UNITED REPUBLIC OF TANZANIA

GUIDELINES FOR SUSTAINABLE MANAGEMENT AND UTILIZATION OF RANGELANDS IN TANZANIA

VICE-PRESIDENT'S OFFICE 2014

PREFACE

The fact that Rangelands are valuable resources in Tanzania and they accommodate biodiversity of variety of animal and plant species of economic, ecological and socio-cultural values is undeniable. However, these areas are found nearby lands that have long been subjected to a number of challenges which complicate their management. These challenges put the valuable resources at a high risk of over exploitation and degradation. These challenges, inter alia, include: failure of conservation to compete effectively with alternative land uses, habitat degradation and blockage of wildlife corridors, overexploitation and illegal resource extraction, wildfires, human population growth, poverty, increased human-wildlife conflicts as well as livestock keepers and crop cultivators' conflicts.

The purpose of these Guidelines is, therefore, to provide guidance for sustainable management of Rangelands that can address the highlighted issues. In essence, these Guidelines not only aim at providing practical guidance on sustainable management and utilization of Rangelands as required by the Environmental Management Act (Cap. 191), they are also intended to support sustainable productivity of livestock and wildlife, improve pastoral as well as agro-pastoral livelihoods.

The Guidelines reveal that management of Rangelands demands deliberate efforts towards strengthening cooperation, consultation and information exchange among stakeholders, particularly those involved in livestock management, agriculture, natural resource management and resettlement programmes.

It is anticipated that these Guidelines will be subjected to periodical updates so as to ensure their robustness, and to allow for more efficient and effective implementation. Hence, any suggestions for improvement from any relevant stakeholders will be highly appreciated. It is my expectation that these Guidelines will serve and continue to be a valuable resource for many users.

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LIST OF ABBREVIATIONS AND ACRONYMS

ASDP	Agricultural Sector Development Programmes
ASDS	Agricultural Sector Development Strategy
CBOs	Community Based Organisations
CCRO	Certificate of Customary Rights of Occupancy
CSOs	Civil Society Organisations
DED	District Executive Director
DoE	Division of Environment
DAICO	District Agriculture Irrigation and Cooperatives
IWRM	Integrated Water Resource Management
KWS	Livestock Early Warning System
LUP	Land Use Planning
LHRC	Legal and Human Right Centre
LGAs	Local Government Authority
MDAs	Ministries, Department and Agencies
MLHHSD	Ministry of Lands, Housing and Human Settlements Development
MNRT	Ministry of Natural Resources and Tourism
MoW	Ministry of Water
NGPRSP	National Growth and Poverty Reduction Strategy Programmes
NGO	Non Governmental Organisation
NLUPC	National Land use Planning Commission
NRM	Natural Resource Management
NEMC	National Environmental Management Council
PLUM	Participatory Land Use Management
PBFP	Property and Business Formalization Programmme
PMO-RALG	Prime Minister's Office - Regional Administration and Local Government
PPP	Public Private Partnership
PVLUP	Participatory Village Land Use Planning
PA	Protected Area
SUA	Sokoine University of Agriculture
TLU	Tropical Livestock Unit
TAPHGO	Tanzania Pastoralist Hunters and Gatherer Association
USAID	United States Agency for International Development
VLUP	Village Land Use Plan
VLA	Village Land Act
WMA	Wildlife Management Areas

EXECUTIVE SUMMARY

1. Introduction

1.1 Background

In Tanzania the rangelands resource is vast, covering an approximate area of 60 million hectares, or a third of the country and are used by 20-30% of the population. This area is capable of supporting over 20 million Tropical Livestock Units (TLUs) and millions of wildlife. About 24 million hectares of these rangelands are infested with tsetse flies.

Rangelands are an important economic resource and have significant cultural and heritage values for Tanzanians. They are also intrinsically valuable because of their biodiversity, areas of high wilderness quality and other conservation values.

The management of the rangelands, now and into the future, is of great interest and consequence to the whole community. Rangelands are also ecologically important because of the significant number of endemic species, high species diversity, areas of ecological and geomorphologic integrity, unique ecosystems and habitat for rare, threatened and endangered species.

There is an appreciation that past management practices and some current ones have proved inappropriate to the rangelands. These practices have resulted in accelerated soil erosion, increased numbers and distribution of weeds and feral animals, reduced water quality, soil salinity, the decline of and changes to native plant communities and decreased biodiversity. This has led to significant areas of the rangelands being degraded, calling into question their long term sustainability under current uses.

1.2. Objectives of the Guidelines

The main objective of these Guidelines is to provide practical guidance on Sustainable Management and Utilization of Rangelands as required by the Environmental Management Act (Cap. 191), in order to improve rangeland management and utilization,

support sustainable productivity of livestock and wildlife, and improve pastoral and agro-pastoral livelihoods. Specifically, these Guidelines intend to:

- identify an approach that would facilitate and manage change in the rangelands to ensure options for the future are retained;
- maintain rangeland resources and conserve their biological and cultural heritage;
- balance the diverse economic, cultural and social needs of rangeland residents and users; and
- establish a framework for those with interests in rangelands to develop strategies and actions to manage change and ensure a viable legacy for future generations.

2. Methodology

These Guidelines have been prepared by a multidisciplinary team in a participatory manner by involving different stakeholders. The process involved the use of different research techniques such as literature review, stakeholders' consultations, and district field visits. These Guidelines have been framed in accordance with the *landscape approach* which is a framework for making landscape-level conservation decisions.

3. Policy and Legal Framework

These Guidelines are closely linked to the current national growth and development strategies such as the Tanzania Development Vision 2025, the National Growth and Poverty Reduction Strategy Programmes (NGPRSP I and II), and other strategies which contribute to effective conservation and utilization of Tanzania's land resources and improving the livelihoods of its people. There are also a number of policies and pieces of legislation governing land tenure and management in Tanzania, all of which have an impact on how land is accessed and secured in rangelands.

5. Rangeland Management Institutions

There are various institutions which are directly or indirectly involved at different levels in rangelands management. The Environmental Management Act (2004) mandates the Minister of Environment to take care of some provisions on the management of rangelands. Under Section 70 (subsections 1 and 2) the Minister may in consultation with relevant sector Ministers issue Guidelines and prescribe measures aimed at the sustainable management and utilization of rangelands.

At the ministerial level, the Division of Environment collaborates with the Ministry of Livestock and Fisheries Development which is responsible for overseeing policy matters pertaining to rangelands management in Tanzania. The Ministry also collaborates with the Ministry of **Water**, the Ministry of Agriculture, Ministry of Lands, Housing and Human Settlements Development, Food Security and Cooperatives, Ministry of Natural Resources and Tourism and the PMO-RALG which is responsible for Local Government Administration, including District Councils.

Currently, the administration and institutional arrangements for rangelands management at the district level is through the Rangeland Units in the Department of Livestock - one of the departments under the DED's office. The DED is responsible to the Regional Administrative Secretary (RAS) who is answerable to PMO-RALG which is linked to the Ministry of Livestock and Fisheries Development. The Rangeland Units are linked to the wards and villages and finally to livestock keepers through the District Extension Services.

Generally, there is a shortage of Livestock Officers, including Rangeland Officers. Also, inadequate institutionalization of district PLUM teams hinders the sustainability of the PVLUP process.

6.0 The Guidelines and Recommended Actions

6.1 Preamble

These Guidelines and the Recommended Actions have been developed on the basis of a set of principles and values established through the stakeholders' consultative meetings and literature review.

6.2 Specific Guidelines and Recommended Actions

Guideline 6.2.1: ***Set Up a Viable Administrative and Institutional Framework for Rangeland Management***

Recommended Action 1: The Government will need to review its policies and programmes to ensure they facilitate the desired outcomes for the rangelands at both national and community levels. An essential part of managing Tanzania's rangelands is

reviewing, monitoring and evaluating the environmental, economic, social and cultural conditions of the rangelands. The Ministry of Livestock and Fisheries Development will have a central role in determining appropriate processes to report on these aspects. They will also have a role in assessing the impact of the national and district planning processes.

Recommended Action 2: A range of issues require institutional change, such as clarification of tenure arrangements arising from legal decisions. Such issues will need to be addressed within the political and legal systems at the national level. Many of the issues and actions identified in this document are already being addressed through existing government structures. In some cases, issues and suggested actions will be the responsibility of and may need to be referred to other MDAs. The Ministry of Livestock and Fisheries Development may also need to establish an effective mechanism to oversee and evaluate the implementation of relevant actions that require a national response. Local governments will need to assess the Guidelines and Recommended Actions and implement as appropriate to their responsibilities.

Recommended Action 3: Villages should be used for conservation of rangelands. Define rangeland management units and establish the presence and condition of the resources found within it through a participatory rangeland resource assessment. Once the rangeland management institution has been identified and its roles and responsibilities have been clarified and agreed, the next step is to establish the 'boundaries' of its jurisdiction.

Recommended Action 4: Support the development of good governance institutions and structures at different levels. This will include those required by the village certification and LUP processes, but may require others too, such as cross-border peace committees or institutions governing watering points. Push for the involvement of respected and trusted village representatives in decision-making bodies, including men, women, and youth.

Recommended Action 5: Rangeland management experts at the district level should provide support to local institutions engaged in natural resource management, helping them to develop and implement their own natural resource action plans.

Guideline 6.2.2: ***Develop an Ecologically Sustainable Rangeland Management System***

Recommended Action 1: Understandable and unambiguous roles for all people and organizations with rangeland management responsibilities should be outlined, including mutual respect, recognition and support for traditional practices where they are appropriate. Take conscious steps and actions to ensure that women fully understand their land rights and land securing and VLUP processes. This should be carried out as part of a wider programme of empowerment and as part of broader development processes.

Recommended Action 2: Sensitive management of the rangelands is mandatory to protect and restore, where possible, commercial and non-commercial values, provide opportunities for multiple use, and protect biodiversity.

Recommended Action 3: Property rights legislation in all districts should provide secure tenure arrangements (including meeting the needs of local peoples), clear definition of rights and duty of care, and which set suitable framework for the diverse and multiple uses within land capability and according to land suitability.

Recommended Action 4: Assist pastoral groups in communities to register customary titles to grazing land through current legislation as a CCRO. This will involve identifying and reaching agreement on who constitutes the "group" and how best the collective title can be defined in law. Then the appropriate legal custodian of the title needs to be agreed upon. The opportunities for cross-village shared grazing areas to be titled to one or two groups can also be explored, e.g. through the establishment of a pastoral association as the legal custodian.

Recommended Action 5: Managers need the information, skills and commitment to guarantee that rangeland enterprises are economically and ecologically sustainable. In collaboration with other stakeholders the government should support and strengthen technical support services on rangeland management.

Recommended Action 6: Efforts should be made to establish and promote appropriate livestock infrastructure in rangeland areas. Appropriate forage conservation practices for dry season feeding should be promoted.

Recommended Action 7: Financial and other institutions that plan and deliver services should be sensitive to the ecological time scale, the climatic variability and the regional differences in the rangelands which affect production levels and take into account the variability of commodity prices.

Recommended Action 8: The negative impacts of mining, tourism and other industries on rangeland resources should be reduced and prompt and adequate rehabilitation of rangelands affected by these activities should occur.

Recommended Action 9: Sensitive re-establishment and adjustment programmes should be in place for those whose pastoral businesses are not sustainable.

Recommended Action 10: There needs to be an awareness of the importance of the cultural and heritage values and social identity of the rangelands and the importance of protection and management of places of national importance.

Recommended Action 11: Capacity of local communities to make informed decisions when addressing local environmental conservation and natural resource management challenges should be built. Provision of rangeland management seminars to local leaders from government, education, religious and women's groups about the science and best practices of managing livestock and rangelands be taught by trained community members and extension staff.

Guideline 6.2.3: ***Conserve the Natural Environment for Sustainable Rangeland Management***

Recommended Action 1: A comprehensive, adequate and representative conservation reserve system should be established, on a national bio-regional basis integrated with conservation management strategies on other land.

Recommended Action 2*:* The Ministry of Livestock and Fisheries Development, in consultation with rangeland users and managers, should develop agreed criteria and indicators for ecologically sustainable rangeland management and business viability.

Recommended Action 3: Surface and groundwater resources of the rangelands should be managed in a sustainable manner to ensure long-term quality and availability.

Recommended Action 4: Livestock Early Warning System (LEWS) for disaster management and impending forage shortage should be strengthened.

Guideline 6.2.4 Develop *National and District Strategies*

Recommended Action 1: Policy development processes, within and between all levels of government, should be implemented that will lead to integrated and coordinated programmes and services.

Recommended Action 2: Government should assess all current and future policies and programmes impacting on the rangelands against the Principles and Guidelines outlined in this document.

Recommended Action 3: Government to review existing policies across all jurisdictions and assess their effectiveness, impact and consistency with this set of Guidelines. They should ensure broad community consultation to determine the potential impact on the rangelands of policies and legislation, including international agreements and conventions.

Recommended Action 4: Communities in the rangelands need to develop tailored (district) strategies to further the ecologically sustainable management and social and economic viability of the rangelands and, where appropriate access government support programmes with an integrated problem solving strategy.

Recommended Action 5: District planning should be flexible and responsive to the ongoing and changing needs of rangeland communities, managers and the environment.

Recommended Action 6: The particular rights and interests of local people in rangelands should be incorporated in rangeland planning and management.

Guideline 6.2.5: ***Ensure Gender Equity in Rangeland Management***

Recommended Action.1: The affirmative action against discrimination against women provided by both the Land Act and the Village Land Act must be upheld.

Recommended Action 2: There requirements for female representation in key decision-making bodies spelt out by the Land Tribunal Act (No. 2, 2002), it's Regulation (2004), and the Land Use Planning Act should be strictly adhered to.

Guideline 6.2.6: ***Facilitate Research and Development***

Recommended Action 1: The Ministry of Livestock and Fisheries Development should put in place an effective programme of strategic and adaptive research, development and extension, with direct involvement by rangeland users, managers and communities.

Recommended Action 2: The Ministry of Livestock and Fisheries Development and other research institutions in the country should address the declining resources and capacity in rangelands research.

Recommended Action 3: The Ministry of Livestock and Fisheries Development should actively encourage relevant research institutions (e.g. Sokoine University of Agriculture, etc.) to direct a regular portion of their research effort towards addressing issues facing the rangelands and to consult with rangeland users, managers and communities in setting research priorities.

Recommended Action 4: Scientists working in relevant fields should collaborate with rangeland managers and communities to utilize their knowledge and practical experience to find optimal solutions, and vice versa.

Recommended Action 5: Research organisations such as SUA should work with communities and rangeland users to implement the practical outcomes of their research

efforts. They should ensure that research information is accessible and easy to understand.

Guideline 6.2.7: *Enhance Sustainable Land Use Planning*

Recommended Action 1: Adopt and embed PVLUP in larger development processes.

Recommended Action 2: The development of village participatory land use plans should be guided by the Village Land Act and the Land Use Planning Act which grant power to VCs and their institutions to prepare such plans. The Land Use Planning Act also provides for the formation of planning authorities, functions, and procedures of developing village participatory land use plans and approval processes.

Recommended Action 3: Build the capacity of district staff, village leaders and village institutions to play effective role in VLUP.

Recommended Action 4: Shorten the number of days spent collecting information in each village by using updated maps/aerial photos or Google Earth maps. Use of high-resolution satellite imagery and GPS data means that information can be collected more efficiently than through lengthy field surveys. High-resolution satellite images are expensive, although once acquired one image could cover more than one village.

Recommended Action 5: Improve collaboration between land use and other development programmes such as agriculture, natural resource management, or resettlement programmes, which require land use planning for their own activities. Sharing costs can make more effective use of different funds available.

Recommended Action 6: Carry out interventions in several villages at a time using the same district's PLUM team members rotating from one village to another, depending on the type of activity each day. This is possible when the district has a well-trained and experienced PLUM team, which can be split into sub-groups working in more than one village at a time. Working across villages will be especially effective where the villages share resources.

Guideline 6.2.8: ***Ensure Constant Monitoring and Evaluation of Rangelands***

Recommended Action 1: Rangeland condition and trends should be assessed through an expanded monitoring and evaluation programme that incorporates indicators of production, biodiversity, water resource condition and climate factors on a landscape and biophysical unit basis.

Recommended Action 2: The Ministry of Livestock and Fisheries Development should establish and use effective monitoring mechanisms of socio-economic changes within the rangelands, including access to services and gaps and deficiencies in delivery mechanisms.

Recommended Action 2: Carry out a baseline participatory rangeland resource assessment and develop a long term monitoring programme. Key decisions will have to be made and agreed upon by both community members and government representatives. Development practitioners or natural resource advisors and/or a relevant research institution such as SUA can facilitate this process.

Recommended Action 3: Monitoring data should be used by all decision-makers in their policy development and planning processes and, in particular, by Government agencies in developing State of the Environment and other Reports.

1.0 INTRODUCTION

1.1 Background

Rangelands are ecosystems dominated by grasses, grass like plants, forbs, and shrubs.
Rangelands result through a complex interplay of factors: climate, available nutrients and water, fire, herbivores (livestock or wild ungulates), and human impact. Rangelands tend to occur in dry land areas with low and highly variable rainfall and often contain a patchwork of resources that include not only grasslands but also forests. Rangelands constitute some 35 million sq km of the Earth's surface area, with the majority of that in developing countries and some 65% (almost 22 million sq km) in tropical Africa. An estimated 50 million pastoralists and up to 200 million agro-pastoralists live across the continent.

The fragile natural resource base in arid and semi-arid areas where most rangelands are in Tanzania makes the livelihoods and businesses that depend on them highly vulnerable to mismanagement, overexploitation, and climate change. In many cases, economic development has accelerated the degradation of this natural resource base, with institutional and policy regimes unable to effectively balance exploitation with conservation, and national development objectives with the livelihood needs of the poor. These are challenges that climate change and increasing variability will exacerbate.

Rangelands are an important economic resource and have significant cultural and heritage values for Tanzanians. They are also intrinsically valuable because of their biodiversity, areas of high wilderness quality and other conservation values. Utilization of range resources in planned open and sparse areas is common in places where land is abundant. In some instances these areas are owned and managed communally and sometimes privately.

There is no clearly defined boundary to the rangelands. Boundaries move according to climatic conditions. Many areas adjacent to rangelands should be managed in similar ways using the landscape approach; and indeed many of the ecological, economic and social issues of these adjacent areas are similar to those of the rangelands.

The management of the rangelands, now and into the future, is therefore of great interest and consequence to the whole community. Rangelands are also ecologically important because of the

significant number of endemic species, high species diversity, areas of ecological and geomorphologic integrity, unique ecosystems and habitat for rare, threatened and endangered species.

With the benefit of hindsight there is now an appreciation that past management practices and some current ones have, in many areas, proved inappropriate to the rangelands. These practices have resulted in accelerated soil erosion, increased numbers and distribution of weeds and feral animals, reduced water quality, soil salinity, the decline of and changes to native plant communities and decreased biodiversity. This has led to significant areas of the rangelands being degraded, calling into question their long term sustainability under current uses.

1.2 Objectives of the Guidelines

1.2.1 Main objective

The main objective of these Guidelines is to provide practical guidance on Sustainable Management and Utilization of Rangelands as required by the Environmental Management Act (Cap. 191), in order to improve rangeland management and utilization, support sustainable productivity of livestock and wildlife, and improve pastoral and agro-pastoral livelihoods.

1.2.2 Specific objectives

Specifically, these Guidelines intend to:

- identify an approach that would facilitate and manage change in the rangelands to ensure options for the future are retained;
- maintain rangeland resources and conserve their biological and cultural heritage;
- balance the diverse economic, cultural and social needs of rangeland residents and users; and
- establish a framework for those with interests in rangelands to develop strategies and actions to manage change and ensure a viable legacy for future generations.

1.3 The Significance of the Guidelines

Although it is acknowledged that Tanzania‘s rangelands are almost a neglected asset there is a consensus among different stakeholders, including the rangeland users as noted during the stakeholder‘s consultations, that their continued degradation is an urgent challenge requiring a national response. These Guidelines do not only identify an approach that would facilitate and manage change in the rangelands thus to ensure retained options for the future, they also represent a fresh opportunity for rangeland

communities to build and develop their communities, recognizing and including the diverse values and aspirations of all its users.

2.0 METHODOLOGY

These Guidelines have been prepared by a multidisciplinary team in a participatory manner by involving different stakeholders. The process involved the use of difference research techniques as illustrated hereunder:

2.1 Literature Review

Under this activity literature review was done on relevant rangeland resource management aspects. The literature reviews sought to give a general understanding of:

- the ecology of major rangelands in Tanzania;
- existing initiatives such as government and private sector ranches, local/traditional enclosures (e.g. *ngitiri*), and the involved actors in rangeland management;
- the challenges existing in the management of rangelands;
- identification of institutions – both private and CSOs – involved in the rangelands management and their capacity, strength and prior experience on issues related to natural resources and environmental management;
- livestock infrastructure in rangeland areas;
- forage conservation practices; and
- rangeland conservation management strategies.

2.2 Field Visits

Field visits were undertaken in Kilosa and Simanjiro Districts in Morogoro and Manyara regions, respectively. These districts were visited specifically due to the significant presence of livestock keepers and the existence of substantial land use conflicts involving rangeland management aspects. During the field visits the study team paid courtesy calls to respective district offices and held discussions with heads of sections of livestock and agricultural departments, rangelands field officers, and agricultural land use planning officers.

After that exercise several stakeholder consultative meetings were held involving livestock keepers, farmers, and representatives of the local agriculture and livestock business community. In Kilosa District a meeting was held with members of Mbwade village Livestock Primary Cooperative

Society. The consultative meetings together with literature review mentioned above provided useful empirical data that has been used in the development of these Guidelines.

2.3 Stakeholders' Consultations at Ministerial and National Levels

Stakeholders' consultative meetings for development of the Guidelines were also concurrently conducted by visits to various MDA headquarters, including the Vice President's Office (Division of Environment), Ministry of Livestock and Fisheries Development, National Land use Planning Commision and the Ministry of Agriculture, Food Security and Cooperatives. Information from these meetings was used as an input in the development of the first Draft Guidelines**.** The first Draft Guidelines were then presented to a National Stakeholders' Consultative Workshop held at Hotel Stella Marriott in Bagamoyo end of April 2014. The Workshop was attended by participants from respective MDAs, relevant LGAs, the Private Sector, and relevant NGOs and CBOs.

3.0 POLICY AND LEGAL FRAMEWORK

3.1 Overview

These Guidelines are closely linked to the current national growth and development strategies such as the Tanzania Development Vision 2025, the National Growth and Poverty Reduction Strategy Programmes (MKUKUTA I and II), and other strategies which contribute to effective conservation and utilization of Tanzania's land resources and improving the livelihoods of its people. There are also a number of policy frameworks and pieces of legislation governing land tenure and management in Tanzania, all of which have an impact on how land is accessed and secured in rangelands. The most important of these are discussed below.

3.2 The Policy Environment

3.2.1 National Environmental Policy (1997)

This Policy has link with rangelands management with a focus on continuous conservation of the environment, especially by reducing soil deterioration, preserving water catchments and mitigating actions that foster environmental deterioration. The policy aims at ensuring sustainable environmental conservation for ensuring security and equitable use of resources for meeting the basic needs of present and future generations without degrading the environment or risking the health or safety of the people.

3.2.2 National Livestock Policy (2006)

The Policy addresses issues of utilization of rangelands for sustainable livestock production which is hampered by seasonal variations of quality and quantity of forage, uncontrolled burning, overstocking and overgrazing, incomplete designation of grazing lands, tsetse and tick infestation. Weak pastoral and agro-pastoral organizations, inadequate livestock support services, credit facilities, socio-economic services and weak infrastructure also limit utilization of rangelands.

The objective of the Policy is to improve rangeland management and utilization in order to support sustainable productivity of livestock and improvement of pastoral and agro-pastoral livelihoods. To do so the Policy intends to:

(i) Promote inventorization, identification, protection, management and use of rangeland resources.
(ii) Support and strengthen technical support services on rangeland management in collaboration with other stakeholders.
(iii) Establish and promote livestock infrastructure in rangeland areas.
(iv) Promote appropriate forage conservation practices for dry season feeding.
(v) Strengthen Livestock Early Warning System (LEWS) for disaster management and impending forage shortage; and
(vi) Promote and support pastoral and agro-pastoral organizations.

3.2.3 National Agricultural Policy (2012)

The Policy aims at addressing challenges that continue to hamper the development of the agricultural sector, including low productivity of factors of production, overdependence on rain-fed agriculture, inadequate participation of the private sector and environmental degradation and diseases. One of this Policy's objectives is the promotion and protection of integrated and sustainable utilization of agricultural lands. The policy statements emphasize, among others:

(i) Promote public awareness on existing policies, laws and legislation on land;
(ii) Enforce laws and legislation to enhance land resource management and conflict resolution as well as supporting gender-equitable land tenure governance;
(iii) Ensure agricultural lands are protected against encroachment as well as promote sustainable agricultural land use plans; and
(iv) Ensure availability of land for agricultural investment.

The Agricultural Policy has much relevance to sustainable rangeland management since the agro-pastoralist is involved in rangeland utilization as well as crop land cultivation – activities which sometimes have translated into competing and/or conflicting land use.

3.2.4 National Water Policy, 2002

This Policy provides a comprehensive framework for promoting optimal, sustainable, and equitable development and use of water resources. The policy seeks to ensure supply of good quality water to meet domestic, environmental and other priority development needs. Emphasis is placed on the need to ensure more efficient utilization of water resources through proper soil management to prevent soil erosion and flooding, and improved monitoring to control water quality and contamination. These objectives require an integrated and holistic planning approach. The policy states that water is fundamental for various socio-economic development activities; hence advocates the need to conserve water sources via integrated water resources management (IWRM) as a way to ensure water sources are conserved. Other emphases of the policy are in:

i) Planning and implementation of water resources and other development programmes in an integrated manner and in ways that protect water catchment areas and their vegetation cover;
ii) Improved management and conservation of wetlands;
iii) Promotion of technology for efficient and safe water use, particularly for water and waste water treatment, and recycling.

3.2.5 Wildlife Policy (1998)

In view of the dynamic and complex nature of the wildlife resource and the challenges ahead on conserving it, the Government policy for the wildlife sector aims at involving a broader section of the society in wildlife conservation, particularly the rural communities and the private sector. The role of the public sector is to stimulate and guide the local communities and the private sector by administering, regulating and promoting the management of the wildlife resource. The Wildlife Policy addresses among others the following national challenges:-

(a) to conserve areas with great biological diversity which are representative of the major habitats of Tanzania;

(b) to continue to support and where necessary, enlarge the PA network as the core of conservation activities;

(c) to promote involvement of local communities participation in wildlife conservation in and outside the PA network;

(d) to increase foreign exchange earnings;
(e) to integrate wildlife conservation with rural development;
(f) to foster sustainable and legal use of wildlife resources;
(g) to ensure that wildlife conservation competes with other forms of land use;
(h)to enhance the recognition of the intrinsic value of wildlife to rural people;
(i) to minimize human-wildlife conflicts wherever they occur;
(j) to regulate wildlife-related research to be of direct value to wildlife management;
(k) to build the capacity of the wildlife sector and foster professionalism; and
(l) to create enabling environment for international co-operation in wildlife conservation.

Wildlife conservation is an important form of land use in Tanzania that generates a substantial amount of revenue and foreign exchange. If well developed, wildlife conservation could compete with other forms of land use. However, wildlife conservation has not been developed to its full potential, especially outside PAs, and rural communities have benefited little from those forms of wildlife utilization taking place in settled land. The policy aims at allowing rural communities and private land holders to manage wildlife on their land for their own benefit.

The Government realizes that wildlife and the land resources that support it are critical to smallholder agriculture, animal husbandry, subsistence hunting and fishing and other economic activities. This Policy, therefore, recognizes the need to empower local communities by giving them wildlife user rights and management opportunities and responsibilities. To effectively capitalize on opportunities and successfully carry out responsibilities, communities need normative authority and access rights to both wildlife and benefits derived from their use.

The policy recognizes that wildlife conservation and management can no longer disregard interests of rural communities, especially adjacent to protected areas. Animal husbandry, for example, is an activity that occupies many communities that live adjacent to protected areas. This activity can easily and profitably be tolerated and incorporated in these areas. The Policy also realized that communities must obtain benefits if they continue to bear significant costs of living with wildlife and managing them well.

3.3 The Legal Framework

3.3.1 Environmental Management Act (2004)

This Act (2004) has some provisions on the management of rangelands. Under Section 70 (subsections 1 and 2) the Minister may in consultation with relevant sector Ministers issue guidelines and prescribes measures for the sustainable management and utilization of rangelands. In issuing the guidelines and prescribing measures, the Minister shall be guided by the carrying capacity of the land; the conservation of the soil; the risk to degradation faced by rangelands; and any other factor, which the Minister may in consultation with relevant sector Ministers, consider appropriate. The present Guidelines have been issued under the mandate of this Act.

3.3.2 The Land Acts

3.3.2.1 Village Land Act No. 5 (1999) and its Regulations of 2002

The Village Land Act (VLA) of 1999 provides for the management and administration of land within village boundaries and permanent features of the land. The Act recognizes communal land within boundaries for certain groups in a village. Land can be occupied through a Certificate of Customary Rights of Occupancy (CCRO), for which a certificate will be issued.

The VLA has provisions that indicate recognition of common property for pastoralists, such that land sharing arrangements are possible, including the issuance of a CCRO over land held under traditional pastoral tenure. However, the government recognizes that the problem of non-compliance still remains to be tackled.

3.3.2.2 Land Use Planning Act No. 6, 2007

This Act gives the steps to follow when agro pastoral and pastoralists wish to secure their grazing land, including the formation of a pastoralist association. However, to date these provisions have not been implemented.

3.3.2.3 Grazing Land and Animal Feed Resources Act, No. 13, 2010

The Act (No. 10, 2010, Section 17(3)) seemingly offers greater protection for pastoralists: *"subject to other written laws, the Village Council shall prohibit, restrict, limit or control entry into grazing land for purposes of cultivation, mining, establishment of wildlife protected areas or any other use other than livestock keeping."*

Further, the Act states that the Village Council should set aside part of communal lands for strategic grazing land in accordance with the Land Use Planning Act (2007). This Act gives the steps to follow when pastoralists wish to secure their grazing land, including the formation of a pastoralist association. However, the implementation of such acts to the large extent have been a challenge due to non-compliance consequently leading to land use conflicts which have currently increased in many parts of the country .

3.4 The Strategies

3.4.1 The Agriculture Sector Development Strategy (2001)

Under the Agriculture Sector Development Strategy (ASDS) (2001), it is stipulated that the government will prepare comprehensive land use maps to indicate areas suitable for cropping and grazing, and for private sector investment. The strategy highlights the future importance of large-scale investment in agriculture, and this is likely to mean further land alienation from local communities and potentially increased conflicts amongst various resource users. During field consultations it was revealed that there are several villages in Simanjiro and Kilosa Districts which have land use plans showing areas for different uses.

In villages where there are no land use plans villagers have their own local arrangement in which they demarcate areas for different uses such as grazing lands, crop lands and recreation. However, the main challenge is compliance. For example it was revealed that during the dry season when there is shortage of pasture and water, some livestock keepers graze their animals in the farms as well as passing through on their way to watering sources.

Other relevant pieces of legislation include:

(i) The Courts (Land Disputes Settlements) Act, 2002 and its Regulation of 2004;

(ii) The Wildlife Conservation Act No. 5, 2009; and

(iii) Tanzania Investment Act, No. 26, 1997.

The Government acknowledges, however, that despite the existence of these quite elaborate policy and legal frameworks their implementation has not always been very smooth. Conflicting and sometimes contradicting policy and legal environments have fuelled many conflicts. For example, the flexibility afforded by the Village Land Act in how boundaries of each village land area can be defined has been inadvertently suppressed by the Land Use Planning Act, which requires this to be done through a formal survey, which few villages have the capacity to undertake or fund. Nevertheless, there is increasing coherence around the recognition of customary management of communal resources.

4.0 RANGELAND MANAGEMENT INSTITUTIONS

4.1 Overview

The pastoral policy discourse in Tanzania since independence has been largely influenced by modernisation ideology viewing pastoralism as an unproductive and environmentally damaging relic of the past. According to this ideology livestock keeping need to be brought in line with modern development through land titling, enclosure of the commons, and the establishment of permanent settlements. While Government policies have encouraged farmers to expand their fields in order to make the country self-sufficient in food, pastoralists have been encouraged to reduce livestock numbers to prevent overgrazing and soil erosion. As a consequence, livestock and range managers are trained to see growth in livestock as an urgent development option.

Since independence, a number of development programmes aimed at improving the livelihoods of pastoralists have been initiated. Guided by modernisation ideology, programmes have focussed on settling pastoralists as the way to bring them improved services and economic opportunities. The efforts started with the Range Development and Management Act of 1964, which sought to conserve, develop and improve grazing land through a number of legislative strategies.

The Act had in its First Schedule specified areas of Tanzania as range development areas. For each range development area a Range Development Commission (RDC) was established. The RDCs, were in charge of rehabilitation, conservation, development and improvement of the natural resources of

the range development area. Entry into, residence and settlement within a range development area were closely controlled.

The Range Development and Management Act was followed by the ten-year long Maasai Range Development and Management Project, which commenced in 1970. This project was funded by USAID and focused on costly technical inputs. The project aimed at the formation of ranching associations, improved range management, improved animal health facilities, raised livestock qualities, increased water supplies, improved livestock marketing, and increased extension services. In the end, the project failed as the 'improved' breeds proved to be unsuitable for the local climate; they tired easily, required more food and water than the indigenous breeds, and were more susceptible to disease than the indigenous breeds.

The next large-scale programme to modernize pastoralism in Tanzania was the 'Operation *Imparnati*' (meaning 'permanent habitation' in Maasai) from the late 1970s. This programme was based on the idea that the Maasai were leading a nomadic life and that they should be settled. It was a follow-up of the larger Villagisation Programme in the late 1960s and early 70s that aimed at the modernization of traditional agriculture through the resettlement of the rural population in concentrated Ujamaa villages. However, 'as far as the Maasai were concerned, Ujamaa villagisation proved to be a largely not very effective exercise of rearranging relatively mobile homesteads around existing services.

Operation *Imparnati* implied the erection of homesteads in a large circle with various village services such as water supplies, dips, schools, veterinary services, and dispensaries located in the centre. The primary economic activity was to be livestock and especially diary production, but some agriculture was also encouraged. These permanent villages, which were planned without consulting the beneficiaries, ended up concentrating livestock, while hindering adequate transhumant pasture rotation.

Lessons learnt from these early failed experiments show that the establishment of functional and sustainable rangeland management will largely depend on the existence of strong institutions at the national, district and local levels. The rangeland management institution is the body or group that will take on the roles and responsibilities of community-based rangeland management. The strength of the rangeland management institutions and their coordination is therefore critical, including the skills and capabilities of its members to carry out the duties assigned to them.

4.2 Existing Institutional Framework for Rangeland Management

There are various institutions which are directly or indirectly involved in different levels in rangelands management from national, district to local level (Figure 1). At national level there are different ministries, departments and agencies including Ministry of Livestock and Fisheries Development (MLFD), Ministry of Agriculture, Food and Cooperatives (MAFC), Ministry of Lands, Housing and Human Settlements Development (MLHHSD), Ministry of Water (MoW), Ministry of Natural Resources and Tourism (MNRT), Prime Minister's Office - Regional Administration and Local Government (PMO-RALG), National Environmental Management Council (NEMC) and Vice President's Office (VPO) Division of Environment in the ministry of Environment.

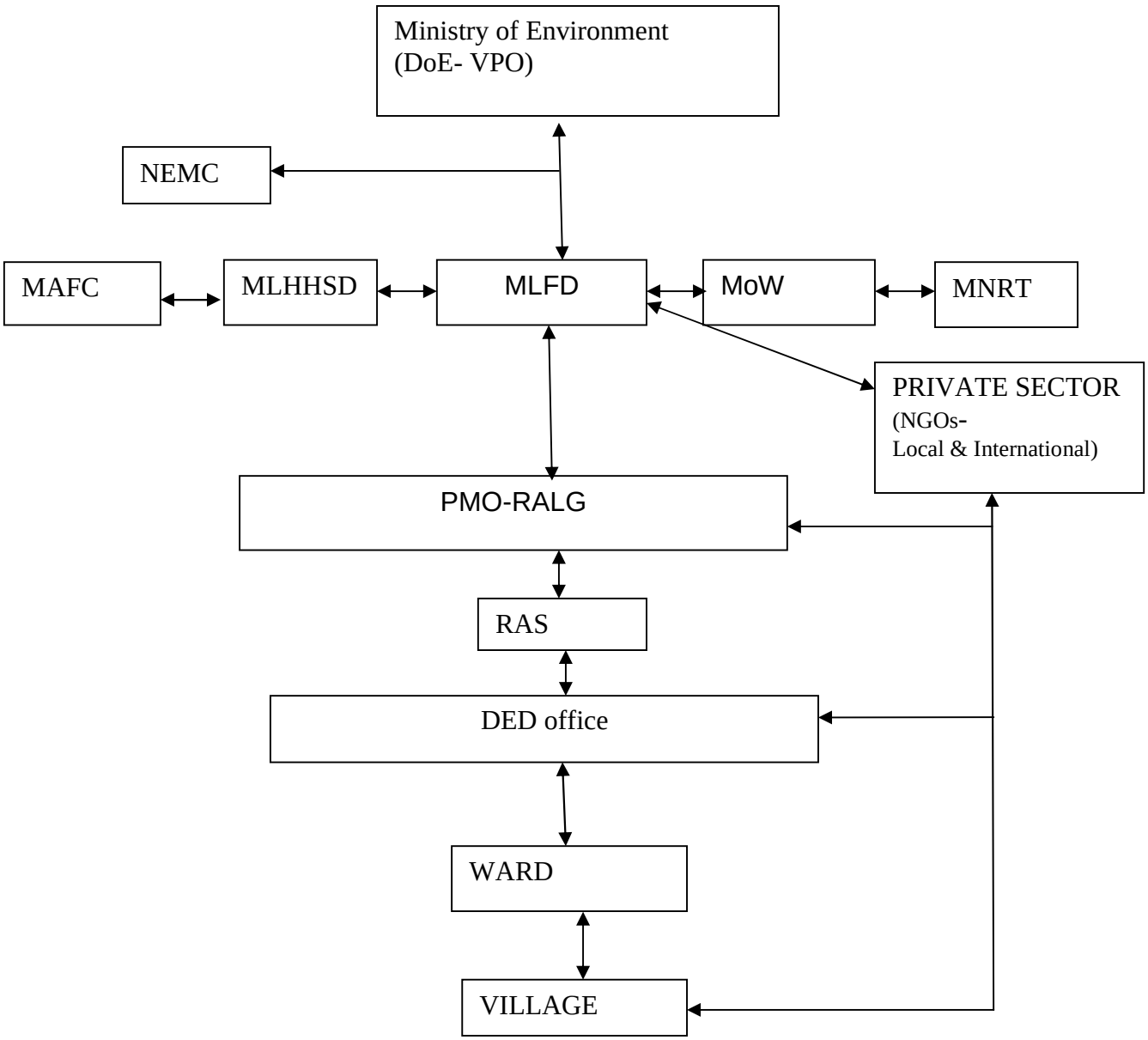

Figure 1: Institutional Framework for Rangeland Management

At district level the set up include District Executive Director (DED) office comprising different departments such as district agriculture Irrigation and cooperatives (DAICO), district livestock and fisheries office and district community development office etc. At local level there are wards and villages where there are farmers and agro pastoralist, the main users of the rangelands

4.2.1 National level

As already pointed out in Section 2.3.1 of these Guidelines, the Environmental Management Act (2004) mandates the Minister of Environment to take care of some provisions on the management of rangelands. Under Section 70 (subsections 1 and 2) the Minister may in consultation with relevant sector Ministers issue Guidelines and prescribe measures aimed at the sustainable management and utilization of rangelands.

At the ministerial level, the Minister of Environment (Division of Environment and NEMC) collaborates with the Ministry of Livestock and Fisheries Development which, among others, is responsible for overseeing policy matters pertaining to rangelands management in Tanzania. The Ministry of Livestock and Fisheries Development, on the other hand, also collaborates with the Ministry of Water which is principally responsible for water supply and water resources in Tanzania. The Ministry of Livestock and Fisheries Development also collaborates with the Ministry of Agriculture, Food Security and Cooperatives, and the PMO-RALG which is responsible for Local Government Administration, including District Councils, DED office.

4.2.2 District and lower level coordination

Currently, the administration and institutional arrangements for rangelands management at the district level is through the Rangeland Units[1] in the Department of Livestock and fisheries development - one of the departments under the DED's office. The DED is responsible to the Regional Administrative Secretary (RAS) who is answerable to PMO-RALG which is linked to the Ministry of Livestock and Fisheries Development (see figure 1). On the other hand, at lower level the Rangeland Units are linked to the wards and villages and finally to livestock keepers through the District Extension Services.

[1] These units were formally in the Ministry of Agriculture and Livestock before been transferred to the new Ministry of Livestock and Fisheries Development.

The main objectives of the Rangeland Units are to identify and demarcate rangelands boundaries in the district and in the villages, in collaboration with the Ministry of Lands, and to improve livestock production through sustainable rangeland management. These improvements include supervision of rangeland infrastructure (such as dips, veterinary services, abattoirs, livestock markets, and chaco dams). It also includes training of livestock keepers in pasture improvement through demonstration plots, provision of pasture seeds, and training on tsetse fly control. In Kilosa District for example, this includes improvement of animal breeds (in collaboration with Heifer International and Sokoine University of Agriculture projects) to increase milk production and quality to livestock keepers.[2] Equally, in Simanjiro District the Rangelands Unit also deals with pasture improvement, tsetse fly surveys and control, awareness creation to local land users on how to use local resources in a sustainable manner, and the determination of carrying capacity of the district based on the available rangelands. Other activities of the Rangelands Unit include determining district requirement for pasture production and seeds, hide and skin improvements and rangelands management, identification and traceability of animals.

Besides the involvement of government institutions at different levels (see figure 1) there are also Private sectors which include NGOs local and international and CBOs. The private sector is an important actor in sustainable rangelands management. It is however, acknowledged, in national level assessment and stakeholder consultations, that private sector engagement in rangelands management projects should be enhanced. The creation of a favourable environment for private sector engagement would entail provision of livestock financial and marketing support systems and facilitation to develop innovative market-based mechanisms and rangeland resource conservation. Community Based Organizations (CBOs) and Non-Governmental Organizations support communities in the implementation of sustainable rangeland management initiatives including awareness creation, training and community empowerment. For example in Simanjiro, the district has pasture improvement pilot projects in three villages financed by VECO (NGO) and two villages sponsored by DADPS. Tsetse fly control is being implemented in 6 villages financed by CDG and DADPS.[3]

[2] Stakeholder Consultations, Kilosa, February, 2014.
[3] Stakeholder Consultations, Simanjiro, February, 2014.

4.2.3 Major constraints

Generally, there is a shortage of Livestock Officers, including Rangeland Officers. In Kilosa District, for example, there were about 47 Livestock Officers in the district, 38 of whom were working in the villages. However, among these Livestock Officers only two were Rangelands Officers based in the district headquarters at Kilosa.[4]

Secondly, inadequate institutionalisation of district participatory land use management (PLUM) teams hinders the sustainability of the VLUP process. For example, there is no regular periodic updating of land use plans, no refresher training for village technicians, and no systematic use of plans in district planning or resource allocation. The implementation of plans and related by-laws is poorly monitored and evaluated. Other limiting factors include bureaucratic red tape, too many forms to deal with, poor levels of skills required to manage the process, and an absence of infrastructural support and manpower.

One research done in Handeni by the Legal and Human Rights Centre (LHRC) and Tanzania Pastoralists, Hunters and Gatherers Organisation (TAPHGO) noted, for example, that communities were not adequately informed about VLUP and as a result the process negatively affected some groups, and particularly the most vulnerable pastoralists and women. The process also triggered a land rush by the better-informed taking advantage of the opportunity to get access to large tracts of land. Local governance and decision-making processes failed to address the issue and thus protect the more marginalized groups.

In Babati and Monduli Districts, problematic VLUP has been blamed on insufficient participation by stakeholders, lack of robust, transparent, and accountable implementation strategies, inadequacy of qualified staff, and the lack of a “holistic approach” to the planning process.

Other conflicts in some areas have arisen over the size of land allocated to pastures, access routes to pastures and water sources, and access across village borders to common use resources. There have been instances where village-trained GPS readers have surveyed farms knowing that they were not approved by village meetings and were in areas earmarked for pastures. There are other examples where landowners have sold a larger piece of land than was officially theirs to sell, benefiting themselves and village officials who received a percentage of the sale.

[4] Stakeholder Consultations, Kilosa, February, 2014.

Support to the development of good governance institutions and structures at different levels are, therefore, necessary. This will include institutions required by the village certification and PLUP processes, but may also require others too, such as cross-border peace committees or institutions governing watering points. Specifically, there should be a clear push for the involvement of respected, and trusted village representatives in decision-making bodies, including men, women, and youth.

More specifically, adequate time and resources needs to be invested in the resolution of boundary and other rangeland use conflicts. This is particularly so in conflicts that are deeply rooted and complex as those that have recently happened in Kilosa and Kiteto Districts. All staff should be trained in conflict resolution/transformation. Build up the understanding of communities that conflicts must be resolved if land is to be secured should be built up. In order to do this, it is likely that trade-offs and compromises will be required. Multiple community meetings may be needed. A conflict monitoring system should be developed.

Embedding PVLUP in larger development processes can aid this, as long-term development goals and visions can provide a common goal for different actors to work towards.

4.2.4 Defining a Rangeland Management Unit

The rangeland management unit is the area of land over which the PRM institution will have primary jurisdiction and authority. Defining this area and establishing the presence and condition of the resources found within it through a participatory rangeland resource assessment is the next step in the process of participatory rangeland management.

Once the rangeland management institution has been identified and its roles and responsibilities have been clarified and agreed, the next step is to establish the ‘boundaries’ of its jurisdiction. These are not hard and fast boundaries and should include reciprocal grazing arrangements with neighbors.

It is likely that a map of the approximate rangeland management unit under discussion will have been produced as part of the investigation stage, and will show the types and distribution of the resources found. The rangeland management institution should confirm that this map, its ‘boundaries’, and its content, provide a sufficiently detailed inventory of the resources found within the management unit. Ground truthing should also be carried out to ensure that the map reflects the situation on the ground.

It may be possible for an NGO or government office to assist the community in digitizing the community map (including the boundaries), although this is not necessary. Nor is it always empowering for the community members.

As has been noted, 'boundaries' in pastoral areas are seldom if ever like boundaries in more sedentary communities, as the rangelands are communally managed and different groups of pastoralists have well established reciprocal grazing rights in neighboring management units. Boundaries can therefore be considered something of an alien concept. Traditionally, boundaries where one group's authority ended and another's begun were simply 'known'.

However, for local government to approve the authority of the rangeland management institution over an area of rangeland, it will be necessary for rangeland units to be broadly defined - provided that all parties understand that the users themselves must then work out their reciprocal grazing rights. Discussions and negotiations with neighboring rangeland management institutions at the early planning stage however, can sharpen the debate and ensure that this issue is not over looked.

The outcome of the process outlined above should be a community-drawn map (perhaps supported by a digitized GIS map) that defines the following:

(i) The 'known' boundaries of the rangeland management unit (albeit recognizing that these are porous and flexible);

(ii) The different types of natural resources found in the management unit, including grazing areas, watering points, non-timber dryland products, community and individual enclosures/exclosures, and mineral sites such as salt licks. The most important areas can be highlighted as 'rangeland productivity hotspots'— without which the whole pastoral system that functions in the area is at risk and which therefore should be afforded the most protection, e.g. dry season grazing areas or watering points.

(iii) Other important sites, services or resources including sites of cultural and religious importance, settlements, agricultural land areas, health posts, etc.

(iv) Key mobility routes can also be shown on the map, which will highlight the different usage of resources and parts of the rangeland management unit at different times of the year.

The mapping of soil types is another potentially useful exercise that can generate information important for future resource management decisions. Government representatives may be able to provide soil maps or other useful information for understanding different soil and habitat types.

Community and government representatives will also have to decide on broad, but useful, habitat or rangeland condition types within each soil type. These habitat or range condition types can then be mapped on top of soil types. The resulting map can be used to guide both management and assessment decisions for specific sub-units within the overall rangeland management unit. The chosen habitat types should therefore be broad enough to encompass large areas of land (probably on the scale of hundreds of hectares), but specific enough to inform management planning. Individual communities, however, may want to divide the landscape into more, or different, categories or subunits that are more meaningful to them in terms of both resources and management.

Finally, different management activities that are currently being undertaken within the PRM area should also be considered. These might include areas under cultivation; areas where trees have been cleared or thinned; areas that have recently been burnt; areas where other rangeland restoration efforts are being undertaken; and any other targeted management activities. Such information should be fully documented and supplement the map of the rangeland management unit.

5.0 STATUS OF RANGELAND RESOURCES

5.1 Rangeland Resources

In Tanzania the rangelands resource is vast, covering an approximate area of 60 million hectares, or a third of the country and are used by 20-30% of the population. This area is capable of supporting over 20 million Tropical Livestock Units (TLUs) and millions of wildlife. About 24 million hectares of these rangelands are infested with tsetse flies.

There is no clearly defined boundary to the rangelands except for privately and state owned rangelands. Boundaries move according to climatic conditions such that when the area is very dry livestock keepers move to other areas with suitable conditions for livestock keeping.

Rangelands are an important economic resource and have significant cultural and heritage values for Tanzanians. They are also intrinsically valuable because of their areas of high wilderness quality.

Rangelands are also ecologically important because of the significant number of endemic species, high species diversity, areas of ecological and geomorphologic integrity, unique ecosystems and habitat for rare, threatened and endangered species. Utilization of range resources in planned open and sparse areas is common in places where land is abundant. In some instances these areas are owned and managed communally and sometimes privately.

According to Rodgers *et al*. (2003) northern Tanzania's savannah rangelands contain some of the most spectacular and diverse wildlife populations found anywhere in Africa, and one of the most biologically and economically important natural resources in modern Tanzania. This dual importance is central to the way wildlife in the region is managed and used. The biological importance attracts the involvement of international and national conservation agencies with a mandate to maintain wildlife populations and their habitats in a natural state. The economic importance is apparent at local, regional, and national scales. Wildlife-based tourism provides one of Tanzania's largest and most rapidly expanding sources of national revenue. At the local level wildlife can provide substantial household income to rural communities, but wildlife can also create negative impacts through losses to crops, livestock, and human life.

The ability of wildlife in Tanzania to continue providing these values at the landscape level depends to a great deal on the actions and interests of rural communities.
Although a large and extensive network of National Parks and other protected areas has been established in the region, these parks are insufficient to conserve wildlife and key habitats. Tarangire National Park, for example, contains less than 15% of the annual ranges of migratory species such as zebra, wildebeest, and elephant. Around Tarangire and throughout the region, wildlife is dependent on communal and private lands for effective conservation of migratory routes and dispersal areas. On these communal and private lands, wildlife management is not succeeding and the resource's values are being lost.

Wildlife in northern Tanzania's savannahs and grasslands is subjected to unsustainable levels of off-take at present, particularly from bush meat poaching and licensed resident hunting. Key corridors and dispersal areas, such as areas adjacent to Kilimanjaro, Tarangire, and Lake Manyara National Parks, are being lost to agriculture and settlements. At the root of these problems and the challenge of conservation in northern Tanzania's landscape is wildlife's inability to compete as a locally valued

form of land use and livelihood option. Local communities must be able to derive benefits from wildlife resources occurring on village lands in order to have incentives for conservation.

Considerable progress has been made in Tanzania in creating local wildlife-based benefits from tourism. This has included the creation of several Wildlife Management Areas in major wildlife dispersal areas. However, major institutional constraints must be addressed if viable community-based conservation is to be enabled as advocated by Tanzania's Wildlife Policy (Rodgers *et al*., 2003). The evolution of this central issue over the long and short terms will have a profound impact on wildlife populations, and the values they create, in Tanzania.

5.2 Where are the Rangelands in Tanzania?

According to some of the agro-ecological classifications published (e.g. De Paw, 1983), semi-arid rangeland resource zones in Tanzania can be identified in two distinct geographical areas: one in the central part of the country and one in the north-east stretching into Kenya. The central semi arid zone overlaps eight regions including much of Shinyanga, Singida and Dodoma, and some parts of Mwanza, Arusha, Kilimanjaro, Tabora, Iringa and Mbeya.

The semi-arid rangeland areas of Tanzania are composed of a variety of landscapes that are typical of undisturbed regions of semi-arid East Africa. The northern arid lands constitute level to undulating plains between 1300-1800 m.a.s.l. while the Maasai steppes constitute rolling plains of 500 to 1500 m.a.s.l. The central semi arid rangelands have gently undulating plains between 1000 and 1500 m.a.s.l.

The soils include well-drained sands of low fertility on the uplands and alluvial hardpan and salt affected soils in shallow internal drainage areas of the eastern and Lake Eyasi rift valleys. Extensive flat plains in the north, around Shinyanga, are covered by black cracking clays formed in an old lake-bed.

Rough estimates indicate that between 45 and 75 percent of Tanzania receiving a mean annual rainfall of 200-800 mm is susceptible to land degradation problems. The principal areas affected are the arid central part of the country. These include the region surrounding the new capital of Dodoma, the Lake Victoria Basin (Sukumaland) and the Maasai steppe stretching northward to the Kenyan border. In the arid central belt, land degradation is revealed in alluvial or residual surfaces subject to

stripping of top soil and accelerated run-off, gully erosion on the slopes, and/or sheet erosion or deposition on flat lands.

5.3 Vegetation

The vegetation of most of the semi-arid rangelands of Tanzania is characterized by grasslands, dense thickets, woodlands and seasonally flooded grasslands. Most of this natural vegetation has over the years been considerably modified by human occupation. Deforestation and land degradation in arid and semi-arid lands are on the increase all over Tanzania. The major causes include forest clearing for agriculture expansion, shifting cultivation, fires to stimulate grazing pastures, human settlements, charcoal making and mining. The grasslands are still characterized by early succession species and they will probably remain open grassland as long as frequent burning continues.

The northern Tanzania semi-arid rangelands have a lower density and fewer species of trees that produce fleshy fruits. Additionally, the most abundant potential animal plant foods are seasonally available Acacia seeds/pods, *Adansonia digitata* leaves and flowers, grass seeds, and the underground parts of marsh plants.

5.4 Rainfall Patterns and Climate Change

Rainfall throughout both areas is uni-modal, most usually falling within the December to March period with between 70 and 90 days of rain per year. Importantly, rainfall in the central zone (500 to 800 mm per year) is less reliable than that in the north-eastern zone (600 to 800 mm). Potential evapo-transpiration is, however, over 2,000 mm per year. The onset and duration of rainfall in semi-arid areas are inherently stochastic, and the probability of the occurrence of acute dry spells during a growing period is high.

The health status of the rangelands depends much on the quality and quantity of the rangeland resources which depends largely on the season. Rangelands are grazing-dependent systems. Due to strong seasonal variation, the seasonal risk of overgrazing is short. Grazing stimulates vegetation growth, prevents bush encroachment, fertilizes the soil, enhances its water filtration capacity by hoof action breaking the soil crust, aids in seed dispersal to maintain pasture diversity, and enhances the cycling of nutrients in the ecosystem through the wet and dry seasons.

Evidence exists to support the view that light or moderate grazing increases rangeland productivity in many grazing systems. It has been shown that productivity is higher under controlled and repeated

grazing with adequate recovery times in between rather than complete exclusion from grazing: overprotection can result in a decline in species richness. On the other hand, uncontrolled, intensive grazing without appropriate rest can lead to the degradation seen in many pastoral areas today.

5.5 Rangeland Infrastructure

Rangeland infrastructures are very important for sustainable utilisation of the rangelands. There are many livestock infrastructures in rangeland areas in Tanzania. The main infrastructures include dips, livestock markets, chaco dams, crashes, abattoirs and cattle routes. The status of these infrastructures in many rangelands in Tanzania is variable in terms of quantity and quality. In Kilosa District, for example, out of the 21 dips existing only 8 were functioning; and these were not in good condition. Of the 15 chaco dams existing in the district only 2 were in good condition. The rest of the dams were not working - especially during the dry season. In Simanjiro District it was revealed that there were 25 dip tanks out of which three were not working. Of the 24 chaco dams existing three were not working. Of the 6 existing primary cattle markets 3 had no infrastructure. It was revealed, however, that every ward had a livestock field officer.

5.6 Rangeland Resource Assessment

A participatory resource assessment report is part of the key documentation for PRM that will enable communities to take up the legal management of the resources. The community should be supported in undertaking the assessment exercises and preparing the report as key rangeland management tools.

Once the overall rangeland management unit has been defined and agreed upon by both the rangeland management institution and the relevant government office, it is necessary to collect more detailed information on the types and current condition of the different rangeland resources. This can be achieved through carrying out a participatory rangeland resource assessment. A participatory rangeland resource assessment has two main objectives:

(i) To provide an inventory of resources and their condition as a contribution to the rangeland management plan and the rangeland management agreement, including the identification of ‘rangeland productivity hotspots’ and/or areas that are particularly sensitive and/or may require specific management interventions; and

(ii) To provide a technical baseline of the resources and their condition against which to monitor subsequent changes, including the effects of the management actions that will be agreed upon in the rangeland management plan. As such it is a first step in the design of a participatory monitoring system.

The participatory rangeland resource assessment process consists of several key steps:

(i) Defining the rangeland sub-units or zones within the overall rangeland management unit based on use, management, soil, and habitat areas, for use in the PRM agreement and for data collection;

(ii) Deciding where to collect baseline data based on the identification of different sub-units or zones;

(iii) Deciding what data to collect, and how, depending on the level of detail required and/or specific management concerns for the area;

(iv) Documenting assessment data collection protocol, including the design of data collection forms and identification of feedback/verification methodologies;

(v) Collecting baseline data by a team made up of community and government representatives;

(vi) Interpreting results by a team made up of community and government representatives;

(vii) Producing the assessment report, including the results of the mapping exercises, the results of the data collected in each rangeland sub-unit or zone, an interpretation of these results, and management recommendations for each sub-unit or zone based on these results. The report can best be made available in the appropriate local language.

6.0 THE GUIDELINES AND RECOMMENDED ACTIONS

6.1 Preamble: Principles and Values of Rangeland Management

These Guidelines and the Recommended Actions have been developed on the basis of a set of principles and values established through the stakeholders' consultative meetings and literature review. The principles and values are that:

i) Ecological sustainability of natural resources should be the underlying principle, and the principle against which sustainable use of rangeland resources must be tested.

ii) The Guidelines should be in compliance with the range of national policies and strategies;

iii) Development of strategies should rest primarily with stakeholders and other local communities, but in consultation with government;

iv) While legislative and compliance responsibility for ensuring ecologically sustainable management resides with government at all levels, the primary task for natural resource management within rangelands rests with the stakeholders, in accordance with the objectives, planning processes and relevant legislation;

v) Equitable opportunities for sustainable multiple use and benefit of the rangeland resources for present and future generations should be assured;

vi) The rights and responsibilities of rangeland users and others who use or have an interest in the rangelands, should be respected;

vii) Security of tenure and access to rangeland resources should be ensured;

viii) Implementation of the objectives of ecologically sustainable development should be applied across the rangelands, irrespective of how the land is held and used;

ix) The aspirations and inherent rights of rangelands dependent communities, their relationship with the rangelands, and the need for culturally appropriate negotiation processes, must be recognized;

x) Prevention of any resource degradation is more effective than rehabilitation; and that

xi) All rangeland managers, users, and special interest groups should be committed to and involved in an ongoing development, implementation and review of these Guidelines and the suggested Actions.

6.2 Specific Guidelines and Recommended Actions

Guideline 6.2.1: *Set Up a Viable Administrative and Institutional Framework for Rangeland Management*

Recommended Action 1: The Government will need to review its policies and programmes to ensure they facilitate the desired outcomes for the rangelands at both national and community levels. An essential part of managing Tanzania's rangelands is reviewing, monitoring and evaluating the environmental, economic, social and cultural conditions of the rangelands. The Ministry of Livestock and Fisheries Development will have a central role in determining appropriate processes to report on these aspects. They will also have a role in assessing the impact of the national and district planning processes.

Recommended Action 2: A range of issues require institutional change, such as clarification of tenure arrangements arising from legal decisions. Such issues will need to be addressed within the political and legal systems at the national level. Many of the issues and actions identified in this document are already being addressed through existing government structures. In some cases, issues and suggested actions will be the responsibility of and may need to be referred to other MDAs. The Ministry of Livestock and Fisheries Development may also need to establish an effective mechanism to oversee and evaluate the implementation of relevant actions that require a national response. Local governments will need to assess the Guidelines and Recommended Actions and implement as appropriate to their responsibilities.

Recommended Action 3: Villages should be used for conservation of rangelands. Define rangeland management units and establish the presence and condition of the resources found within it through a participatory rangeland resource assessment. Once the rangeland management institution has been identified and its roles and responsibilities have been clarified and agreed, the next step is to establish the 'boundaries' of its jurisdiction.

Recommended Action 4: Support the development of good governance institutions and structures at different levels. This will include those required by the village certification and LUP processes, but may require others too, such as cross-border peace committees or institutions governing watering points. Push for the involvement of respected and trusted village representatives in decision-making bodies, including men, women, and youth.

Recommended Action 5: Rangeland management experts at the district level should provide support to local institutions engaged in natural resource management, helping them to develop and implement their own natural resource action plans.

Guideline 6.2.2: ***Develop an Ecologically Sustainable Rangeland Management System***

Recommended Action 1: Understandable and unambiguous roles for all people and organizations with rangeland management responsibilities should be outlined, including mutual respect, recognition and support for traditional practices where they are appropriate. Take conscious steps and actions to ensure that women fully understand their land rights and land securing and VLUP processes. This should be carried out as part of a wider programme of empowerment and as part of broader development processes.

Recommended Action 2: Sensitive management of the rangelands is mandatory to protect and restore, where possible, commercial and non-commercial values, provide opportunities for multiple use, and protect biodiversity.

Recommended Action 3: Property rights legislation in all districts should provide secure tenure arrangements (including meeting the needs of local peoples), clear definition of rights and duty of care, and which set suitable framework for the diverse and multiple uses within land capability and according to land suitability.

Recommended Action 4: Assist pastoral groups in communities to register customary titles to grazing land through current legislation as a CCRO. This will involve identifying and reaching agreement on who constitutes the "group" and how best the collective title can be defined in law. Then the appropriate legal custodian of the title needs to be agreed upon. The opportunities for cross-village shared grazing areas to be titled to one or two groups can also be explored, e.g. through the establishment of a pastoral association as the legal custodian.

Recommended Action 5: Managers need the information, skills and commitment to guarantee that rangeland enterprises are economically and ecologically sustainable. In collaboration with other stakeholders the government should support and strengthen technical support services on rangeland management.

Recommended Action 6: Efforts should be made to establish and promote appropriate livestock infrastructure in rangeland areas. Appropriate forage conservation practices for dry season feeding should be promoted. Adequate number of livestock watering points should be established as well as cattle dips and market facilities

Recommended Action 7: Financial and other institutions that plan and deliver services should be sensitive to the ecological time scale, the climatic variability and the regional differences in the rangelands which affect production levels and take into account the variability of commodity prices.

Recommended Action 8: The negative impacts of mining, tourism and other industries on rangeland resources should be reduced and prompt and adequate rehabilitation of rangelands affected by these activities should occur.

Recommended Action 9: Sensitive re-establishment and adjustment programmes should be in place for those whose pastoral businesses are not sustainable.

Recommended Action 10: There needs to be an awareness of the importance of the cultural and heritage values and social identity of the rangelands and the importance of protection and management of places of national importance.

Recommended Action 11: Capacity of local communities to make informed decisions when addressing local environmental conservation and natural resource management challenges should be built. Provision of rangeland management seminars to local leaders from government, education, religious and women's groups about the science and best practices of managing livestock and rangelands be taught by trained community members and extension staff.

Guideline 6.2. 3: ***Conserve the Natural Environment for Sustainable Rangeland Management***

Recommended Action 1: A comprehensive, adequate and representative conservation reserve system should be established, on a national bio-regional basis integrated with conservation management strategies on other land.

Recommended Action 2*:* The Ministry of Livestock and Fisheries Development, in consultation with rangeland users and managers, should develop agreed criteria and indicators for ecologically sustainable rangeland management and business viability.

Recommended Action 3: Surface and groundwater resources of the rangelands should be managed in a sustainable manner to ensure long-term quality and availability.

Recommended Action 4: Livestock Early Warning System (LEWS) for disaster management and impending forage shortage should be strengthened.

Guideline 6.2.4: ***Develop National and District Strategies***

Recommended Action 1: Policy development processes, within and between all levels of government, should be implemented that will lead to integrated and coordinated programmes and services.

Recommended Action 2: Government should assess all current and future policies and programmes impacting on the rangelands against the Principles and Guidelines outlined in this document.

Recommended Action 3: Government to review existing policies across all jurisdictions and assess their effectiveness, impact and consistency with this set of Guidelines. They should ensure broad community consultation to determine the potential impact on the rangelands of policies and legislation, including international agreements and conventions.

Recommended Action 4: Communities in the rangelands need to develop tailored (district) strategies to further the ecologically sustainable management and social and economic viability of the rangelands and, where appropriate access government support programmes with an integrated problem solving strategy.

Recommended Action 5: District planning should be flexible and responsive to the ongoing and changing needs of rangeland communities, managers and the environment.

Recommended Action 6: The particular rights and interests of local people in rangelands should be incorporated in rangeland planning and management.

Guideline 6.2.5: ***Ensure Gender Equity in Rangeland Management***

Recommended Action.1: The affirmative action against discrimination against women provided by both the Land Act and the Village Land Act must be upheld.

Recommended Action 2: There requirements for female representation in key decision-making bodies spelt out by the Land Tribunal Act (No. 2, 2002), it's Regulation (2004), and the Land Use Planning Act should be strictly adhered to.

Guideline 6.2.6: ***Facilitate Research and Development***

Recommended Action 1: The Ministry of Livestock and Fisheries Development should put in place an effective programme of strategic and adaptive research, development and extension, with direct involvement by rangeland users, managers and communities.

Recommended Action 2: The Ministry of Livestock and Fisheries Development and other research institutions in the country should address the declining resources and capacity in rangelands research.

Recommended Action 3: The Ministry of Livestock and Fisheries Development should actively encourage relevant research institutions (e.g. Sokoine University of Agriculture, etc.) to direct a regular portion of their research effort towards addressing issues facing the rangelands and to consult with rangeland users, managers and communities in setting research priorities.

Recommended Action 4: Scientists working in relevant fields should collaborate with rangeland managers and communities to utilize their knowledge and practical experience to find optimal solutions, and vice versa.

Recommended Action 5: Research organisations such as SUA should work with communities and rangeland users to implement the practical outcomes of their research efforts. They should ensure that research information is accessible and easy to understand.

Guideline 6.2.7: *Enhance Sustainable Land Use Planning*

Recommended Action 1: Adopt and embed VLUP in larger development processes.

Recommended Action 2: The development of village participatory land use plans should be guided by the Village Land Act and the Land Use Planning Act which grant power to VCs and their institutions to prepare such plans. The Land Use Planning Act also provides for the formation of planning authorities, functions, and procedures of developing village participatory land use plans and approval processes.

Recommended Action 3: Build the capacity of district staff, village leaders and village institutions to play effective role in VLUP.

Recommended Action 4: Shorten the number of days spent collecting information in each village by using updated maps/aerial photos or Google Earth maps. Use of high-resolution satellite imagery and GPS data means that information can be collected more efficiently than through lengthy field surveys. High-resolution satellite images are expensive, although once acquired one image could cover more than one village.

Recommended Action 5: Improve collaboration between land use and other development programmes such as agriculture, natural resource management, or resettlement programmes, which require land use planning for their own activities. Sharing costs can make more effective use of different funds available.

Recommended Action 6: Carry out interventions in several villages at a time using the same district's PLUM team members rotating from one village to another, depending on the type of activity each day. This is possible when the district has a well-trained and experienced PLUM team, which can be split into sub-groups working in more than one village at a time.[5] Working across villages will be especially effective where the villages share resources.

Guideline 6.2.8: *Ensure Constant Monitoring and Evaluation of Rangelands*

Recommended Action 1: Rangeland condition and trends should be assessed through an expanded monitoring and evaluation programme that incorporates indicators of production, biodiversity, water resource condition and climate factors on a landscape and biophysical unit basis.

Recommended Action 2: The Ministry of Livestock and Fisheries Development should establish and use effective monitoring mechanisms of socio-economic changes within the rangelands, including access to services and gaps and deficiencies in delivery mechanisms.

Recommended Action 2: Carry out a baseline participatory rangeland resource assessment and develop a long term monitoring programme. Key decisions will have to be made and agreed upon by both community members and government representatives. Development practitioners or natural resource advisors and/or a relevant research institution such as SUA can facilitate this process.

Recommended Action 3: Monitoring data should be used by all decision-makers in their policy development and planning processes and, in particular, by Government agencies in developing State of the Environment and other Reports.

6.3 Summary and Conclusion

[5] This strategy was shown to reduce costs to TSh 3,735,000 (USD 1,500) per village and was proved effective in a systematic adjudication project in Babati and Bariadi managed by the Ministry of Lands and the NLUPC (Mango and Kalenzi, 2011).

To summarize, the Government will need to review their policies and programmes to ensure they facilitate the desired outcomes for the rangelands at both Government and community levels. An essential part of managing Tanzania's rangelands is reviewing, monitoring and evaluating the environmental, economic, social and cultural conditions of the rangelands. The Ministry of Livestock and Fisheries Development will have a central role in determining appropriate processes to report on these aspects. They will also have a role in assessing the impact of the national and district planning processes.

A range of issues require institutional change, such as clarification of tenure arrangements arising from legal decisions. Such issues will need to be addressed within the political and legal systems at the national level. Many of the issues and actions identified in this document are already being addressed through existing government structures. In some cases, issues and suggested actions will be the responsibility of and may need to be referred to other MDAs.

The Ministry of Livestock and Fisheries Development may also need to establish an effective mechanism to oversee and evaluate the implementation of relevant actions that require a national response. Local governments will need to assess the Guidelines and Recommended Actions and implement as appropriate to their responsibilities.

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GLOSSARY OF TERMS

Best management practice

Best management practice is the use by managers of management approaches which are currently the most effective and sustainable available. “Best practice” evolves as new techniques and approaches are tested and proven to be more effective. In this document best management practice refers to activities by managers at the property, district or catchment and national level which best achieves the outcomes of economically and ecologically sustainable development.

Biodiversity

Biological diversity, or biodiversity, is the variety of all life-forms, the genes they contain, and the ecosystems of which they form a part. Biological diversity is generally considered at three levels: genetic diversity, species diversity, and ecosystem diversity.

Carrying capacity

The maximum population of a given organism that a particular environment can sustain. It implies a continuing yield without environmental damage.

Community

The people living in one locality

Conservation

The protection and maintenance of nature while allowing for its ecologically sustainable use ecologically sustainable development

Economic sustainability: Economic activity which is profitable over the long term without destruction of the resource base.

Ecosystem:A community of plants, animals and other organisms together with the non-living components of their environment.

Eco-tourism: Nature based tourism that involves education and interpretation of the natural environment and is managed for ecologically sustainability. The ‘natural environment’ includes

cultural components and ‘ecologically sustainable’ involves an appropriate return to the local community and long term conservation of the resource.

Endemic: Restricted to a specified region or locality.

Habitat: The structural environments where a plant or animal lives; eg deserts, grasslands, shrublands, woodlands.

Indigenous peoples: Strictly, born of an area, but in this document meaning people endemic (i.e. naturally occurring) to the area.

Land degradation: Land (soil, water and natural vegetation) degradation refers to undesirable changes in plant composition and soil and land surface characteristics.

Multiple use: The use of a resource for more than one purpose; e.g. the use of a pastoral property for pastoralism and ecotourism.

Pastoralism: The husbandry of domesticated grazing animals on natural or exotic pasture.

Pest species: A plant or animal that causes an undesirable effect in the region it inhabits. It may be native or introduced. ‘Pest’ is a relative term; a pest to one person may not be a pest to another.

Precautionary principle: The principle that, where there are threats of serious or irreversible environmental damage, then a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental damage.

Property management planning: The incorporation of all aspects of environmental and commercial matters into the planning of the operation of a farm business. Integrates objectives of improved profitability and ecological sustainable natural resource use. In this whole systems process, producers identify their personal objectives in the context of broader community aspirations.

Rangeland: The internationally recognised term for land where livestock are grazed extensively on native vegetation, and rainfall is too low or erratic for agricultural cropping or for improved pastures.

Resource: Anything that is used by people. A renewable resource can renew itself (or be renewed) either because it recycles quite rapidly (water), or because it is alive and can reproduce (organisms and ecosystems).A non-renewable resource is one whose consumption necessarily involves depletion.

Resource capability: The capability of a resource (eg land, vegetation) to sustain a particular use without degradation.

Savanna: Area of tropical or subtropical grassland with scattered trees. A dry climate, punctuated by a distinct summer wet season, encourages the growth of grasses and discourages the growth of trees.

Stakeholder: Any person, institution, organisation, agency, department, authority, dub, association or the like which has any interest in, or association with an area whether they reside there or not. This does not only mean a financial interest. Includes the public.

Stocking rate: The number of organisms per unit area (usually applied to grazing farm animals).

Tenure - certainty of; Knowledge about future legal rights to use of land.

Tenure – land: The title by which rights are held over a property; eg freehold or leasehold.

Tenure - security of; Legal rights to use land for specific purposes.

Total grazing pressure; The total impact of all grazing animals on a particular area; includes the impact of both domestic and feral stock.

Unsustainable practices: Practices which are not ecologically sustainable.

Wilderness areas: Large areas in which ecological processes continue with minimal change caused by modern development. Indigenous custodianship and customary practices have been, and in many places continue to be, significant factors in creating what non-indigenous people refer to as wilderness.