Non-Governmental Organisations responded. The same holds true for local institutions. A sample size of 60 household heads is small for the minimum needed to generalise. Both time and finances proved to be major practical constraints. Nevertheless, the results can be said to be indicative of the opinion and experience in the study area, although not achieving a 95% confidence level.

3. 3 RESEARCH PROCESS AND METHODOLOGY

This study used two techniques to conduct the survey in order to accommodate respondents who could not read, to ensure reliable responses and to accommodate timetables of busy administrators. The first technique, face-to-face interviews, was used for the household heads sample and interviews with local institutions. The second, that of the self-administered questionnaires, were used in the Governmental and Non-Governmental Organisations sample. The two techniques above were supplemented by documentary data.

3.3.1 Face- to-face interview

Face-to-face interviews were used to complete the Household Heads questionnaires. These methods were the most suitable because of illiteracy and communication gaps within the targeted community. There was a need for translation of questions into the indigenous language and to explain the questions clearly to the respondents. Unable to speak the local language, the researcher used local enumerators to complete the questionnaires. These enumerators were nominated by the Indunas in their respective villages and were expected to have Standard 10. The enumerators attended a full day workshop, discussing the questionnaire. At the end of the day, an exercise in administering the questionnaire was undertaken. The researcher went through the exercise with enumerators and explained questions where there was misunderstanding. The enumerators used the completed questionnaire as a guide during their fieldwork. After three unsuccessful visits in cases where the respondent was not available, the enumerator could interview the wife or an older member of the household present.

This method was also used to complete the Local Institutions questionnaires by the researcher, with the assistance of a translator. The questionnaires used for these two target groups were similar.

3.3.2 Self-Administered Questionnaires

The Government and Non-Governmental questionnaires were self-administered. This method was used because of the unavailability of the respondents in their respective offices. Most questionnaires were delivered to the respondents' offices, while some were faxed. This method allowed the respondents to complete the questionnaires in their own time and gave the respondents time to think about the questions and engage in consultation where possible, before responding to the questionnaires. The response from this target group was satisfactory. Only two organisations failed to complete the questionnaire, because the relevant persons were not available (the Directorate of Lands and the Directorate of Resettlement).

3.3.3 Documentary data

In addition to the primary data collected through questionnaires, relevant documents were identified to substantiate and supplement the findings of the study. These data were not developed for this particular study but were collected from the following sources:

❑ documents from the Directorate of Environment;

❑ workshop notes from World Wide Fund for Nature;

❑ archival material relating to the Tribal Authority; and

❑ data from a study done in August 1996 by the researcher in the same study area (Mosimane 1996).

3.4 DATA ANALYSIS

The raw data generated through face-to-face interviews and self-administered interviews were reorganised into a quantitative form and were coded and captured into a computerised database. The computer package used for analysing the data was the Statistical Package for the Social

Sciences (SPSS). Questions which had not been precoded were coded after data collection and a code book created. The code book describes the coding system and the location of data for variables in a format that computers can use.

The coded data was entered and checked for accuracy by cleaning the data for impossible codes and coding errors. The data was then run in tables according to variables and some important variables were cross tabulated. The tables were used to write a descriptive analysis of the study and then used to discuss the findings of the study. These findings were supplemented by documentary data from different organisations.

Modified Development Theory which takes into account both local people and the environment was used as a framework within which the findings are discussed.

3.5 LIMITATIONS OF THE STUDY

The concept "local knowledge" and the wide distribution of the sample population are some of the limitations faced by the study. The term "local", "indigenous" or "traditional knowledge" is abstract and difficult for the respondents to understand. The situation was further complicated by the translation of "local knowledge" into the local language. Respondents appeared to be confused about the existence of a knowledge system called "local", "indigenous" or "traditional knowledge system". This proved to be an insoluble problem and will need more time. Knowledge about the traditional way of life exists and people are practising their tradition, which most considered to be "general knowledge" because it is known to every member of the community.

The sample population was widely spread and the distances between different villages were great, along rough roads. Travel between different villages and the

non-availability of the respondents took up considerable time during the fieldwork. This limited the time available for the researcher to introduce the concept of local knowledge in the study population over a longer period to ensure proper understanding. This limitation did not allow the researcher to spend time with the community to observe and have informal discussions, which might have generated more information on some of the concepts. The researcher did, however, manage to collect valuable data despite the above limitations.

3.6 CONCLUSION

The three target groups gave good support to the study and the research methods used to conduct the study generated good results. The methods were well understood by targeted communities and reduced the implications the limitations had on the study.

CHAPTER 4

LITERATURE REVIEW

4.1 INTRODUCTION

This chapter reviews modified development theory, perceptions and findings of different scholars of local knowledge systems. Since the early 1980s, many scholars both internationally and in Africa have joined anthropologists in emphasising the importance of integrating rural people's knowledge systems into rural development programmes.

This review of the literature focuses on factors that have contributed to the disregard of local knowledge and on the role of local knowledge in rural development. It will also assess the role of local knowledge in land use and its impact on local people. Lastly, it will draw from examples in other countries, to illustrate the knowledge different land users have about their local environment.

4.2 METHODOLOGICAL FRAMEWORK

The findings of this study are interpreted using modernisation theory. However, it is essential to distinguish between classical modernisation theory and modified modernisation theory. Classical modernisation theory understood development to be aimed at enhancing the economic growth of Third World countries which could be achieved by acquiring the characteristics of the modern western world. Thus,

> " the purpose of the theory was to explain, and promote the transition from traditional to modern society. This transition was regarded as a process of traditional societies 'catching up' with the modern world" (Kiely 1995:37)

In other words, the assumption was that Third World societies had to modernise by adopting industrialisation. The basic assumption was that societies, irrespective of political affiliation or social context, tended to adopt similar forms of social organisation. Rostow proposed five stages of development, ranging from traditional (the lowest) to modern (the highest). This led to assumption that,

> "some of the fundamental parts in modernisation theory is the belief that the traditional cultural, social and cultural structures in the Third World preclude the growth of effective economic strategy" (Harris 1989:30)

In this approach, tradition and modernisation cannot co-exist. In this way, the theory tends to justify the power relations between traditional and western societies i.e. the Western World has better scientific knowledge and is superior in all respects and Third World countries, with their traditions, are seen as 'backward' and inferior, with no knowledge and always looking to the west for development. This led to the impression that development was only derived from the west. In this light, westerners had to define development, decide on its form and how it would be achieved without consulting the people who were being developed. The researcher does not agree with the form of development portrayed by the classical modernisation theory.

The researcher is, however, in agreement with a modified, contemporary modernisation theory. This particular theory is used to understand and interpret the information gathered for this study.

The new modernisation theory argues that tradition and modern can co-exist, and can comprehend and interact with each other. Tradition is not seen as an obstacle to development, but rather, its usefulness in promoting development is being recognised.

> "The new modernisation theory has taken a much closer look at what tradition is, how it interacts with western forces, and what role it has played in the process of modernisation. The intricate relationship between tradition and

modernity is important" (So 1990:86).

This theory attempts to show the beneficial role of tradition in development and as a result has opened a new research field. This study hopes to contribute to this new field by assessing the significance of local knowledge as a resource and whether it could improve the management of natural resources in rural Namibia.

The theory also allows for a shift from the general, abstract assumptions about development in Third World countries, to a more concrete focus on local issues of a particular community that is engaged in development. As a result, the theory does not assume that development is defined and initiated by the western world. The theory strongly emphasises that development can be achieved in many ways and that Third World people who are undergoing development can define their own development and contribute to its achievement.

The study is also conducted within the assumption of sustainable development. Literature on sustainable development in the 1960s was divided into environment and development. However, people realised that these two issues were interdependent. The World Commission on Environment and Development (WCED), also known as the Brundtland Commission, defined sustainable development as,

> "Development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Baker et al 1997:23).

This definition underscores the need to replenish and replace matter that is consumed so that society can continue to meet its needs in perpetuity. The definition embraces three basic components, namely, the economic, the social and the environmental, which are the foundation of sustainable development. This implies that sustainable development can only be achieved by keeping a balance between the three components. However, different interpretations of the three

components could result in different approaches and emphases on sustainable development. The definition used in the Brundtland Commission, placed sustainable development on the international agenda.

Sustainable development also assumes an approach that is people-centred, empowering and participatory. In support, Achterberg,argues that,

"Local participation in, and contribution to, the development of policies based on sustainable development is therefore crucial, as the co-operation of actors at the local level is vital if a project of sustainable development is to be realised" (in Baker et al 1997:23).

Local participation in sustainable development, will thus become a process of respecting and drawing on indigenous communities' own understanding of their interaction with the environment. However, a local participatory approach should be based on the principle that decisions are not made 'for' but 'by' the communities themselves, taking into account their own practices and diversities.

4.3 LOCAL KNOWLEDGE

In an effort to survive, local communities used traditional knowledge and skills they have acquired over years of trial and error. This knowledge is bound up in the social structures and culture of the community.

"Insufficient attention has been given to this local knowledge within the mainstream of agricultural development and environmental management. It has not been recognised as knowledge that contributes to our understanding of agricultural production and the maintenance and use of environmental systems" (Titilola 1994:19).

Rural communities in most third world countries have stores of local knowledge that have gone unrecognised and underutilised. Brokensha, Warren and Werner (1980:25) go as far as to suggest that local knowledge systems should be regarded as part of the national resource,

"although so far all nations have virtually ignored this national asset".
In most studies and development programmes, local knowledge is ignored or disregarded.

Not only does the literature observe that local knowledge is underutilised, Capellani and Cochabamba (1996) are of the view that other knowledge systems, especially modern scientific knowledge, often have biased perceptions of local knowledge. For example, modern scientific knowledge often regards local knowledge as negative, irrelevant, and not particularly as a useful source of learning or ideas.

"In fact, until recently, this knowledge has been under attack for being "backward", "static" and a "hindrance to modernisation"(Fernandez 1994:6).
These perceptions overlook the ability of local knowledge systems to be creative.

The ability of local people to stimulate change in response to the challenges they are facing has been indicated in new studies (Warren et. al 1995:xv). The dynamism reflects the ability of local people to evaluate new ideas and technologies from other knowledge systems before adopting and adapting them to the local conditions. Compas' (1996) study of cosmovision contends that, given that farming has always taken place under changing circumstances, local knowledge and tradition has always had to be dynamic. Nonetheless, local knowledge is seen to be limited because of its local nature and because the sciences have not recognised it.

Another factor which adds to the tendency to devalue local knowledge is the association between modern scientific knowledge and wealth, power and prestige. Chambers (1983) states that this association is a contributing factor to the belief

that modern scientific knowledge is superior to other knowledge systems. It is seen to be the only significant and reliable platform on which decisions can be based. This, however, has raised a more serious problem in that local populations themselves have now come to accept that there are different types of knowledge, and that their own is inferior (Howes 1980).

The literature emphasises that research on local knowledge systems of rural communities can help project planners to learn about local ideas and practices that are used in the management of natural resources. An understanding of how people define and perceive the social, political, economic and physical environment is important. Only then can new technologies and ideas be integrated into existing knowledge systems to address the identified needs and problems of the developing community better (Rusten and Gold 1995).

Nevertheless,

"recognition of the value of local knowledge in achieving sustainable development does not imply a wholesale rejection of modern technologies in agriculture. Nor should supports for the use of local knowledge be construed as a plea for an uncritical return to local technologies, when "better" social, economic and environmental alternatives are available. A knowledge of local techniques can help to identify practices suitable for adoption or adaptation, with a view to improving or reinforcing accepted procedures without destroying local environments and societies" (Titilola 1994:20).

4.4 DEVELOPMENT

"Development was misconstrued almost everywhere in Africa to mean 'change' and the 'adoption of modern and scientific methods'" (Ayittey 1991:424) .

In fact, in Africa, development was accepted to mean rejection of everything that

is African and traditional in exchange for anything foreign and modern. This resulted in the perception that anything traditional or African is "backward" and "primitive". Within this new paradigm the challenge for development practitioners is to use what is African and traditional to improve living conditions and increase agricultural productivity.

Development deals with people. Therefore, any development initiative has to take the social, economic, cultural and political environment of the people into consideration. Local institutions are part of the people's culture and social life and should be consulted in any development taking place amongst their community. There is also the view (Bonte-Friedheim and Kassam 1994) that development should be about material and social change in which old or traditional ways are combined with new ways.

Top-down development regarded local people as backward and primitive. It tended to apply modern scientific technological solutions to problems of poverty while undervaluing or disregarding local forms of knowledge. According to Chambers (1983) this made development a one-way monologue tool for disseminating modern scientific knowledge and ideas to local people, so that they could be developed. Knowledge used to flow in one direction only - from the educated to local people who were regarded as knowing nothing. Developers invariably failed to learn from local people.

The literature emphasizes that in Africa, a new vision of the development process is emerging. It reflects the social and physical environment of the local people and their relationship to nature. In this view, development is not simply a project handed down to local people by agencies from developed countries, but something in which their input plays a role (Titilola 1994). Local knowledge has becomes central to the success of development activities. Most development practitioners and agencies are starting to recognise the value of local knowledge in helping them work more effectively with local communities to solve

agricultural and environmental problems (Warren and McKiernan 1995). The challenge for development workers is to understand and accept local knowledge and to integrate this knowledge system into development activities. This will stimulate mutual respect and create an environment that is more conducive to learning and the exchange of ideas.

Kakonge (1995:19) argues that,

> "to achieve sustainable development in Africa, both local and external planners should involve local communities. This means they must accept that local knowledge is of inestimable value and that their role is not to initiate action but rather to ensure that the plans produced by the local community are as complete and comprehensive as possible."

Warren et al. (1995) are of the view that a relationship based on understanding and respect can help development practitioners and agencies create an environment conducive to participation and decision-making. The failure of development projects in the past hinges, in part, on ignorance of local knowledge and practices. Some development professionals have come to recognise its value and the need to document it. This is seen as an important way in which local knowledge can be made available to outsiders for integration in development programmes. It is also a way to give it value, to bring it to the same level as the dominant modern scientific paradigm. Local knowledge and other knowledge systems are often complementary, and in combination, could enhance the success of many development programmes (Babu et al 1995).

This said, there are often problems. Development programmes are often created outside the local conditions. Local knowledge is not part of programme conceptualisation, but is added afterwards to make it relevant to local needs and conditions (Farrington 1993). In such a context it becomes a far less useful and appropriate development tool. Gardner and Lewis (1996) caution that involving people at one level of the project (usually at the implementation rather than the

planning stage) becomes a legitimating exercise, rather than a formula for development. The aim, it has been argued, should be to encourage local people to identify their needs and aspirations and then initiate local solutions to solve these problems. Development organisations should be facilitators helping local people to realise their aspirations (Brokensha et al 1980).

> "The involvement of local people in all stages of development projects, from diagnosis to design, implementation, monitoring and evaluation is critical" (Matose and Mukamuri 1993: 25).

This view is shared by Gardner and Lewis (1996) who state that the supposed beneficiaries will only have an interest in making development projects intended to be for their benefit.

4.3 LOCAL INSTITUTIONS

According to Dommen, in Titilola (1994), through experience, a growing number of individuals and organisations in the field of development have come to appreciate the importance of working with and through local systems, instead of trying to work around them.

Local institutions in Africa were disregarded and seen as "too backward" or "too primitive" to be consulted on development issues and they were seen as inferior to Governmental and Non-Governmental Organisations (Ayittey 1991).

It is important to build on local knowledge and institutions, if Agenda 21 (a report of the Earth Summit of the United Nations Conference on Environment and Development) is to succeed. The report set out an international programme of action for achieving sustainable development in the 21st century. As Salih, in Kakonge (1995) argues, problems facing resource management are not only related to the physical environment and the solutions of modern scientific

knowledge. They derive from the social environment, the institutions and structures of local people and the communities' ability to accept new changes. In support Compas (1994) states that most traditional farming systems are the custodians of culture and knowledge which come from the lifestyle of each individual. All aspects of development, from decision-making to information, are therefore rooted in the social structure of the community and difficult to separate from that structure. It is, then, vital to understand that without due recognition of many aspects of rural sociological structure there can be no full understanding and utilisation of the valuable contributions local knowledge systems can make to development programmes. Gardner and Lewis (1996) argue that the emergence of local knowledge as an issue has encouraged some organisations to attempt to work with local or traditional institutions instead of creating new ones.

Kakonge (1995) argues that in most communities local institutions are already available, such as chieftainship and village councils charged with responsibility for conservation activities. To be successful, projects at community level should use these from the start. All aspects of project planning should be in accordance with local decision making and local conditions. These institutions need to be strengthened in terms of capacity to manage and where they do not exist, local opinion should be sought on how to proceed. These, developed over years of trial and error, have often crafted excellent natural resource management approaches, which are passed on through successive generations.

In many instances the traditional authority of Chiefs and headmen provided the cultural foundation upon which local knowledge is based. Many of the ceremonies and rituals depend upon the chiefs playing a leading role (Mchombu 1993). Mchombu suggests that local knowledge is transmitted and kept alive through the use of a number of strategies, the most prominent being folk tales, songs and poems, riddles, oratory and dance. From childhood people are taught what is permitted and what is not, which plants and trees they allowed to use and which they are not etc. This is a way of life for them.

There is a need to revive local methods of passing knowledge on to young people at the household level, and to make environmental issues part of that knowledge. Public gatherings can make information easily accessible to the majority of the people, especially in rural areas. Kakonge (1995:20) argues that,

> "overall, traditional management of natural resource should be revised, as part of empowering local communities to promote sustainable development. These methods need to be revived and used to conserve biodiversity where local knowledge is applicable to the local conditions."

4.6 LAND USE

Like development, land use is starting to involve local people in planning the use of natural resources. This trend has resulted in the increased use of local knowledge to select appropriate land use scenarios that meet the needs and aspirations of local communities and individuals. Land use planners have also realised the importance and the valuable contribution local knowledge can bring to the success of their planning. Land users are generally of the opinion that an understanding of the farming practices and the decision making processes of local people can enable a more rapid introduction of new technologies (Stroosnijder et.al.1994).

4.6.1 Local people

Gilmour et al (1987) are of the view that local people must be seen as people who know and have something to offer outsiders. This will help development practitioners and agencies to understand issues from local people's points of view and to come up with solutions which are more relevant to their circumstances. Development practitioners and researchers will then be able to integrate local knowledge and practices constructively with modern scientific knowledge. Local

people should not only be involved when issues and projects become complex and need a better understanding of local conditions. The partnership should be continuous and thus able to develop mutual respect and better working relations for the development and better management of natural resources (Messerschmidt 1995).

Local people, and small farmers in particular, represent the largest store of local knowledge in agricultural development. As John Hatch (1976:17) argues,

"we simply cannot afford to ignore this store of knowledge any longer."

It is a view supported by Chambers (1985:85) who states that,

"many of the practices of small farmers, which were once regarded as primitive or misguided, are now recognised as sophisticated and appropriate. So is the fact that it took organised agricultural research decades to realise that what appeared primitive and unprogressive was complex and sophisticated. Small farmers are, after all, professionals. They cannot afford not to be. And as professionals they have much to teach."

As Titilola (1994) underscores, approaches to agricultural development need to be built around the storehouse of knowledge and experience held by small farmers.

4.6.2 Natural Resources

The way local people used to harvest natural resources and integrate crops and wild plants is now being recognised by outsiders as appropriate to their local conditions. This was their way of exploiting vegetative land and climatic conditions to the maximum, while still being able to conserve the natural habitat and biodiversity (Alcorn 1995). It is important therefore, to bring local people with their vast ethnobotanical knowledge into a dialogue with modern scientists in crop science, botany and ecology. This will also help development practitioners and agencies, extension officers and development planners to understand local conditions and practices and, develop lasting solutions to local

problems and to plan better (see Richards 1985, and Lambert 1985).

"Those who have examined indigenous technical knowledge in depth have inevitably been impressed. In the sphere of "ethno-botanical" knowledge, for example, observers noted a range of different species which individuals with high level of consistency found between different members of the same group" (Howes. 1980:337).

However, Matose and Mukamuri (1993) emphasised that not all members of a community possess the same levels or types of knowledge, since their knowledge is shaped by the way they live and their positions in the community. This is evident in the medicinal knowledge that individual community members hold, for example, when compared to traditional healers. The same holds true for most other aspects of local knowledge (Howes 1980).

4.6.3 Crop farmers and Soil classification

Because agriculture is important for many peasant societies, they are able to characterise the soil on which they work in relation to other processes of crop cultivation, such as plant species, land systems and seasons (Sikana 1993). Soil and land types are another area where local knowledge is strongly based and soil types are usually distinguished by colour and texture.

Niemeijer (1995) argues that local knowledge of soil classification is very useful when a detailed inventory of soil resources is required, because it is often faster and cheaper than modern scientific soil survey techniques. The use of local soil terms also makes communication between farmers, extension workers and researchers easier, and in the process creates a conducive environment for local people to share and exchange knowledge equally. Another important factor is that local soil classifications can offer important insights into the land-use considerations of local people and the interactions between the plants and soil they are dealing with on a daily basis. The use of local informants could also

make up for the scarce scientific resources in many developing countries.

> "Thus, working with local soil classifications can make development work more effective, by providing a better understanding of the issues and options of the local farmers. It can also lead to a more thorough understanding of the local ecosystem, while offering a number of new angles from which to examine ecological problems" (Niemeijer 1995:20).

Researchers dating back to 1939 in countries such as Zambia, Sudan and Tanzania, have taken the initiative to study the local soil classification methods. These researchers have also tried to incorporate local soil names and classifications in soil maps for use in future planning. Kerven et al (1995) argue that local people's knowledge of soil classification lacks a comprehensive taxonomical hierarchy. However, Sikana (1993:75) contends that,

> "local soil categories have practical validity in themselves, without having to 'scientise' them by forcing them into the technical framework used by soil surveyors".

This view is shared by Salas, in Sikana (1993) who says that modern scientists should allow local soil classifications, which are sometimes considered to be social and invalid, to develop into a respectable and meaningful knowledge system that can contribute equally with other systems to the body of knowledge.

4.6.4 Livestock farming

Several studies, such as those by Fre (1993) and Mathias (1996), have shown that local small farmers have detailed knowledge of herbal medicine for treatment of certain livestock diseases and a seasonal rotation which helps prevent certain diseases.

> "A serious understanding of such knowledge, and the revelation of positive practices within it, is essential, since the use of ethno-veterinary knowledge is crucial to agricultural development if planners are to adjust themselves to the needs and priorities of local farmers. The term 'ethno-veterinary' in the

present context refers to the collective practices, concepts, perceptions and skills of treating livestock under conditions of low pastoral technology" (Fre 1993:3).

Studies by Halpin (1981), Maliki (1981), Sandford (1983) and Fre (1993) have underscored the importance of recording local veterinary knowledge systems to assess practices and skills which are suitable and appropriate. These ideas and practices could be integrated into other veterinary knowledge systems for the improvement of agricultural farming systems and development in general. This initiative is important, as in many parts of Africa veterinary skills are scarce, as are financial resources to buy modern medicines.

4.7 CONCLUSION

Generally, the literature argues for the combination of local knowledge and modern scientific knowledge because the two systems are complementary in their strength and weaknesses. However, in order to achieve this combination professional outsiders will have to begin by listening and learning from local people. A dialogue will then begin to take place which will be of benefit to all. It is also strongly argued that the two bodies of knowledge, in combination, may achieve advances which neither could alone.

CHAPTER 5

RESEARCH FINDINGS

5.1 INTRODUCTION

This chapter will present the findings of the study from Governmental and Non-Governmental Organisations, local institutions and land users such as resource harvesters, crop farmers, livestock farmers and the impact of wildlife and eco-tourism on other systems.

5.2 GOVERNMENTAL AND NON-GOVERNMENTAL ORGANISATIONS' APPROACH TO COMMUNITIES AND LOCAL KNOWLEDGE

It is important to gauge the success of Governmental Organisations and Non-Governmental Organisations in developing rural people. The involvement and realisation of the contribution rural people could make to the development programmes that these organisations bring to rural areas is a critical determinant or indicator of their success.

Asked whether they involve people in the communities in development programmes, both Governmental and Non-Governmental Organisations said they involve communities from the very beginning of the programmes, but the level of involvement changes at different stages. Both types of organisations said communities are involved in conceptualisation (10) and during programme design (8), although two Non-Governmental Organisations did not involve communities at this stage of their projects. With one exception, all government and Non-Governmental Organisations interviewed, said they did involve communities in the implementation stage. These responses suggest that both types of organisations consider the initial and implementation stages of the programme the

most important for community involvement. Involvement of the communities at the beginning of the programme and then leaving them out during the middle stages can, however, result in information gaps between the communities and the organisations implementing the programme. Similarly, the type of community involvement will differ the later it is included in the process.

In terms of levels of participation, two organisations, one GO and one NGO, said participation was very high. These organisations are jointly involved in the implementation of community based natural resource management programmes in Namibia. Three governmental and three Non-Governmental Organisations described levels of participation as high. Communities spend a lot of time and energy voluntarily in meetings and other activities to implement programmes. High participation levels are achieved because some organisations act as facilitators to assist communities to define their own vision and working objectives. It is generally believed that communities have a high level of participation in programmes that they identify with. Many programmes which have high level participation, are community based and, as a result, are perceived to be based on the needs of the people. Such programmes encourage people to take initiatives and make decisions based on their interests. Integrated Rural Development and Nature Conservation, for example, said it helps the communities to carry their initiatives out by giving them technical assistance and facilitation. The programmes which are implemented by these Non-Governmental Organisations are said to be staffed by local people, and outsiders only provide technical assistance.

Two Governmental Organisations and one Non-Governmental Organisation reported only average levels of participation, and attribute this to people being used to being told what to do. They said that most people only participate when they are going to benefit from the activity. They are interested in getting production loans, for example, but do not attend meetings organised by the organisation giving loans. Participation levels also differ from area to area and

they argue that only people who are really in need, participate actively. One Governmental Organisation which reported a low level of participation reported that community participation was low because there were no economic incentives in their programmes and because people did not have sufficient rules and regulations for forest and tree management. Another reason they gave for low participation levels was people's dependence on forest and tree resources for their survival and the absence of alternatives. The results of the study show that there is a link between the level of community participation and the involvement in different stages of the programmes as well as a link between their needs and perceived relevancy of the programme.

The involvement of local people in programmes gives them opportunities to participate by bringing their own ideas and knowledge to the programmes. Organisational perceptions of the ideas and knowledge communities bring to development programmes determine how they will receive and use them.

When Governmental and Non-Governmental Organisations were asked to describe the ideas and knowledge rural people bring to development programmes, both said they did not consider them backward. One Governmental Organisation regards "backward" as an inappropriate western socio-cultural construct and one Non-Governmental Organisation said no knowledge should be seen as backward. Rather, people tend to be practical by nature. Respondents from both types of organisations also said most modern conservation methods use traditional methods. One Non-Governmental Organisation, for example, said people are usually rational when you understand their context and needs. These arguments suggest strong support for the ideas and knowledge which people bring to programmes.

On whether the ideas and knowledge communities bring to development programmes are traditional, most Governmental Organisations (6) said people see and value resources in terms of cultural beliefs, they do not want them to come

to harm and these ideas and knowledge are natural. One Governmental Organisation said community practice is based on tradition, therefore their ideas and knowledge are also traditional. By contrast, some Non-Governmental Organisations (4) and one Governmental Organisation said local ideas and knowledge are not traditional. Rather, they are a "resource" of knowledge, values and customs which change and adapt. These organisations state that although traditional values play an important role in conceptualising activities, the ideas and knowledge are not traditional. Further, they argue that rural people embrace modern ideas which are useful to them. This implies that local knowledge incorporates modern knowledge and it is not purely local.

Most Governmental (5) and Non-Governmental Organisations (5) regard the ideas and knowledge communities bring to development programmes as a mixture of traditional and modern, with tradition constantly adapting. Two government respondents, however, perceived the issue differently, arguing that ideas and knowledge are not a mixture of modern and traditional because people initiate programmes with their own traditional ideas in order to help themselves. Most regard them, however, as influenced by local knowledge and, at the same time, mixed with modern scientific knowledge.

Respondents from all governmental and Non-Governmental Organisations said that what people bring to programmes is based on their own experiences. Their ideas are shaped by what they have experienced themselves and people like talking about their experiences. Ideas and knowledge are natural to people and are what people know and have. This knowledge is also a basis of survival for many people, and a product of experience. These organisations are also of the opinion that rural people use their ideas and knowledge on what works in their context. This implies that local knowledge is based on the collective past experience, tested over time, and adapted to the local environment.

Some governmental (2) and Non-Governmental Organisations (4) regard local knowledge as limited because it does not offer vision and lacks modern technology and exposure to international approaches and experiences. Moreover, they are often oblivious of regional and national contexts and suitable management in the light of modern day pressures. Nonetheless, most of the organisations are of the opinion that although limited, local knowledge is useful. A contrasting point of view was articulated by one Non-Governmental Organisation (1) and several Governmental Organisations (4): they contended that local ideas and knowledge were not limited because they were a product of experience which could be shared by different communities. They also felt that limited experience of outside worlds was balanced by deep local knowledge. In general, while there was recognition of the limitations of local knowledge, there was also a widespread recognition of its value in development. The general view of Governmental and Non-Governmental Organisations wass that there is a fair degree of openness and dynamism amongst local people. However, some expressed concerns about "hidden agendas" and an inherent conservatism.

All respondents regarded rural people's ideas and knowledge as helpful because people know their own needs, and because sharing creates room for exchange of ideas and appropriate experience. It also encourages co-operation and responsibility. Also, since people are familiar with their own areas and contexts they are able to familiarise and expose organisations to their limits and possibilities. One Non-Governmental Organisation regarded local ideas and knowledge as more helpful than any technical intervention, because local knowledge takes local social organisation into account and helps to adapt technology to a practical level. Most Governmental Organisations (5) and Non-Governmental Organisations (4) regarded local ideas and knowledge as worth considering in their own right, without modification. A few felt that this was only possible where local ideas were modified. The evidence here suggests that most organisations are open to incorporating local knowledge into their development programmes.

The relevance of the programmes that Governmental Organisations and Non-Governmental Organisations bring to rural people is also a key factor in determining development outcomes, including local levels of participation.

There was some acknowledged indifference to local knowledge and ideas, especially from Governmental Organisations. Most Governmental (6) and half the Non-Governmental Organisation (3) regarded the ideas and knowledge they bring to communities as appropriate to local conditions. One Non-Governmental Organisation was less categorical, saying that it is sometimes appropriate to the local conditions depending on the kind of development programme. As to the scientific nature of their ideas, the response was less firm, with only 7 of 12 organisational respondents feeling strongly that they introduced science to communities. Some Non-Governmental Organisations (3) and Governmental Organisations (4) said their ideas and knowledge were scientific and two Governmental Organisations and one Non-Governmental Organisation said their ideas were not scientific. Nevertheless, the 'truth' of science versus the seemingly experiential (therefore less valuable and valid) local knowledge, dominated the mind set of Non-Governmental and Governmental Organisations.

What is apparent, is that just as local people absorb and modify their ideas through their contact with development agencies, so these agencies too often modify and change their approach in response to local factors. A relative degree of openness and dynamism, therefore, does exist and is openly acknowledged by most organisational respondents. Most Governmental and Non-Governmental Organisations regarded their approaches and programmes positively, as relevant and helpful. A few felt that, while local people were likely to be more open, Governmental and Non-Governmental Organisations were often closed to local knowledge.

The relative weight attributed to local knowledge was viewed similarly across the organisations with no marked difference between governmental and non-governmental agents. Overall, four organisations, (two GO's and two NGO's) ranked the contribution of local knowledge to rural development programme outcomes as average. The remainder valued it as very important (6) or important (3). In their future work, most organisational respondents intend to use local knowledge in all three stages of programme development; from conceptualisation, through design, to implementation. A couple of organisations, (one governmental and one non-governmental) said they would use local knowledge only in implementation and all respondents expressed an interest in learning more about local knowledge and its implications for development.

This suggests a fairly significant change in approach to development, moving away from a model of imposing development programmes on rural communities, who would make little or no input into the programmes. The research suggests that most Governmental and Non-Governmental Organisations support integration of local knowledge into development programmes. They are also open to the concept of learning and knowledge being a two-way exchange rather that a one-way instruction.

5.3 LOCAL INSTITUTIONS

The *Khuta* and the Salambala Management Committee are the only two institutions in the Salambala community involved in the management and use of land and its natural resources. The Salambala management committee was established to manage natural resources on behalf of the tribal authority and has been involved in community-based tourism development projects. Some members of Salambala management committee also serve on the tribal authority in their villages. These institutions are represented in all the villages in and around the Salambala Conservancy.

Most members of the Salambala management committee are elected, while members of the tribal authority are appointed. The Salambala management committee members regard themselves as accountable to the communities where they are based, while *Khuta* members see themselves as accountable to the government. For the most part they regard themselves as traditional institutions, with some envisaging their role and responsibility as both traditional and developmental.

The tribal authority is the pillar of tradition, and in order to survive, must take the initiative and leadership in using the people's own knowledge. Their perception towards local knowledge inevitably impacts on community perceptions and their ability to use local knowledge. Their perception also affects the way Non-Governmental and Governmental Organisations view and integrate local knowledge into development programmes.

Most respondents said they use knowledge from their ancestors and that local knowledge is integral to their work. Local knowledge helps solve many problems, because people are still following traditional ways. However, some have become "modernised" and are not interested in traditional views and approaches. Several respondents described local knowledge as "backward". Others (8), held an opposite opinion, saying local knowledge was not backward because culture was the basis of a society and much of it was still useful in life today. With two exceptions, all respondents regarded local knowledge as traditional, because it was practising tradition.

By contrast, views on how to describe local knowledge were almost evenly divided. Most also regarded local knowledge as a mixture of modern and traditional, because the community is exposed to other cultures. A few respondents had a contrasting view, saying local knowledge is purely traditional and that to mix the two knowledge systems would devalue tradition and lead to improper practice. The study suggests, nonetheless, that local knowledge is not

purely traditional but has incorporated aspects of modern scientific knowledge. Many respondents also emphasised the openness and dynamism of local knowledge. This implies that local knowledge has been changing and adapting to local challenges facing the community. Local knowledge is regarded not to be limited because it is relevant to all aspects of their lives.

In many respects, local or tribal institutions are the custodians of indigenous knowledge. They preserve it and ensure that it is passed on from generation to generation. Respondents said that local knowledge is mostly disseminated through public meetings. However, the traditional way of passing on local knowledge, through initiation rites and ceremonies, is not being practised anymore and story telling and rituals are also gradually being replaced.

Local knowledge systems set and keep the norms of the community. Use is also made of taboos and myths to manage and control the environment. Local practices are regarded to be just as destructive to the environment as any other system. This implies that the use of local knowledge in the environment cannot be regarded as providing uncomplicated solutions to solving environmental problems. Rather, it can be seen as a complementary system which, with others, can help solve environmental problems.

Local knowledge determines how that society will manage natural resources. In the past, the *Khuta* used to control the cutting of poles by issuing permits to people. These were acquired from the village level *Indunas*. The system was used to ensure that people cut only the number of poles they needed. Violating the rules was punishable by a fine of one head of cattle. This latter control mechanism collapsed many years ago when the Directorate of Forestry took ownership and management of forest resources.

When asked how local knowledge contributed to livestock management, communities said cattle ownership and raising was always the responsibility of

the owner. The herders were responsible for herding cattle to better grazing ground according to seasonal changes and people used herbs from the forest to treat different diseases. This knowledge was lost and many people depend on bought vaccinations. Knowledge of seasonal or rotational grazing has been practised for years and is still actively used. In the winter, cattle are grazed in the valleys and on the maize straws in the crop fields. Cattle manure is used in the crop fields during winter grazing to increase the fertility of soil. In the summer, cattle graze at the rivers to keep them away from crops fields, which are normally not fenced. Rotational grazing is also used to avoid diseases such as foot-and-mouth and to give grass a chance to recover. People are not allowed to burn the forest because it destroys grass for cattle. If someone is found guilty of burning the grass or forest s/he is fined a cow which is slaughtered at the village *Khuta* and shared with all members of the community in the village. Meat is shared because grass is seen as a resource which belongs to all the people in the village.

People are able to identify fertile soil by looking at the colour of the soil, type of soil and the type of trees growing in that area. This knowledge is passed on to each generation and has become general knowledge among community members. Their own seeds from the fields are used because people believe their seeds are drought resistant. Hoes are used to till the soil to avoid erosion but this is slow and too labour intensive. Oxen are used to plough big fields. These methods of cultivation may also reflect different socio-economic conditions in the community.

Land is communally held and allocated to each family. The user-right is inherited generationally. Each family is given a plot of land to cultivate by the *Mulena* (chief) and part of the land is left aside for natural resources. The *Mulena* is the sole custodian of the land on behalf of his people. Land is used individually for ploughing, and communally for grazing cattle.

In terms of wildlife conservation, people may only hunt with permission from the Khuta for subsistence rather than commercial purposes. Hunting small animals, such as hares, does not require *Khuta* permission and these animals may be caught for the hunters' own use only. All hunting sessions for big animals are authorised by the *Mulena* only, and some big species, such as elephant, hippo, giraffe and rhino, are reserved for hunting by the *Mulena*. Problem animals, such as predators and elephant, which destroy crops, are hunted as a measure of controlling the problem. Permission to hunt big animals is authorised during the ploughing season to protect fields, because people believe animals won't come to the fields when they are hunted. Laws regarding wildlife and nature conservation are not written, but are passed on orally and through practice from one generation to another.

The institutions rank local knowledge fairly highly and would like to integrate it in development programmes. The tribal authority and Non-Governmental Organisations are expected to take responsibility for integrating local knowledge into development programmes. Local knowledge can be integrated into development programmes by knowing local experience and enforcing traditional laws through cooperation between the Non-Governmental Organisations and the community in programme implementation. Training the community to manage their own projects and educating the younger generation about local knowledge can contribute to a smoother integration of local knowledge in development programmes.

5.4 LAND USE

The land use systems presently in practice are important to determine what shapes and informs local knowledge. Respondents mentioned more than one land use system - namely, livestock farming (93%), harvesting natural resources (80%) and crop farming 94%, with most practising all three. Documentary sources of

information on the impact of wildlife and eco-tourism on other systems and the use of local knowledge will be presented.

Livestock farming is a widespread practice in the community. It is an important source of income, security and wealth accumulation. Knowledge of livestock farming is extensive across all age groups, with younger people tending to introduce some modern techniques to improve productivity.

Natural resource harvesting, on the other hand, involves fewer members of the community. This knowledge is not recorded and is held by the individuals who practise it. Those members who do not harvest natural resources have lost this knowledge. Crop farming is a major source of survival in the community. Failing to produce enough for the family means failing to feed your family. Local knowledge of this land use and the ability to integrate new techniques is therefore vital for the survival of households.

When asked how they would describe local knowledge, more than half the livestock farmers (56%), natural resources harvesters (54%) and crop farmers (55%) viewed it as backward, because it is not commercially driven and is oriented to the past and to traditional systems of thought. Furthermore, local knowledge is not considered progressive as it is outdated and is being replaced by modern technology. The remainder (± 45%) said local knowledge was not backward because it is still following culture and is useful and relevant to today's life.

All land users perceive local knowledge to be traditional. It is integral to people's culture. People trust local knowledge more than scientific knowledge. People still depend on nature and local knowledge suits the environment and is appropriate to use. This said, approximately three-quarters of the respondents in the study [livestock farmers (73%), natural resources harvesters (74%) and crop farmers (75%)] said that local knowledge was a mixture of traditional and modern

because people were exposed to other ways of doing things. The remaining (±25%) thought it was not a mixture of modern and tradition, and largely wanted to disassociate themselves from a practice they regard as backward.

For most livestock farmers (82%), natural resource harvesters (83%) and crop farmers (80%) local knowledge was based on community experience derived from their ancestors, their daily survival activities and traditional laws. A quarter of livestock farmers, natural resource harvesters (23%) and crop farmers (23%) regarded local knowledge as limited or irrelevant to modern life. The rest of the respondents regarded it as relevant today, since people (± 75%) still followed traditions.

Views of land users were consistently divided between a majority 70-77% who saw local knowledge as a heritage, useful and appropriate, and a minority (30-23%) who regarded it as inappropriate, closed and backward. Land users largely perceived local knowledge as most appropriate to livestock farming, although it was seen to be valuable in natural resource harvesting and conservation. However, crop farmers said local knowledge was just as useful in protecting nature. Livestock farmers' preference for application in livestock farming reflects their interests and field of expertise.

In general, local knowledge is valued and used on a daily basis. Livestock farmers kraal livestock at night to protect them from predators. Cattle herdsmen are responsible for herding cattle to good grazing areas and sufficient water. In case of disease several herbs are used in drinking water to prevent or treat diseases, and snake bites are treated by giving cattle a solution of ash and water to drink. Natural resource harvesters said people traditionally knew they should only cut essential trees according to season, and burning was not allowed unless specified. Cutting of poles is controlled through a permit system from the Khuta and only specific types of trees can be used at a certain period of the year for a particular purpose. Other resources can be harvested at any time for own use.

During a group discussion with crop farmers they generated a very clear calendar of their activities throughout the year. The routine is set out in Table 1, taking into account seasons and soils, and is regarded as a system of farming developed through generations.

Table 1: Seasonal Calendar of Crop Farmers

Month	Activity
January	Weeding using hoe for maize to grow well
February	Maize has grown, no need to weed
March	Resting period for the farmer
April	Renovating or building new granaries. Cut poles, reeds and grass to make granaries.
May	Start harvesting
June	Harvesting
July	End of harvesting
August	Resting period for the farmer.
September	Prepare crop fields by cutting bushes and grass.
October	Start to plough, using hoe, oxen or hire tractor from government.
November	The best time to plough - Time for more rain.
December	Ploughing

Describing the ideas and practices that development programmes bring to rural communities, nearly three quarters of all land users viewed them as appropriate to local conditions, but they did not necessarily see them as scientific. Livestock farmers (55%), natural resource harvesters (43%) and crop farmers (51%) said they were not scientific. Rather, they were viewed as experience derived from the best practice.

Respondents were evenly divided between those who saww development programmes as indifferent to local knowledge and those who did not. Most

regarded the ideas and practices of development programmes as open and dynamic, as well as being helpful and useful, although two fifth of the respondents perceived them as being difficult to put into practice. Most valued local knowledge highly or very highly.

A majority of respondents [Livestock farmers (77%), natural resource harvesters (81%) and crop farmers (75%)] were satisfied that development programmes were open to their ideas. All respondents regarded local knowledge as useful in development programmes.

In summary, from the perspective of land users, development programmes generally were appropriate and useful and did consider local knowledge, although to varying degrees. Land users were less confident about the way local knowledge and conditions are taken into account in relation to scientific ('correct') farming practices.

Land users have highlighted the usefulness of local knowledge in development programmes but the integration of the knowledge system must be initiated and implemented by the stakeholders. When asked who should take the responsibility for integrating local knowledge into development programmes, livestock farmers, like natural resources harvesters, did not put the responsibility on a specific institution. All land users suggested a range of preferences from tribal authority, Non-Governmental Organisations, donor agencies, specialists in the community or a combination of all. There is greater confidence in tribal authorities and Non-Governmental Organisations and less confidence in donor agencies and specialists.

5.5 WILDLIFE AND ECO-TOURISM

Data on this land use system reflects documentary material made available to the researcher by various Non-Governmental Organisations and Governmental Organisations implementing programmes in the Salambala area.

In the past, conservationists sought to separate local people from wildlife by creating game parks and reserves, or conservation islands. Local people were seldom consulted in the creation of these areas, and were sometimes forcibly removed from newly proclaimed parks. Animals such as elephants could not be contained in these areas, spilling into neighbouring farmland and creating conflict with local farmers. In the past, rural communities had well-established natural resource and wildlife management systems based on religious beliefs, the rights of Chiefs, cultural values and ownership of resources. Modern conservation approaches today recognise the need to involve local communities in conservation. It is argued that if local communities have control over the use of resources and can derive direct financial benefit from these uses, people will have an incentive to use the resources sustainably (MET 1995).

Through partnership between Governmental and Non-Governmental Organisations and local people, Namibia's Community Based Natural Resource Management Programme (CBNRM) was established. The programme is built on a grass-roots approach and assumes constant participation of the communities to steer the individual programmes being implemented. The CBNRM programme has paved the way for wildlife and eco-tourism as a new land use system introduced into the area as a way of diversifying livelihoods and land use. The *Khuta* realised the potential of Salambala Forest to carry diverse and dense populations of wildlife and decided to use the uniqueness of the area to exploit opportunities associated with the growing Namibian eco-tourism industry.

The Bukalo Tribal Authority decided to establish a conservancy in and around the Salambala forest and to manage the area for the return of wildlife. The objectives of the conservancy are:

❏ to renew and strengthen cultural linkages between future generation and wildlife;

❏ to increase the ability to generate income and employment through activities, such as;

     i) tourism enterprises

     ii) safari hunting

     iii) game capture and sale;

❏ to manage the natural resources of Salambala better; and

❏ eventually to create development opportunities for the people surrounding the Salambala Conservancy (Mutwa 1997).

Another objective is to integrate local knowledge systems into the programme. Community members who have extensive knowledge of their environment and wildlife habitats are employed in the Community Game Guards (CGG's) programme. They monitor the movement of wildlife and protect wildlife against poaching. The CGG's programme provides a mechanism for local people to participate actively with the government in managing natural resources. The most important feature is the ability of the programme to harness the store of local knowledge people have and to integrate that knowledge into modern conservation.

There is, nonetheless, a tension. The introduction of wildlife and eco-tourism competes for available land with the existing systems. People have to give up part of their grazing and crop lands. Also, a recent study (Mosimane 1996) revealed that 99% of respondents lost crops to wildlife in 1994, with 50% experiencing losses more than three times in the same year. Crops were destroyed by buffalo, elephant and small mammals, such as springhare, porcupine and monkeys. Similarly, predators also affected livestock holders. In the same study, 61.5% of

respondents said they had lost two head of cattle to predators in the previous year. The introduction of wildlife as a land use system therefore increases the number of predators in the area and as a result, increases livestock losses. In the long term this problem is likely to increase. These problems notwithstanding, it is argued that the long term economic benefits outweigh the current agricultural loss the community is experiencing (Ashley and La Franchi 1997). Wildlife and Ecotourism, are therefore, projected as a viable way of diversifying the current land use system in the area. The most important question remain however, who will benefit from the diversification?

5.6 CONCLUSION

The findings of the study showed that government and Non-Governmental Organisations, local institutions and land users are very positive about the role of the local knowledge systems. Generally, respondents did not have negative perceptions about their local knowledge systems and would like their knowledge system to be valued and given it rightful position. Government and Non-Governmental Organisations were willing to use local knowledge in development programmes they are implementing. Local people believe local knowledge can make a contribution in their development and the management of the environment and natural resources in particular.

CHAPTER 6

THE ROLE OF LOCAL KNOWLEDGE IN DEVELOPMENT IN THE CAPRIVI REGION

6.1 INTRODUCTION

What do the findings of the study mean for the place of local knowledge in development? In this chapter I will discuss some of the issues they raise.

6.2 LOCAL KNOWLEDGE

The community of Salambala has knowledge of the local area in which they are living. In their effort to make a living this community utilised and still continue to utilise local knowledge and skills they have developed over centuries through trial and error. Titilola (1994) strongly emphasises the importance of local knowledge to the rural people. The traditional lifestyle of Salambala people and their reliance on subsistence agriculture is an indication of the vast knowledge this community possess.

The Salambala community land users, government and Non-Governmental Organisations and the local institutions, for the most part had positive perceptions of local knowledge as illustrated in figure 4.
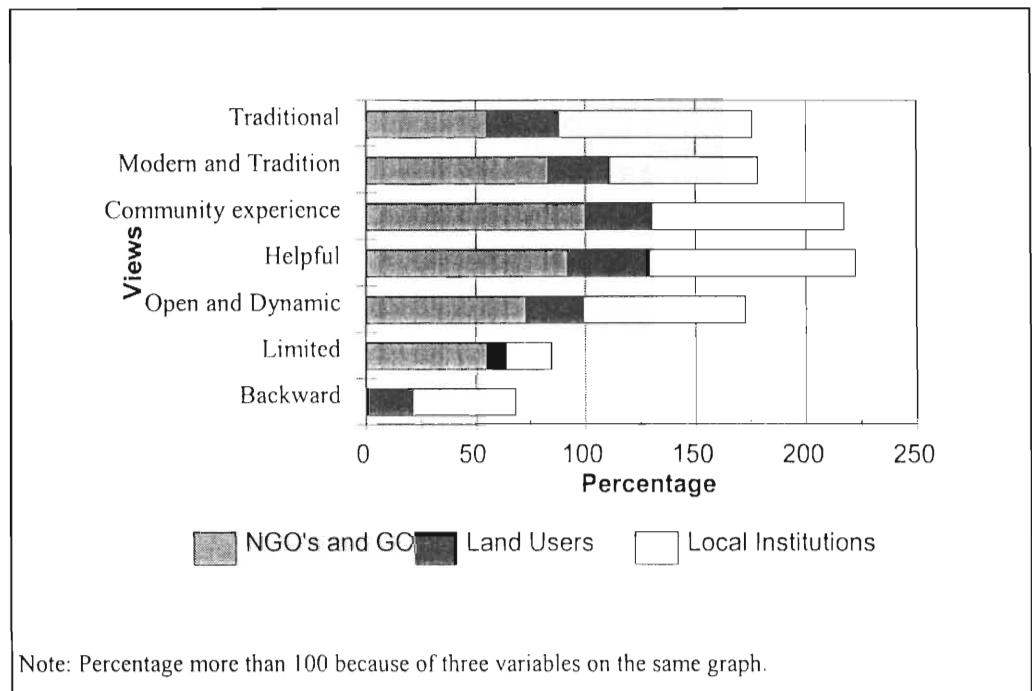
Figure 4: Summary of Views About Local Knowledge

Governmental and Non-Governmental Organisations, such as development practitioners and agencies, and extension workers, are often blamed for failing to recognise local knowledge and the contribution it can make to rural development. These organisations are also regarded to be biassed against local knowledge and to have negative perceptions. The study established that government and non-governmental agencies in the Salambala area of Namibia, at least in theory, are not biased against and do not have negative perceptions towards local knowledge. The findings suggest, most part, government and Non-Governmental Organisations appear not to perceive local knowledge as "backward" and "static" as the literature suggests. The study did find, however, that a substantial proportion of the land users and, representatives of local institutions consider local knowledge to be backward. This perception supports the statement made by Howes (1980) that like many rural communities in third world countries the Salambala community, regards their knowledge system as inferior to other knowledge systems.

At the same time respondents make a strong link between local knowledge, tradition and the community. The dynamic nature of local knowledge was also emphasised by Warren et.al (1995). The study establishes that the majority of the respondents (as shown in the figure 4), perceive local knowledge to be open and dynamic and not limited. This view is strongly supported by a Non-Governmental Organisation which holds that although local knowledge is limited, by locality and it's lack of experience to regional, national or international pressures and priorities, it's depth outweights against the limits of it's generalis ability. Moreover, the majority of respondents do not regard local knowledge as being isolated from other systems. Rather, they realise that it is influenced by and does accommodate other systems of knowing and doing. The figure also illustrates that land users, local institutions, government organisations and Non-Governmental Organisations are very positive about the contribution local knowledge can make to rural development, and helpfulness to them.

The respondents in the study recognise and realise the contribution and role of local knowledge in rural development and its meaning to the local people. The implication for rural development practitioners is clear, that it would be unwise to ignore a knowledge system that is regarded to be helpful by local institutions as well as land users, government and Non-Governmental Organisations. The shift to this way of thinking in Namibia can be attributed to experiences development organisations have acquired in previous development projects in Namibia, as well as in other countries, the adoption of Agenda 21 at the Rio Summit (1992) and the impact of independence in the country, with it's emphasis on grass-roots consultation and involvement.

6.3 GOVERNMENT AND NON-GOVERNMENTAL ORGANISATIONS AND RURAL DEVELOPMENT

The study assessed government and Non-Governmental Organisations involved in rural development against a background of top-down development, which regarded rural people as backward and primitive, and tended to apply western technology solutions to problems of poverty while undervaluing or disregarding local forms of knowledge. The results in figure 4, illustrate that government and Non-Governmental Organisations do not regard local knowledge to be backward and realise the contribution it can make in rural development. Rural development programmes in Namibia strive to follow a new vision which reflects different cultures and their relationship with nature. According to Conway and Barbier, in Titilola (1994:20),

"development is not simply a project handed over to local people by agencies from developed countries, but is something in which their input plays a central role".

Government and Non-Governmental Organisations involve or expect to involve communities in programmes especially in design and in implementation. Involvement of this nature is critical and is the key to the success of development programmes. This view is strongly supported by Gardner and Lewis (1996) and Matose and Mukamuri (1993) who contend that only with the participation of supposed beneficiaries in the planning and implementation of the projects intended to benefit them, will the beneficiaries have any real interest in making development projects succeed. However, the study shows that the involvement of local communities in programme design and conceptualisation is lower than in other stages of projects, reinforcing Gardner and Lewis's (1996) caution that some projects have an agenda of involving local people at one level of the project (usually at the implementation rather than the planning stage) to legitimise decisions which have already been taken.

Rural development projects in Namibia acknowledge that local knowledge is important if development activities are to be successful. As in many other developing countries, development projects in the past failed (in part) because of ignorance of local knowledge. They now strive to ensure that rural development projects are appropriate to local conditions, are based on community experience, are open and dynamic, and are therefore not indifferent from the local system of knowledge, as illustrated in figure 5.
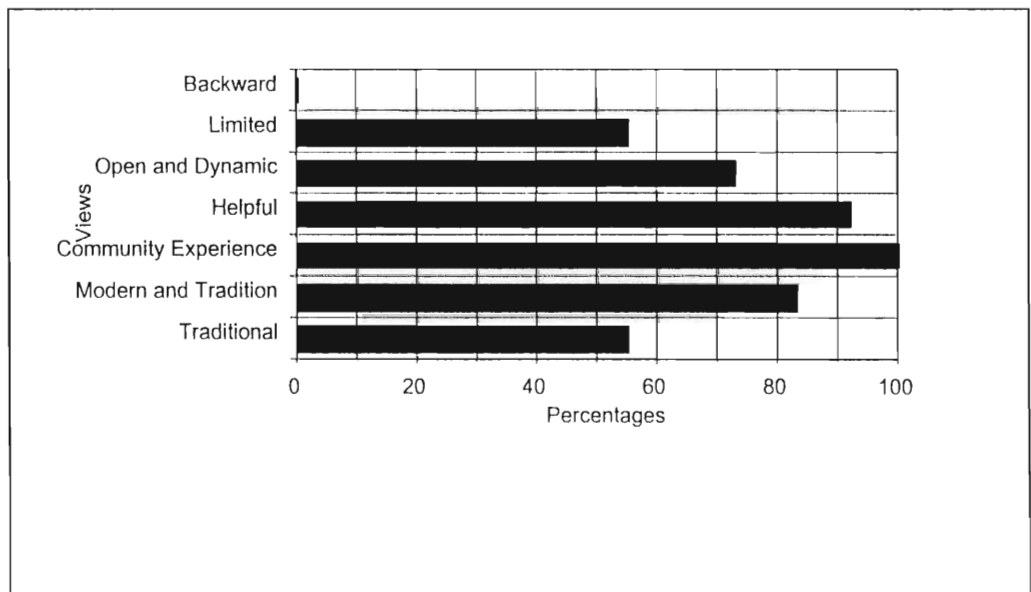
Figure 5. Views About Local Knowledge by GO'S and NGO'S

The findings also show that rural development projects also assumes to integrate local knowledge and conventional sciences in their rural development programmes. This study strongly supports Babu et. al (1995) who argue that successful use of local knowledge systems in development projects requires that the identified knowledge base is combined with existing modern practices.

The findings also show that most government and Non-Governmental Organisations consider local knowledge to be worth using in its own right in rural development programmes. Further they want to improve the involvement of local communities in all stages of rural development programmes and they are all eager to learn more about local knowledge systems and the role they can play in rural development. This suggests that Namibian governmental and

Non-Governmental Organisations on the basis of their own experiences have come to appreciate the importance of working with and through local systems, instead of trying to work around them, as Dommen, in Titilola (1994) holds. This can only augur well for rural development in Namibia.

Development organisations in Namibia appear to be on track with international trends in rural development. They have recognised the contribution local knowledge systems can make to rural development and are interested in integrating it in development programmes.

6.4 LOCAL INSTITUTIONS

Historically, local institutions in Salambala were left behind and never consulted in any development programmes in their area, reinforcing Ayittey (1991:423), who states,

> "there was a pervasive belief among nationalists and elites that Africa's own indigenous institutions were "too backward," "too primitive" for the rapid development and transformation in Africa".

This belief was in line with the biases and perceptions against local knowledge. However, the local institutions in Salambala have positive perceptions of their own knowledge system, as illustrated in figure 6.
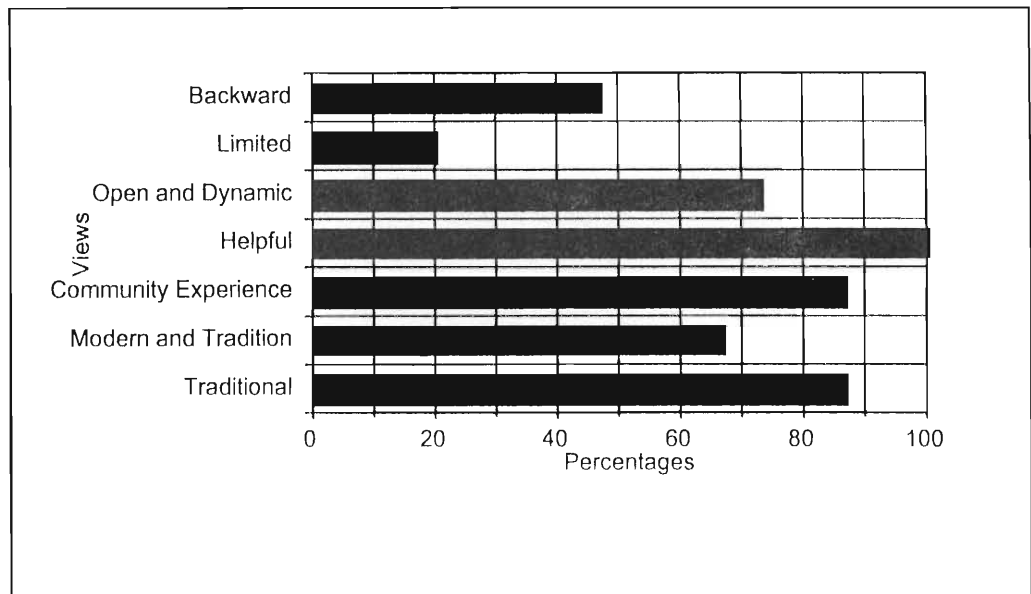
Figure 6. Views About Local Knowledge by Local Institutions.

Rural development programmes failed to recognise that information and decision-making process are rooted in the socio-economic structure of the community. It is, therefore, impossible to separate local knowledge from structure, a fact clearly demonstrated by the formation of new institutions and committees within the community whenever a project was introduced. The committees disappeared almost immediately as the project failed to meet their aspirations or when the project practitioners left the area.

Government and Non-Governmental Organisations, as practitioners and agencies of rural development programmes realised that there will be no agricultural development without recognising the importance of rural social structure[1] and that there will be no understanding or utilisation of the valuable contributions of local knowledge (Titilola 1994). To be successful community projects need to consult and involve local management.

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[1]Footnote: I am aware that a limitation of this research is that it does not take into consideration gender and other sociological explanation of socialisation, culture and social reproduction.

In most cases the traditional authority of chiefs and headmen provides the cultural foundation upon which local knowledge is based. Many of the cultural ceremonies and rituals depend upon the chiefs playing a leading role (Mchombu 1993). The traditional authority in Salambala exists and is fully functional (as discussed in Chapter 2). It is the custodian of local knowledge and has to ensure that it is passed on to younger generations.

It is said that local knowledge is transmitted and kept alive through the use of a number of strategies, including folk tales, songs and poems, riddles, oratory, dances, all of which could be categorised as oral literature forms.

> "People were taught from childhood what was permitted and what was not, which plants and trees they were allowed to use and which they were not, etc. - this was a way of life for them. These methods need to be revived and used to conserve biodiversity" (Kakonge 1995:20).

These strategies of transmitting knowledge have demised in the Salambala community, the only ones remaining being story telling and rituals. The demise of transmission strategies can be attributed to changes in structural and social processes of the community. Mchombu (1993) states that this could have an undermining effect on the cultural fabric of rural communities. The traditional authorities in Namibia, as many in other African states, were left powerless and their roles taken over by government institutions. The restoration of these powers to traditional authorities as the custodian of local knowledge is therefore important in terms of traditional practices.

Local knowledge is still respected and retained within the norms of the community. Taboo's and rituals are used to force individuals to assimilate and comply with important aspects of local knowledge. The challenge facing local knowledge in Salambala is not only it's recognition and use but also ensuring that knowledge is passed on to other generations and is properly captured and recorded. Traditional management of natural resources should be revised, as part

of empowering local communities to promote sustainable development (Kakonge 1995).

6.5 LAND USE

The knowledge local communities have about their area is determined by the land use system they are practising. Land use is, therefore, an integral part of the traditional and social life of rural communities. The land uses which each member of the community practises shape the knowledge system that a particular member has. It is, therefore, important to realise that each member of the community does not automatically possess the same knowledge system. Community members have specialist knowledge systems depending on what they do and how they live.

The respondents of this targetted community showed a strong suport for the use of local knowledge. They have also illustrated a positive perception of their own local knowledge system (See Figure 7).
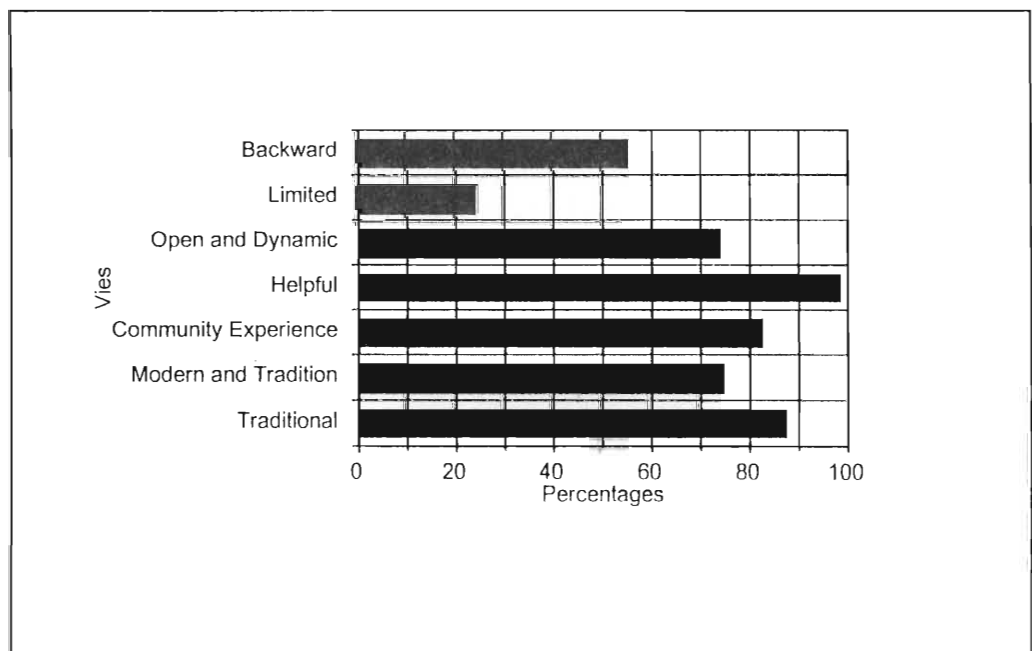

Figure 7. Views About Local Knowledge by Land Users

The findings in the figure was also supported by the vast examples the different users gave to demonstrate how they use local knowledge system in their daily lives.

6.5.1 Natural Resources

The definition of "natural resources" among the Salambala community has been based on what the communities harvested from nature for consumption and sale. Trees and other wild plants as well as river resources provide many of the necessities of life for rural households, along with opportunities for barter, sales and enterprise development. The plants harvested include wood or timber products, and non-wood products such as leaves, fruits, nuts, bark and roots. Rivers and floodplains offer both plant (tubers, reeds) and animal (mainly but not only fish) resources (Ashley and La Franchi 1997:26).Veld products harvested include wild fruits, nuts, berries, leaves, roots and bark to supplement diets, provide medicines, and other household items. The nature of resources harvested indicates that there is a vast pool of ethnobotanical knowledge within the community.

The community has considerable knowledge of tree and plant resources, especially in terms of their usefulness(by their leaves and stumps). The community could identify 30 tree species they use for example (See Appendix IV). The herdboys who spend most of their time herding cattle have enough time to identify edible wild fruits, nuts and berries and they are more knowledgeable about this particular resource than others (Mosimane 1996). Wild fruits are particularly important in the winter as a dietary supplement when food is scarce.

The ethno-botanical knowledge the community of Salambala possesses is valuable to them and to future generations. Those who have examined indigenous technical knowledge in depth elsewhere are likely to be just as impressed with the community in this study as they have been with others.

"Hand in hand with this highly developed ability to identify plant life, goes a detailed knowledge of medicinal and other uses of plants and the conceptual wherewithal to deal in a sophisticated manner with relations between vegetation and the rest of the ecosystem" (Howes. 1980: 337).

This is the case in Salambala, in the sense that boys and women have better knowledge of wild fruits than any other members of the community. Women are also involved in craft making, especially the use of reeds and palm leaves and, as a result possess more knowledge about these resources. On the other hand men have better knowledge of trees -which can be used for construction, which for craft making as well as the herbs for livestock. The community is also still very dependent on traditional healers, who possess a stored knowledge on the medicinal uses of plants.

This ethno-botanical knowledge is important in the management of natural resources in rural areas. Governmental agencies involved in the conservation of trees and forests whose interest competes with the social needs of the communities they work with, could benefit from the ethno-botanical knowledge of the community. If ethno-botanical knowledge is seen as a resource perhaps it could preempt an opportunity for dialogue between contending interests. A dialogue needs to be initiated between the community members who possess ethno-botanical knowledge, ecologists and other agencies to learn from each other and develop better management strategies.

6.5.2 Crop farming

The community of Salambala has extrusive knowledge of the land, because agriculture is the most important economic activity. The community is able to name the soils on which they work as well as other resources relating to the process of production, such as plant species, land systems and season (Sikana 1993).

Kamwi (1997) shows that local people have vast knowledge of the soil types are normally distinguished by colour and texture and their usefulness. In his study, local people identified five field types, namely *Sipani, Mapumba , Litapa, Mabala* and *Mushitu*, which are categorised according to their soil. Crops which are suitable to each soil type were also identified.

The knowledge the Salambala community have about their soil types can be used in agricultural development and to generate a detailed inventory of soil resources. Niemeijer (1995) has argued the importance that such a soil knowledge system can have for developing a soil inventory. Local soil classifications can make development work more effective, by providing a better understanding of the issues and options of the local farmers. It can also lead to a more thorough understanding of the local ecosystem, while offering a number of new angles from which to examine ecological problems.

6.5.3 Livestock farming and Ethno-veterinary Knowledge

Ethno-veterinarians argue that pastoralists are able to identify several diseases and their symptoms. They can cure and prevent many diseases by traditional means, and they are able to produce healthy, disease resistant and marketable livestock. The Salambala community has demonstrated that they have a vast knowledge of local livestock diseases and how to cure them.

In Kamwi's study (1997), the community were able to record several livestock diseases, to categorise them in terms of which can be treated traditionally and which cannot, and to rank their occurrences for the past decades. The community also managed to record local knowledge of livestock grazing and identified important grass species for livestock. Their ability to differentiate between species that are rich for grazing and to identify the grasses by local names encapsulates a storehouse of pastoral knowledge which can be used in agriculture development and the management of natural resources. Kamwi's work confirmed

the expressed, general observation about the openness with which local knowledge combines with other knowledge systems.

Development practitioners and particularly agricultural extension officers should tap into ethno-veterinary knowledge and practices and incorporate them into livestock development programmes. According to Halpin (1981), Sandford (1983), Maliki (1981), Fre (1989) and others, efforts are being made in other third world countries to extend the role of traditional veterinarians and upgrade their skills. Namibian, government and Non-Governmental Organisations could follow this example to bring meaningful agricultural development to the small farmers.

6.6 INTEGRATING LOCAL KNOWLEDGE

The integration of the local and modern (scientific) knowledge systems are a challenge faced by development practitioners and agencies, agricultural extension officers, academics and importantly, researchers. Namibian governmental and Non-Governmental Organisations have expressed their desire to do so. Local institutions and various land users have also shown a keen interest in the integration of local knowledge into all development programmes in their areas lack a strategy how this could be achieved. The Agroecology University Cochabamba (AGRUCO) has taken the initiative to develop an institutional frame for interaction between communities and projects (See figure 8).
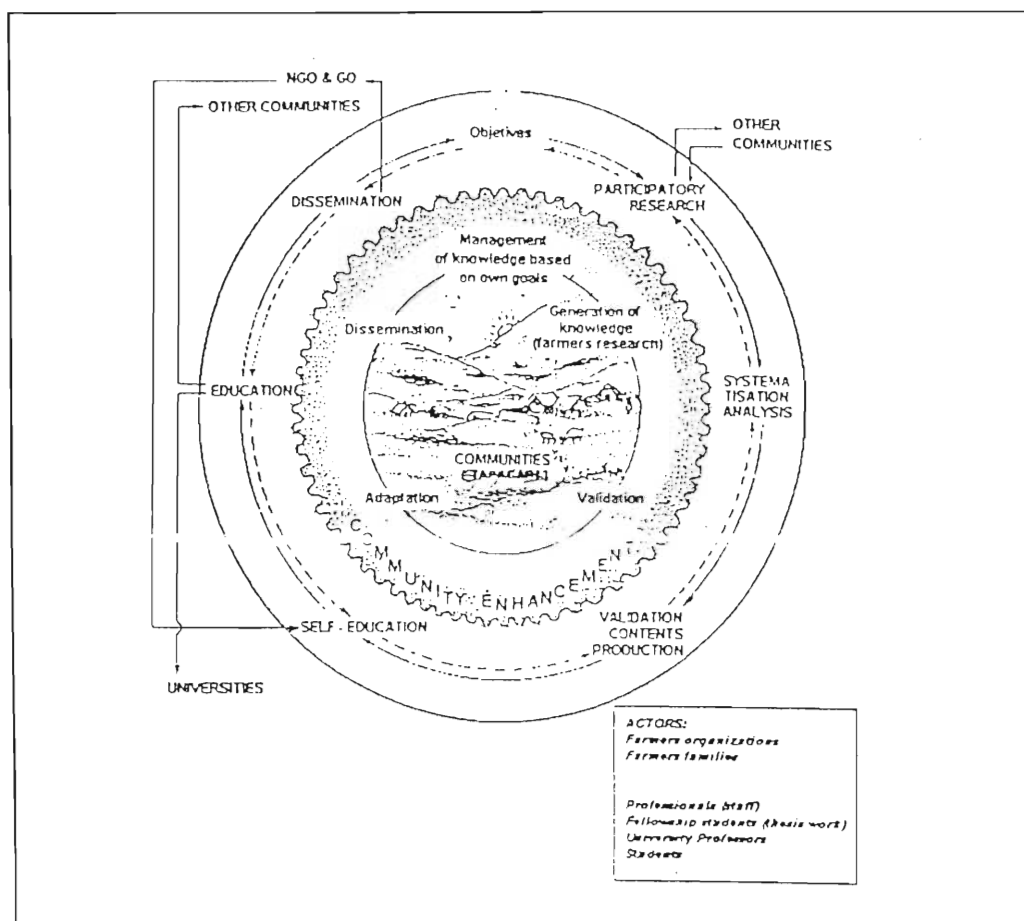
Figure 8: Institutional frame for interaction of community and project.

Source: Rist et.al 1997:17

The figure recognises the vast pool of knowledge existing in the community and continuous generation through experimentation and trial and error which is unique to the local community. Rural development practitioners and modern scientists should be involved with the community in the process of experimentation, validation, adaptation and lastly the dissemination of knowledge through the community. It is important for this process to allow both knowledge systems to make their contributions evenly without one knowledge system being dominant. This process should allow both the local people and modern scientists to test and influence decisions and to contribute, on the basis of their own particular backgrounds. All levels of the community, from an individual to the chief should contribute freely to the process of generating and integrating the knowledge systems.

Through such a system, modern scientific knowledge would continue to generate knowledge- through participatory research, systematisation and analysis, validation of contents, production, self-education and the education of others, information dissemination etc. Where possible people with local knowledge should be involved and be able to influence the generation of modern scientific knowledge. The development objectives developed through this process would be introduced on a participatory level taking into consideration the knowledge acquired through participation in experimenting and generating local knowledge. The dissemination of findings and information in both knowledge systems should be in a two-way direction.

Although this process in (figure 8) is not the only way of integrating the two knowledge systems but can contribute to the process of integration, it constitutes a useful starting point from which to begin to think about knowledge system integration. The key to the process of integration is mutual respect and an understanding of both knowledge systems, with continuous dialogue being central to the process.

6.7 CONCLUSION

The importance of local knowledge system is strongly emphasised in the study. The importance is realised within the literature and by the findings of the study. The lack of recognition and disregard of local knowledge are identified as some of the factors which contributed to the negative biases and lack of understanding of the knowledge system. Development practitioners and agencies also realised the importance of local knowledge and the role of local people in development and are striving to integrate it in development programmes.

CHAPTER 7.
CONCLUSION AND RECOMMENDATIONS

7.1 CONCLUSION

The Salambala community possesses valuable knowledge of the local social and environmental conditions in eastern Caprivi. Due to the negative connotations attached to local knowledge such as it being "backward", "primitive" and "inferior" to other knowledge systems, local people tend to undervalue what they know and to associate it (and themselves) as traditional. They fail to see it as a knowledge system which is equally as valuable or useful as modern scientific knowledge. Nonetheless, the importance and contribution of local knowledge to their daily lives is highly praised by the community.

Government and Non-Governmental Organisations recognise the contribution and importance of local knowledge to rural development programmes. The organisations interviewed indicated a desire to learn more about local knowledge and to incorporate local knowledge into development programmes. With a few exceptions, the practice of this has, however, yet to be fully realised.

Currently there is not a standard strategy of how to incorporate local knowledge into rural development programmes. Each organisation is trying to develop an approach, often without sharing experiences, learning from others or striving consistently for better practice. This carries negative implications for the outcome of the programmes they are implementing as well as for the place of local knowledge in development as a whole.

Although natural resource harvesters, crop farmers, livestock farmers and wildlife management have demonstrated a keen knowledge of their respective land use systems, this knowledge is not documented. As a result, it is not available to outsiders, who bring rural development programmes to the

communities. This is a major obstacle which affects both the community, researchers and rural development practitioners.

The foundation on which local knowledge should flourish is deteriorating and institutional support needs to be given to the transmission of customs, rules and regulations, to ensure that this knowledge is passed on to each generation.

Local knowledge is a valuable resource which can contribute to the better management of natural resources and the environment. It can enhance understanding and mutual respect between the communities, rural development practitioners and agencies. This aim is a desirable objective for all concerned as well as in the interests of sustainable resource use.

7.2 RECOMMENDATIONS

It is important that the value of local knowledge is acknowledged and accorded its due weight in the development process. Awareness about local knowledge and the contribution it can make, not only to the management of natural resources but to rural development should be brought to the attention of the communities and rural development practitioners and agencies. The community should be made proud of the knowledge they have, so that they can use it to generate sustainable development. Namibia Non-Governmental Organisations Forum (NANGOF) could be an appropriate vehicle to raise awareness of the importance and value of local knowledge amongst its members. This will enhance the process of learning both for the community and for the outsiders. Through this process, mutual understanding and respect between the stakeholders will be developed which is of great importance in rural development programmes.

All organisations involved in development should involve local people and incorporate their knowledge into their projects. This will enable the

organisations and the communities to work together more equally and to better effect.

The local knowledge of rural communities needs to be researched and documented. This process will enhance the sharing of information between the community and development organisations. The knowledge will also become known and available to outsiders for use and consultation in all phases of the programmes. Documentation of local knowledge will also take away the stigma of "inferiority" and add value to the knowledge, making it equal in status to other knowledge systems.

Local institutions need to be supported and capacitated in order that they can fulfil their role within the community, of managing natural resources and ensuring that the best aspects of local knowledge are passed to each generation. Where the leadership is not to a desired standard, it should be strengthened.

The study has shown that the rural communities have a vast store of local knowledge which can contribute to the management of natural resources, the environment and rural development. Local knowledge is an available resource which rural communities are offering to researchers, academics, agricultural extensionists and rural development practitioners and agencies. This study, it is hoped, will contribute towards a better understanding of local knowledge in rural development.

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Appendix I: Governmental and Non-governmental Questionnaire.

Please place a tick, next to the response you feel to be most appropriate in the answer column.

NO	QUESTION	ANSWER	CODE
1	Do you have any rural development programme? **(Only one answer)**	Yes No Don't know	1 2 3
2	Do you involve people in the communities where you are running these programmes? **(Please answer all)** a) from the very beginning of the programme b) in programme conceptualisation c) in programme design d) in programme implementation	 Yes No Yes No Yes No Yes No	 1 2 1 2 1 2 1 2
3	Would you describe people's participation as: **(Only one answer)**	Very strong Strong Average Weak Very Weak	1 2 3 4 5
4	Could you explain your response to the question in 3?		

NO	QUESTION	ANSWER	CODE
5	Would you describe the ideas and knowledge rural people bring to your programmes as: **(Please answer all)**		
	a) backward	Yes No	1 2
	b) traditional	Yes No	1 2
	c) a mixture of tradition and modern	Yes No	1 2
	d) based on their experiences	Yes No	1 2
	e) limited	Yes No	1 2
	f) open and dynamic	Yes No	1 2
	g) helpful	Yes No	1 2
6	Explain your answers in 5?		
7	Would you describe the ideas and knowledge that development programmes bring to your communities as: **(Please answer all)**		
	a) appropriate to the local conditions	Yes No	1 2
	b) scientific	Yes No	1 2
	c) based on experience	Yes No	1 2
	d) indifferent to the local system of local knowledge	Yes No	1 2
	e) open and dynamic	Yes No	1 2
	f) helpful	Yes No	1 2
8	Do you think that the ideas and knowledge that local people bring to rural development programmes are: **(Only one answer)**		
	a) worthless		1
	b) worth considering when modified		2
	c) worth considering in their own right		3

NO	QUESTION	ANSWER	CODE
9	On a scale of one to five place local knowledge in terms of their importance in shaping and determining the success of your rural development programmes? **(Only one answer)**	Low 1 2 3 4 High 5	1 2 3 4 5
10	For your next programme how do you plan to use local knowledge systems? **(Only one answer)** a) in conceptualisation b) in design c) in implementation d) in all three stages e) not at all f) don't know		 1 2 3 4 5 6
11	Would you like to learn more about local knowledge systems and the role they can play in development? **(Only one answer)**	Yes No	1 2

Appendix II: Local Institutions Questionnaire

Please place a tick, next to the response in the answer column.

NO	QUESTION	ANSWER	CODE
1	Are the members of your institution: **(Only one answer)** a) nominated b) voted c) traditionally elected		 1 2 3
2	To whom is your institution accountable? **(Only one answer)** a) the government b) the community c) non-governmental organisations		 1 2 3
3	How will you best describe your institution? **(Only one answer)** a) traditional b) developmental c) both d) other........... (specify)		 1 2 3 4
	I now want to talk to you about something, I call local knowledge. The term local knowledge is used to differentiate knowledge developed by a given community from the international knowledge system. This concerns the ideas and knowledge that you have about the world which come from your own experience, your culture, your parents and ancestors.		

NO	QUESTION	ANSWER	CODE
4	Would you describe your institutions involvement in local knowledge as: **(Only one answer)** a) very strong b) strong c) average d) weak e) very weak		1 2 3 4 5
5	Could you explain your answer to 4?		
6	Would you describe local knowledge as: **(Please answer all)** a) backward b) traditional c) a mixture of tradition and modern d) based on community experience e) limited f) open and dynamic	Yes No Yes No Yes No Yes No Yes No Yes No	1 2 1 2 1 2 1 2 1 2 1 2
7	Explain your answer for each in 7? **(Only one major reason for each response)**		
8	In what way does your institution usually ensure that local knowledge is passed on to each generation? **(Only one answer)** a) public meetings b) story telling, rituals c) initiation rites, ceremonies d) records in books e) doing nothing f) don't know		1 2 3 4 5 6

NO	QUESTION	ANSWER	CODE
9	Would you say local knowledge systems are: **(Please answer all)** a) still respected in the community b) widely used in the community c) relevant to today's life d) less destructive to the environment e) keeping with the norms of the community f) having taboos/ myths to regulate the use of the environment	 Yes No Yes No Yes No Yes No Yes No Yes No	 1 2 1 2 1 2 1 2 1 2 1 2
10	What do you think local knowledge can contribute to forestry and trees conservation?		
11	What do you think local knowledge can contribute to livestock raising?		
12	What do you think local knowledge can contribute to livestock grazing patterns?		
13	What do you think local knowledge can contribute to growing crops/food?		
14	What do you think local knowledge can contribute to managing land use?		
15	What do you think local knowledge can contribute to wildlife conservation?		
16	On a scale of one to five where would you place local knowledge in terms of usefulness to the community?	Low 1 2 3 4 High 5	1 2 3 4 5

NO	QUESTION	ANSWER	CODE
17	Who should be responsible for integrating local knowledge the community possesses in development programmes? **(Only one answer)**		
	a) tribal authorities		1
	b) non-governmental organisations		2
	c) community		3
	d) government		4
	e) specialists in the community		5
	f) donor agencies		6
	g) all the above		7
	h) nobody		8
	i) other......... (specify)		9
18	How can local knowledge be integrated in development programmes?		

Appendix III: Households Heads Questionnaires

Please place a tick, next to the response in the answer column.

NO	QUESTION	ANSWER	CODE
1	How old were you at your last birthday?		
2	Sex	Male Female	1 2
3	Can you tell me the highest level of education that you have completed? **(Only one answer)** a) none b) incomplete primary c) primary d) incomplete secondary e) secondary f) teacher training or college g) university		 1 2 3 4 5 6 7
4	Which of these terms best describes how you see yourself? **(Only one answer)** a) traditional b) modern c) mixture of both d) none of the above e) other .... (specify)		 1 2 3 4 5
5	Do you? **(Please answer all)** a) harvest natural resources b) own livestock c) crop farm	 Yes No Yes No Yes No	 1 2 1 2 1 2

NO	QUESTION	ANSWER	CODE
	I now want to talk to you about something I call local knowledge. The term local knowledge is used to differentiate knowledge developed by a given community from the international knowledge system. This concerns the ideas and knowledge that you have about the world which come from your own experience, your culture, your parents and ancestors.		
6	Would you describe local knowledge as: **(Please answer all)**		
	a) backward	Yes No	1 2
	b) traditional	Yes No	1 2
	c) a mixture of tradition and modern	Yes No	1 2
	d) based on community experience	Yes No	1 2
	e) limited	Yes No	1 2
	f) open and dynamic	Yes No	1 2
7	Explain your answer for each in 7? **(Only one major reason for each response)**		
8	In which land use system is it easier to apply local knowledge? **(Only one answer)**		
	a) harvesting natural resources		1
	b) livestock farming		2
	c) crop farming		3

NO	QUESTION	ANSWER	CODE
9	Would you say this knowledge that comes from your past and your own experience is important to you? **(Only one answer)** a) in all aspects of present day life b) in some aspects of present day life c) in no aspects of present day life d) do not know		1 2 3 4
10	In what spheres or part of your life would you say that this knowledge is particularly useful and something that you draw on a lot? **(Please answer all)** a) harvesting of resources b) hunting and conservation c) protecting nature	 Yes No Yes No Yes No	 1 2 1 2 1 2
11	What do you think local knowledge can contribute to forestry and trees conservation?		
12	What do you think local knowledge can contribute to livestock raising?		
13	What do you think local knowledge can contribute to livestock grazing patterns?		
14	What do you think local knowledge can contribute to growing crops/food?		
15	What do you think local knowledge can contribute to managing land use?		
16	What do you think local knowledge can contribute to wildlife conservation?		

NO	QUESTION	ANSWER	CODE
17	How would you describe the ideas and knowledge that development programmes bring to your communities: **(Please answer all)**		
	a) appropriate to the local conditions	Yes No	1 2
	b) scientific	Yes No	1 2
	c) based on experience	Yes No	1 2
	d) indifferent to the local system of local knowledge	Yes No	1 2
	e) open and dynamic	Yes No	1 2
	f) helpful	Yes No	1 2
18	Do you think that there are ideas that you have that are not used by development programmes in your area? **(Only one answer)**	Yes No	1 2
19	If yes, can you explain?		
20	How would you describe the place of local knowledge system in development? **(Only one answer)**		
	a) very useful		1
	b) useful		2
	c) not useful		3
	d) do not know		4
	e) irrelevant		5

NO	QUESTION	ANSWER	CODE
21	Who should be responsible for integrating local knowledge the community is possesses in development programmes? **(Only one answer)** a) tribal authorities b) non-governmental organisations c) community d) government e) specialists in the community f) donor agencies g) all the above h) nobody i) other......... (specify)		1 2 3 4 5 6 7 8 9
22	How can local knowledge be integrated in development programmes?		

Appendix IV: Plant use in the Salambala Area

INDIGENOUS NAMES	SCIENTIFIC NAMES
Liseto	Dicerocaryum zanguebarium
Mubbu	Pseudolachnostylis maprouneifolia
Mubilo	Vangueria infausta
Mububu	Combretum hereroense
Mubula	Parinari curatellifolia
Mubuyu	Adasonia digita
Muchaba	Grewia allevana
Muchaba	Ficus sycomorus
Muchenje	Diospyros mespiliformis
Muchinga	Popowia obovata
Muhama	Terminalia prunioides
Muhamani	Dialium engleranum
Muhulahula	Strychnos spinosa
Muhuluhulu	Strychnos cocculoides
Mukonongwa	Annona senegalensis
Mukupukupu	Markhamia obtusifolia
Mukusi	Baikiaea plurijuga
Mulutulua	Ximenia caffra
Mumaka	Grewia flavescens
Mundu	Grewia retinervis
Munganda	Hyphaene ventricosa
Munyenye	Amblygonocarpus
Mupondo	Baikiaea macrantha
Mupundo	Bauhinia macrantha
Musamba	Lannea discolor
Musekeseke	Cassia occidentalis

INDIGENOUS NAMES	SCIENTIFIC NAMES
Muselesele	Dichrostachys cinerea
Musheshe/ Musese	Burkea africana
Mutente	Ximenia americana
Muzinzila	Berchemia discolor