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**LAND USE PLANNING AND RESOURCE ASSESSMENT IN
TANZANIA: A CASE STUDY**

By

A.S.Kauzeni, I.S.Kikula, S.A.Mohamed & J.G.Lyimo

The Institute of Resource Assessment
University of Dar es Salaam
Tanzania

and

D.B.Dalal-Clayton

The Environmental Planning Group
The International Institute for Environment and Development
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Authors

Professor I.S.Kikula	Director
Professor A.S.Kauzeni	Coordinator - Agricultural Systems
Dr S.A.Mohamed	Coordinator - Remote Sensing
Mr J.G.Lyimo	Assistant Research Fellow

Institute of Resource Assessment
University of Dar es Salaam
PO Box 35097, Dar es Salaam, Tanzania
Tel: +255-51-43393/43500/43508; Fax: +255-51-43393

Dr D.B.Dalal-Clayton
Director, Environmental Planning Group
International Institute for Environment and Development (IIED)
3 Endsleigh Street, London WC1H 0DD, London, England, UK.
Tel: +44-71-388-2117; Fax: +44-71-388-2826.

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LIST OF ACRONYMS

DANIDA	Danish International Development Agency
EC	European Community
FINNIDA	Finnish International Development Agency
GTZ	German Agency for Technical Cooperation
HADO	Hifadhi Ardhi Dodoma (Dodoma Soil Conservation Project)
HASHI	Hifadhi Ardhi Shinyanga (Shinyanga Soil Conservation Project)
IRDP	Integrated Rural Development Programme/Plan
IUCN	International Union for Conservation of Nature and Natural Resources
KOTACO	Korea and Tanzania Corporation
NEMC	National Environment Management Council
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
ODA	UK Overseas Development Administration
PMO	Prime Minister's Office
RDD	Regional Development Director
RIDEP	Rural Integrated Development Programme
SIDA	Swedish International Development Agency
TAN-IRAN	Tanzania Iran Corporation
TANU	Tanganyika African National Union
TFAP	Tropical Forestry Action Plan
UEA	University of East Anglia

CONTENTS

Acknowledgements
List of Acronyms

CHAPTER ONE: EXECUTIVE SUMMARY

- 1.1 Background to the Study
- 1.2 The Scope and Approach of the Study
 - 1.2.1 The Tasks
 - 1.2.2 The Case Study Regions
 - 1.2.3 Interviews
 - 1.2.4 Documentation in Annotated Bibliography
- 1.3 Conclusions and Recommendations
 - 1.3.1 Coordination and Guidelines
 - 1.3.2 Data Availability
 - 1.3.3 Land Tenure and Land Ownership
 - 1.3.4 Central Planning, Urban Planning, 'Top-Down' Approaches and Participation
 - 1.3.5 Staff and Equipment
 - 1.3.6 Monitoring and Evaluation of Plans
 - 1.3.7 Institutional Issues
 - 1.3.8 Training

CHAPTER TWO: ENVIRONMENTAL PROFILE OF TANZANIA

- 2.1 Introduction
- 2.2 The Physical Environment
 - 2.2.1 Location and Administrative Framework
 - 2.2.2 Physiography
 - 2.2.3 Climate
 - 2.2.4 Soils
 - 2.2.5 Hydrology
- 2.3 The Socio-Economic Environment
 - 2.3.1 Population
 - 2.3.2 Economy
- 2.4 Land and Resource Use
 - 2.4.1 Crop Rotation
 - 2.4.2 Grazing and Livestock Keeping
 - 2.4.3 Wildlife
 - 2.4.4 Forests and Woodlands

- 2.4.5 Fishing and Water Resources
- 2.4.6 Minerals and Energy Resources
- 2.5 Land Tenure and Land Use Planning

CHAPTER THREE: HISTORICAL ACCOUNT OF RESOURCE ASSESSMENT AND LAND USE PLANNING IN TANZANIA, AND ENVIRONMENTAL IMPLICATIONS

- 3.1 Early Colonial Influences
- 3.2 The War Years and Large Schemes
- 3.3 Resource Surveys
- 3.4 Planning
 - 3.4.1 Planning Following Independence
 - 3.4.2 Village Planning
 - 3.4.3 Farm and Land Nationalisation
 - 3.4.4 Decentralisation and Rural Integrated Development Plans
 - 3.4.5 Training for Physical Planning
 - 3.4.6 Regional Physical Plans
 - 3.4.7 National Plans
 - 3.4.8 Participation
 - 3.4.9 Planning in the Wildlife Sector
 - 3.4.10 Planning in the Forestry Sector
 - 3.4.11 The Rufiji Basin Development Authority
 - 3.4.12 Sectoral Planning
 - 3.4.13 The National Land Use Planning Commission
- 3.5 Conservation Strategies
- 3.6 Conflicts in Planning in Tanzania
- 3.7 Availability of Land Resource Data, Type of Data and its Sources

CHAPTER FOUR: THE PLANNING PROCESS IN TANZANIA

- 4.1 Background
- 4.2 The Organizational Structure of Land Use Planning and
Decision-Making
 - 4.2.1 The Village Level
 - 4.2.2 The District Level
 - 4.2.3 The Regional Level
 - 4.2.4 The National Level
- 4.3 Some Constraints to Land Use Planning in Tanzania and their Implications
 - 4.3.1 Land Use Planning Guidelines
 - 4.3.2 Coordination
 - 4.3.3 Manpower
 - 4.3.4 Logistics
 - 4.3.5 Land Grabbing
 - 4.3.6 Lack of Implementation and Follow-up Mechanism

4.3.7 Land Tenure and Land Ownership

4.4 Implications of the Inadequacy of Formal Land Use Planning

BIBLIOGRAPHY

APPENDIX ONE: Profiles of Selected Survey and Planning Institutions

- Schedule of Interviews
- National Soil Service, Mlingano, Tanga
- National Land Use Planning Commission, Dar es Salaam
- Uyole Agricultural Centre, Mbeya
- Ardhi Institute, Dar es Salaam
- Planning Commission, Dar es Salaam
- Tanzania Forestry Research Institute, Morogoro
- Institute of Resource Assessment, Dar es Salaam
- Beekeeping Training Institute, Tabora
- Tabora Land Use Planning Project
- Institute of Rural Development Planning, Dodoma
- Ardhi Institute, Tabora

APPENDIX TWO: Case Studies of Selected Land Use Planning Projects

- Case Study 1: Kimani Village Land Use Plan, Mbeya
- Case Study 2: Kwemazandu Village Land Use Plan, Tanga
- Case Study 3: Tabora Land Use Planning Project, Tabora

FIGURES

- Figure 1: Map of Case Study Regions
- Figure 2: Tanzania: Map of Physical Features and Drainage
- Figure 3: Soil Map of Tanzania
- Figure 4: Map of Protected Areas in Tanzania
- Figure 5: Map of Major Vegetation Types
- Figure 6: Tanganyika Territory: Proposed Areas for Groundnuts Production Scheme
- Figure 7: Land Suitability, Present Land Use and Framework Plan for a Village in Tabora Region
- Figure 8: The Organizational Structure of Land Use Planning and Decision-Making in Tanzania
- Figure 9 : The Structure of the Planning Commission Secretariat
- Figure 10: Map of Hanang District Showing Major Land Use Features
- Figure 11: Kimani Village Land Use Plan
- Figure 12: Sungwizi Village: Existing Settlement
- Figure 13: Sungwizi Village: Proposed Settlement
- Figure 14: Tabora Region: Surveyed and Planned Villages

BOXES

Box 1:	The Tanganyika Groundnut Scheme
Box 2:	Examples of RIDEPs
Box 3:	Evolution of Practicable Procedures in Tabora Region
Box 4:	Systematic Aerial Reconnaissance Flights - An Example from Tabora
Box 5:	Legislation Controlling Land Use
Box 6:	An RRA of Dirma Village, Tanzania
Box 7:	Villages with Land Use Plans Prepared by District Planning Teams: Tanga & Tabora Regions
Box 8:	Organisations Concerned with Land Use Planning in Tanzania
Box 9:	The Case of the Barabaig
Box 10:	Land Allocation at Different Levels
Box 11:	Highlights on Undeveloped Land
Box 12:	Land Rights Abolished

TABLES

Table 1:	Status of Villages in Tanga Region
Table 2:	Manpower Position at the NLUPC, 1992
Table 3:	The Staffing Position in the Tabora Land Use Planning Project
Table 4:	Staffing Position of the Land Use Planning Unit of the Ministry of Agriculture in Some Regions
Table 5:	Budget of the Land Use Planning Unit of the Ministry of Agriculture, 1992/1993

CHAPTER ONE

EXECUTIVE SUMMARY

1.1 BACKGROUND TO THE STUDY

The baseline information on natural resources needed for effective development planning is conventionally provided by surveys. But, in many countries, large surveys have often been undertaken without establishing the users of the information, how it will be used and the institutional capacity to use it. Much unnecessary information gathered by costly surveys has been underutilised and effectively lost. Land use planning remains largely sectorised and unintegrated, is usually centralised and is mainly top-down. There remains little effective participation by beneficiaries in the process.

This report presents the results of preliminary research into these issues in Tanzania carried out by the Institute of Resource Assessment, University of Dar es Salaam, in collaboration with the International Institute for Environment and Development (IIED), London. It is a case study undertaken as part of a wider research project being coordinated by the Environmental Planning Group of IIED.

During Phase 1 of the project (1991-3), research has focussed on examining the resource assessment methods and land use planning procedures used both in the past and currently in developing countries, from national to village levels, and assessing the extent to which different methods have been pertinent and effective. The work is based on an international literature review and an analysis of the institutional practices of governments, agencies, and consultancy companies, etc., carried out by IIED; and on case studies of Sri Lanka and Tanzania undertaken primarily by locally-based collaborating teams.

The primary objective of this country case study has been to examine the status, procedures and shortfalls of the various aspects of land use planning in Tanzania, so that possible solutions might be found. In the course of the study, a bibliography has been prepared which covers documents concerned with land use planning, resource assessment methodologies and related issues in Tanzania, together with profiles of relevant survey and planning institutions.

1.2 THE SCOPE AND APPROACH OF THE STUDY

1.2.1 The Tasks

The study was undertaken by a team of four researchers from IRA, and one from IIED. There were four main tasks:

- i) To review land use planning procedures and resource assessment methodologies, past and present, in Tanzania.
- ii) To undertake detailed case studies of selected land use planning projects.

- iii) To prepare a bibliography of published and grey literature.
- iv) To prepare profiles of relevant survey and planning institutions.

1.2.2 The Case Study Regions

The study was conducted in three administrative regions of Tanzania: Tanga, Tabora and Mbeya (Fig. 1). These were selected principally because major integrated regional development plans had already been prepared in these regions (see Hofmeier 1975, for Tanga region; Mitchell 1984, for Tabora region; and Rumbelow-Pearse and Kamasho 1982, for Mbeya region). In addition, relevant survey and planning institutions are located in two of these regions. It was hoped that these factors would facilitate data collection.

1.2.3 Interviews

Key land use policy-makers and decision-makers were identified at national level, and in the three selected regions at regional, district and village levels. Interviews were conducted in order to acquire first-hand information about what kinds of policies and decisions are made, by whom, using what kind of information, and the place of natural resources information in the policy and decision-making process. The approach to interviews and document review followed a standard set of key questions and issues. These were developed to assist the conduct of the country case studies in a standardised manner and are contained in an internal project handbook (IIED 1991).

Visits were made to all relevant survey and planning institutions in the selected regions and in Dar es Salaam (see Appendix 1). Among those interviewed were the following:

Principal Secretaries, the Director of Survey and Mapping Division, Regional Lands Officers and Urban Development Planners, all from the Ministry of Lands, Housing and Urban Development (MLHUD),

Individual officers in the Planning Commission, the National Land Use Planning Commission, the Wildlife Division of the Ministry of Tourism, Natural Resources and Environment (MTNRE), and the Ministry of Agriculture, Livestock Development and Cooperatives (MALDC),

Regional Development Directors and Regional Planning Officers.

Questions were adjusted to suit the seniority or responsibility of each interviewee. In addition, several individuals from other regions who were considered by the team to have made an outstanding contribution to land use planning in their regions were also interviewed.

1.2.4 Documentation in Bibliography

The bibliography provided includes, *inter alia*, documents found in collections at the various institutions visited, in collections at the Institute of Resource Assessment and in the libraries at the University of Dar es Salaam and at Sokoine University of Agriculture, Morogoro.

Figure 1 Map of Tanzania showing Case Study Regions



Source: Atlas of Tanzania, Survey and Mapping Division, Dar es Salaam, 1976

1.3 CONCLUSIONS AND RECOMMENDATIONS

1.3.1 Coordination and guidelines

- ◆ It is clear from interviews conducted during the study that planners and decision-makers in Tanzania prefer to have clear lines of authority and responsibility. Instead, there are unclear and overlapping terms of reference, conflict, and duplication of effort between different organisations involved in land use planning in the country. The several institutions involved, both within and outside the formal government organisation (described in Chapter Four), appear generally unwilling to collaborate due to disagreements over control of funds.
- ◆ It is also evident that those involved in planning would prefer to follow clearly defined planning procedures; but none have been established that are either applicable generally or which are widely known in Tanzania. The majority of existing land use planning documents, including those planning guidelines which have been prepared, can be found only on shelves in the offices of a few individuals. They are not readily available, and particularly not to users such as planners, policy- and decision-makers (See Chapter Four and Appendix 2).

***Recommendation:** There is an urgent need to prepare comprehensive land use planning guidelines for Tanzania and to make these widely available at all levels, but especially in the Regions and Districts.*

- ◆ The foregoing problems have contributed significantly to land use planning continuing to be undertaken on a sectoral basis (e.g. forestry, wildlife, livestock). In general, it has been discrete in nature and, in most cases, has been crisis-oriented. As a result, most land use plans have been short term, often not effectively implemented and always lacking a follow-up mechanism. This situation has resulted in direct conflict and is one reason for duplication of efforts.
- ◆ The need for coordination is recognised and the National Land Use Planning Commission has a legal mandate to provide it, but it lacks both skilled staff and the necessary financial resources. Most of the present staff are seconded from other ministries/ departments (the weaknesses of NLUPC are described in Chapter Four).

***Recommendation:** The role of NLUPC needs clarification, and capabilities to be strengthened and supported to enable it to discharge its coordinating role. Mechanisms are required to enable NLUPC to follow-up and monitor planning exercises.*

1.3.2 Data availability

- ◆ Land use planning is constrained by inadequate data. Natural resources data are scattered and no records of holdings are available.

***Recommendation:** An easily accessible documentation centre (e.g. Dar es Salaam, Arusha, Dodoma) for land use plans and natural resources information is recommended - this is an obvious task for the National Land Use Planning Commission.*

1.3.3 Land tenure and land ownership

- ◆ Land tenure and land ownership in respect of village land is not clear (see Chapter Four).

Recommendation: A national land use policy is urgently needed to clarify the current ambiguities concerning systems of land tenure and land ownership.

- ◆ From time to time, it has been observed that large parcels of land are allocated to individuals and firms outside the normal established procedures (see discussion on 'land grabbing' in Chapter Four).

Recommendation: The established land allocation procedures should be strictly adhered to and enforced at all levels. This might be achieved through legal instruments and by raising awareness of procedures amongst the population.

- ◆ Investment, planning and development are hampered by conflict between customary forms of land tenure and rights to use natural resources and those imposed by government through legal statutes - which themselves have changed continually.

1.3.4 Central planning, urban planning, 'top-down' approaches and participation

- ◆ No examples were found of central planning being of benefit to production, living standards or the sustainable use of natural resources. However, the centrally administered sectoral programs of catchment forestry (four regions - Arusha, Kilimanjaro, Morogoro and Tanga) do have positive benefits for resource conservation. Their practical management at local level does need local level planning initiatives. Sometimes, narrow goals such as increased wheat production in Hanang District have been achieved, though with uncosted losses of traditional use and production. Usually, even the narrow immediate goal has not been achieved.

- ◆ Concepts of urban planning are often applied in rural areas, particularly for village planning, where they do not make sense and are difficult to implement. There are no accepted guidelines for rural planning.

Recommendation: Guidelines for land use planning are needed which clearly indicate those concepts and practices which are common to both urban and rural areas, and those which need to be applied separately.

- ◆ Plans have been created by planners and pushed through in haste (usually in response to crisis situations) without the participation of local people. Their principles are those of town planning, not natural resources or production economics, and they are (without exception) 'top down' in nature.

- ◆ A few planners appear to accept, at least theoretically, that a 'bottom-up' approach should be practised. In reality, it rarely has been the case. Planners in Tanzania continue to hanker after the tried and tested and failed procedures of centralised, physical planning. Hoben *et.al.* (1992) note that government elites have a deeply ingrained faith in land use planning in which experts prepare maps indicating in considerable detail how land should be used. They do not recognise a role for indigenous knowledge and the ability of land users to use land shrewdly in their own interests. The concept of local participation in planning is just not understood. As a result, most plans do not receive the approval of the people and implementation is extremely difficult (see Chapter Four and Appendix 2).

There is little evidence of socio-economic information being taken into account in the preparation of land use plans - but without participation, meaningful socio-economic information cannot be secured.

This situation prevails ten years after the statement in the Agriculture Policy (Ministry of Agriculture 1983) that "because the planning work was often done without active village involvement, or without training in the maintenance and use of records, the Plans have usually remained pieces of paper which do not affect the real activity of the village".

Thus, nothing has changed! Land use continues to be dominated by traditional practices arising from cultural norms, customary beliefs, and local knowledge and experience. Traditional resource management at farm level is in direct, though usually silent, conflict with the 'top down' plans made by government officials. Usually, traditional land use continues without open rejection or opposition to plans unless the government actively imposes them. Increased 'land grabbing' and use of land resources outside normal traditional areas is creating greater levels of competition over resource use and antagonism.

It is notable that the guidelines for the development of a new Agricultural Policy (Govt. of Tanzania/World Bank 1992) state that "there was also consensus on the need to update and formalise the new Agriculture Development Policy of the Government. The policies set forth in 1993 have served their purpose and have been superceded by a series of new approaches."

The sectoral review goes on to that "land tenure and land use systems are implemented at the local level, therefore it is the village authorities that should be responsible for thier control."

The review goes on to state that "although it is at the village level that the use and management of common resources should be implemented, it is also necessary for the national government to design land use policy which: (1) facilitates land use by incentives, (2) acknowledges resource use and rights by incentives/groups, and (3) involves local communities/groups in the management of those resources."

Recommendations:

Government officials need to spend more time in the rural areas, consulting with and discussing issues with village and pastoral communities - in order to increase their understanding of problems and priorities in a process of mutual learning.

For villagers to participate effectively in the planning process, attempts will need to be made to raise their level of awareness, particularly of approaches to problem identification, project formulation, planning the use and (especially) management of their own resources, and the implementation and monitoring of their own projects.

1.3.5 Staff and equipment

- ◆ Survey and planning institutions suffer from an acute lack of trained staff at all levels, and totally inadequate equipment and finance - even for spare parts and fuel. Posts within land use planning are filled mostly by people on secondment from other departments and their interests, loyalty and future prospects are in their own departments. The high rate of staff turnover contributes to poor institutional memory.

Recommendations:

A career structure in land use planning is essential to attract and keep good staff.

Research on identifying, designing and using lower-cost methods of resource survey and land use survey is required.

1.3.6 Monitoring and evaluation of plans

- ◆ There is no mechanism in Tanzania for implementing, monitoring and evaluating plans as recommended in the FAO guidelines for land use planning (FAO 1993). This is the case even where planning has been initiated under external funding (as in the case of the Tanga Rural Integrated Development Programme, funded by GTZ, beginning in 1975; or the ODA/LRDC supported Tabora Development Project begun in 1976). Most village plans remain paper plans in project offices. Regional (zonal) physical plans (eg, those prepared with financial support from FINNIDA) have never been used in guiding the location of investment (Lerise 1993b).

Recommendation: *Any monitoring and evaluation system must be low-cost and practicable.*

1.3.7 Institutional issues

- ◆ Land use planning in Tanzania is institutionally weak. Effective planning continues to be dominated by established sectoral interests, which conflict.

Recommendation: *Planning for sustainable development requires an inter-disciplinary approach and inter-sectoral collaboration.*

- ◆ The case studies demonstrate (again) that where external finance and expertise is provided, a job gets done and to a adequate pre-determined technical standard. Once the external resources are withdrawn, everything soon grinds to a halt, not least transport. Resource survey and planning work by expatriate professionals tends to use state-of-the-art methods and technology that cannot conceivably be maintained once the external funds cease (e.g. the use of SPOT imagery for village planning in the last stage of the ODA-funded Tabora land use project).

Recommendation: *Externally-funded projects should promote the use of locally-appropriate and sustainable methodologies and institutional linkages, with increased concentration on training (see below) rather than providing a large number of external inputs.*

1.3.8 Training

- ◆ While externally-funded survey and planning projects now routinely provide training for counterpart staff (and this is often very good training), they do not provide training to policy-makers and managers in the use of the information, nor invest in the promotion of the information that they are producing, or in communication skills in general.
- ◆ There is a serious shortage of manpower trained in land use planning at all levels (i.e. certificate, diploma, and degree) This is due partly to the insufficiency of training institutions in Tanzania, and partly to inadequate facilities facilities and finances for training at existing institutions. Plans to reduce government manpower by up to 30% in the coming two years mean

that government agencies with responsibilities in sectors concerned with land use must state their cases for increased inputs in the strongest possible terms

Recommendations:

There is a need to increase the output of trained land use planners from existing training institutions. There is also a need to increase the number of training courses, particularly at diploma and certificate levels. Initial short courses could be introduced to ameliorate the shortage of manpower. The initial training could be followed by longer and more intensive land use training courses.

More training in the use and application of techniques of participatory inquiry are recommended - these stress the value of indigenous natural resource knowledge.

- ◆ There is inadequate coordination and harmonization of training courses offered by the various land use planning training institutions. This leads to differences in career development opportunities in land use planning (see Chapter Four).

Recommendation: *Unified training programmes and schemes of service for all land use planners from different institutions need to be established.*

CHAPTER TWO

ENVIRONMENTAL PROFILE OF TANZANIA

2.1 INTRODUCTION

This chapter describes features of the physical and socio-economic environment of Tanzania, providing a frame of reference for a discussion of the relevance of planning procedures in relation to the availability and use of natural resources as well as environmental problems in Tanzania. It describes selected aspects with a bearing on resource and land use planning.

The profile draws on recent government strategy documents, environmental statements and statistics, and/or documents prepared by donor agencies and other institutions. These are referenced in the text.

2.2 THE PHYSICAL ENVIRONMENT

2.2.1 Location and Administrative Framework

The United Republic of Tanzania is located between 1⁰ 00' S and 12⁰ 00' S and between 30⁰ 00' E and 41 00' E. It was formed by the union of the former Tanganyika and the islands of Pemba and Zanzibar in 1964. This report deals only with mainland Tanzania.

Tanzania has a total land area of 883,749 km², of which the mainland constitutes 881,289 km² (99.72%), while the islands account for the rest (2,460 km², 0.28%) (Bureau of Statistics, 1992). The country is endowed with a wide range of resources offering considerable social and economic potential, including extensive areas of arable land, a coastal and marine zone, wildlife reserves and parks, forests, rivers, and lakes (TFAP, 1989).

Administratively, the mainland is divided into 20 regions (Figure 1), each of which has a high degree of autonomy in the administration of its development programmes. Each region is divided into districts, and these are subdivided into divisions, wards and villages. At present, there are 88 districts and over 8,000 villages (Bureau of Statistics, 1988).

Generally, the road and railway network in Tanzania is poor, and most areas are poorly accessible.

2.2.2 Physiography

Tanzania includes both the highest and lowest places in Africa - the summit of Mt. Kilimanjaro (5950m a.s.l.) and the floor of Lake Tanganyika (358m b.s.l.). Except for the coastal belt, most of the country is part of the Central African plateau, 1000 - 1500 m a.s.l., characterised by gently sloping plains and plateaux broken by scattered hills and low-lying wetlands (Morgan 1969; Berry & Berry 1971; Atlas of Tanzania 1976) (Figure 2).

2.2.3 Climate

The country has a great diversity of climatic conditions, with mean annual temperatures ranging from 24⁰-34⁰C, while mean annual rainfall varies from below 500 mm to over 2500 mm p.a., depending on altitude and latitude (Morgan, 1969). The rain falls mainly during December-May, although a bi-modal pattern is found in the north. Rainfall is erratic, only 21% of the country can expect, with 90% probability, annual rainfall of more than 750 mm (Atlas of Tanzania 1976); and the central third of the country can expect less than 500 mm, with evapo-transpiration rates exceeding precipitation for most of the year.

2.2.4 Soils

The coastal zone is mainly covered with deep, sandy to heavy textured soils with moderate to high available water content. Most of the central and western plateau areas are mantled by sandy loams of low nutrient content and low water holding capacity. Drought-prone soils cover a great part of the northern portion of the country, including the Masai steppe and the south eastern plateau. Eroded land and deeply weathered soils, susceptible to erosion, occur on hill or mountain slopes and in the central highlands.

Well drained, volcanic soils of high ash content are found in the northern rift zone and the volcanic areas in the northern and southern highlands. Generally, these are heavy textured, moderate to well drained, with moderate to high moisture storing properties. The soils of the western highlands are developed on basaltic or argillaceous rocks, and are well drained with good moisture holding properties. Those soils developed over sandstone are sandy to loamy and have low fertility (de Pauw, 1984).

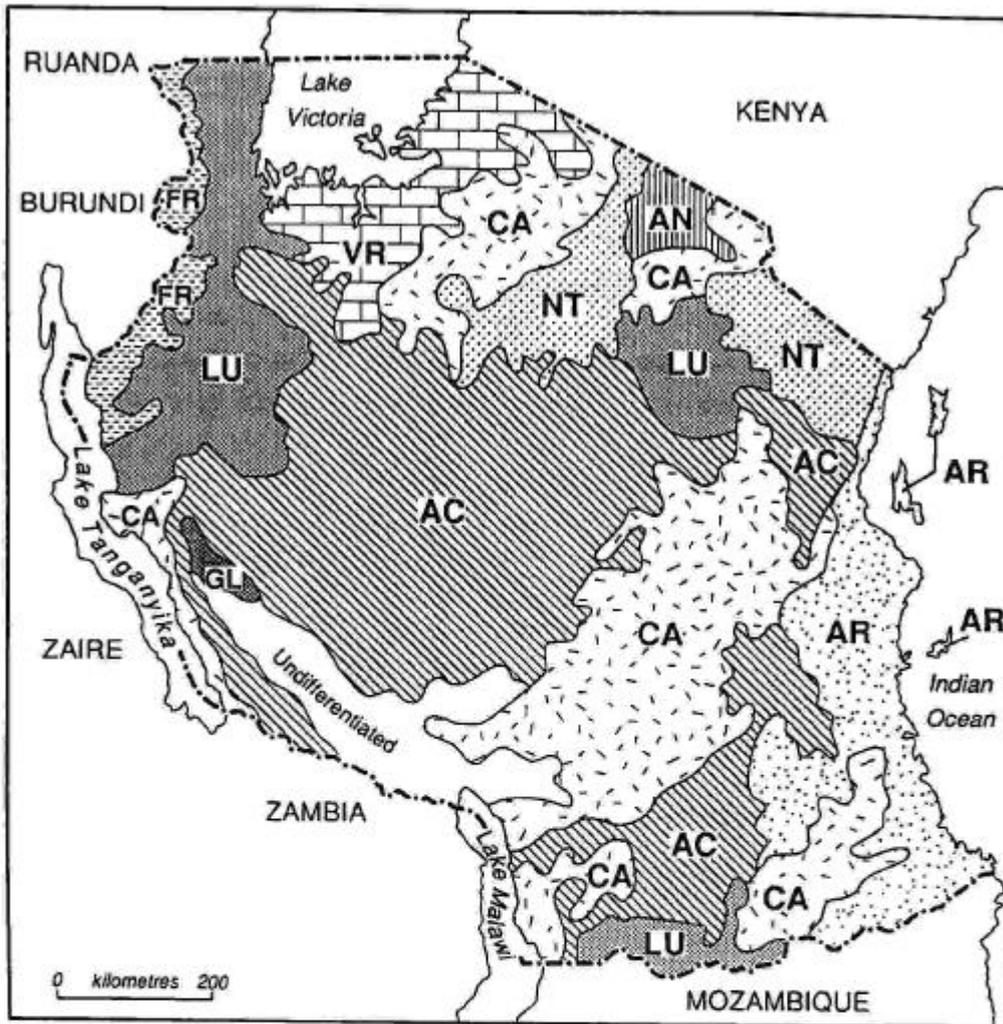
Figure 3 shows the distribution of the major soil types of Tanzania, based on the Soil Map of the World (FAO-Unesco, 1977). A number of soil maps of Tanzania have been prepared since independence and are discussed in Chapter Three.

2.2.5 Hydrology

Tanzania can be divided into five hydrological basins (Figure 2):

- ◆ areas draining into the Indian Ocean - mainly the Rufiji river and its tributaries (draining one fifth of the land of the country), the Pangani and Ruvu Rivers;
- ◆ The Malagarasi basin draining into Lake Tanganyika, with a supply of water during about 2-3 months of the year;
- ◆ the Lake Victoria basin draining via the Nile into the Mediterranean Sea; and
- ◆ two inland drainage systems - one draining into Lakes Eyasi, Manyara and Natron in the North, and the other into Lake Rukwa in the South-West.

Figure 3: Soil Map of Tanzania



Legend

- AC** Acrisols: Soils with an argillic B horizon (containing illuvial clay and clay skins) with base saturation < 50%
- AN** Andosols: Soils developed from recent volcanic materials
- AR** Arenosols: Very sandy soils which have an identifiable B horizon; clay < 15%
- CA** Cambisols: Soils with a 'structural B horizon' but no argillic horizon
- FR** Ferrasols: Soils with an oxic horizon with a CEC < 16 m.e./100 g clay
- GL** Gleysols: Gleyed soils with hydromorphic properties dominating
- LU** Luvisols: Soils with an argillic B horizon with base saturation > 50%
- NT** Nitosols: Soils with a deep argillic B horizon and merging horizon boundaries, strongly structured with shiny ped faces
- VR** Vertisols: Dark cracking clay

Source: Adapted from FAO-Unesco Soil Map of the World, 1977

2.3 THE SOCIO-ECONOMIC ENVIRONMENT

2.3.1 Population

Recent population estimates put the population at about 26 million people (Bureau of Statistics, 1992), with a population growth rate of 2.8%.

Tanzania has a low overall population density, averaging about 19 persons per km². However, some areas are more densely populated with over 200 persons per km², e.g. Ukerewe Island, Kilimanjaro, Mwanza and Dar es Salaam (Bureau of Statistics 1988). Other areas are more sparsely populated (e.g. Lindi, Rukwa, Ruvuma and Tabora regions). Some of these regions are areas with low and unreliable rainfall and, mainly, infertile soils.

However, some sparsely populated areas, such as the Kilombero valley in Morogoro region and the Usangu plains in Mbeya district, have fertile soils and reliable rainfall. Pastoralists and agriculturalists from various parts of the country have been attracted increasingly to these areas, and this trend is resulting in land use and land ownership conflicts between the newcomers and the indigenous people (IIED/IRA 1992; WWF 1992).

Urbanisation has been increasing steadily. About 20% of the country's total population lived in the urban areas in 1988 compared to 13.8% in 1978 and 5.7% in 1967 (Bureau of Statistics 1988). It is estimated that, by the year 2000, about 33% of the country's projected population of about 35 million will live in urban areas (Bureau of Statistics 1992).

2.3.2 Economy

The Tanzanian economy is dependent mainly on agriculture, most of which is at subsistence level (Ellis 1982). Approximately 90% of the population is engaged, directly or indirectly, in agricultural activities which provide about 50% of GDP and more than 75% of foreign exchange earnings (Ministry of Agriculture 1983). Recent increases in mineral exports (including gold) have reduced these percentages somewhat. Since the mid 1970s, the economy has declined for many reasons, including the sharp rise in oil prices, low export commodity prices and the break-up of East African Community (Boessen, et al. 1986). Performance over the last three years has been encouraging, following measures taken under the government's Economic Recovery Programme (1986/87-1988/89) and following successive years of favourable weather (FAO 1990).

Tanzania has been characterised by political stability and possesses abundant natural resources capable of supporting a buoyant economy: extensive fertile agricultural land and pasture land supporting livestock production, world-renowned wildlife reserves, vast woodlands and unique forest ecosystems.

2.4 LAND AND RESOURCE USE

2.4.1 Crop Cultivation

Tanzania is a country of varying agricultural potential, ranging from semi-desert to fertile and highly productive land under rain-fed agriculture. There is potential to grow a range of temperate and tropical crops. The main crops cultivated include coffee, cotton, tea, sisal, wheat, maize, rice, beans, and cashew. But there are growing conflicts between agriculture and other land uses. Much of the

productive land is already densely settled and, as population pressure continues to rise, more and more people are settling and cultivating in the marginal areas and encroaching into forest reserves and/or wildlife and livestock grazing areas.

Only 10-20% of the land area in the country is currently under cultivation. About 80% is not well suited to agriculture because of unreliable rainfall, infertile soils and pest problems. However, these data are subject to debate. The National Conservation Strategy for Sustainable Development states that 6% is cultivated and that 55% is potential agricultural land

2.4.2 Grazing and Livestock Keeping

According to the Livestock Policy (Ministry of Livestock Development 1983), the livestock population is just over 12 million livestock units (cattle, sheep, and goats expressed as equivalent numbers of cattle of specified weight). 60 million ha of mainland Tanzania is available for grazing and the Policy estimates, conservatively, that the carrying capacity of this area is about 20 million stock units.

A number of factors limit the distribution of livestock: diseases, disparities in the distribution of infrastructure, failure in destocking policies, and the nomadic behaviour of pastoralists. Over-stocking in some areas has resulted in severe land degradation. The pursuance of uncoordinated and conflicting objectives on the use of land also limit the more even distribution of livestock, e.g. the establishment of forest reserves has resulted in a loss of dry season grazing.

2.4.3 Wildlife

Tanzania is one of the world's great wildlife strongholds (Erbetta 1982). At present, there are 12 national parks and 18 game reserves, all uninhabited, which constitute 12% of Tanzania's land area, and 49 inhabited game controlled areas which cover 13% of the land (Figure 4) (Yeager & Miller 1986; TFAP 1989). In Arusha Region, wildlife conservation takes about 48% of all land. Wildlife conservation laws and rules are very strict in National Parks and Game Reserves, but are less strict in Game Controlled Areas.

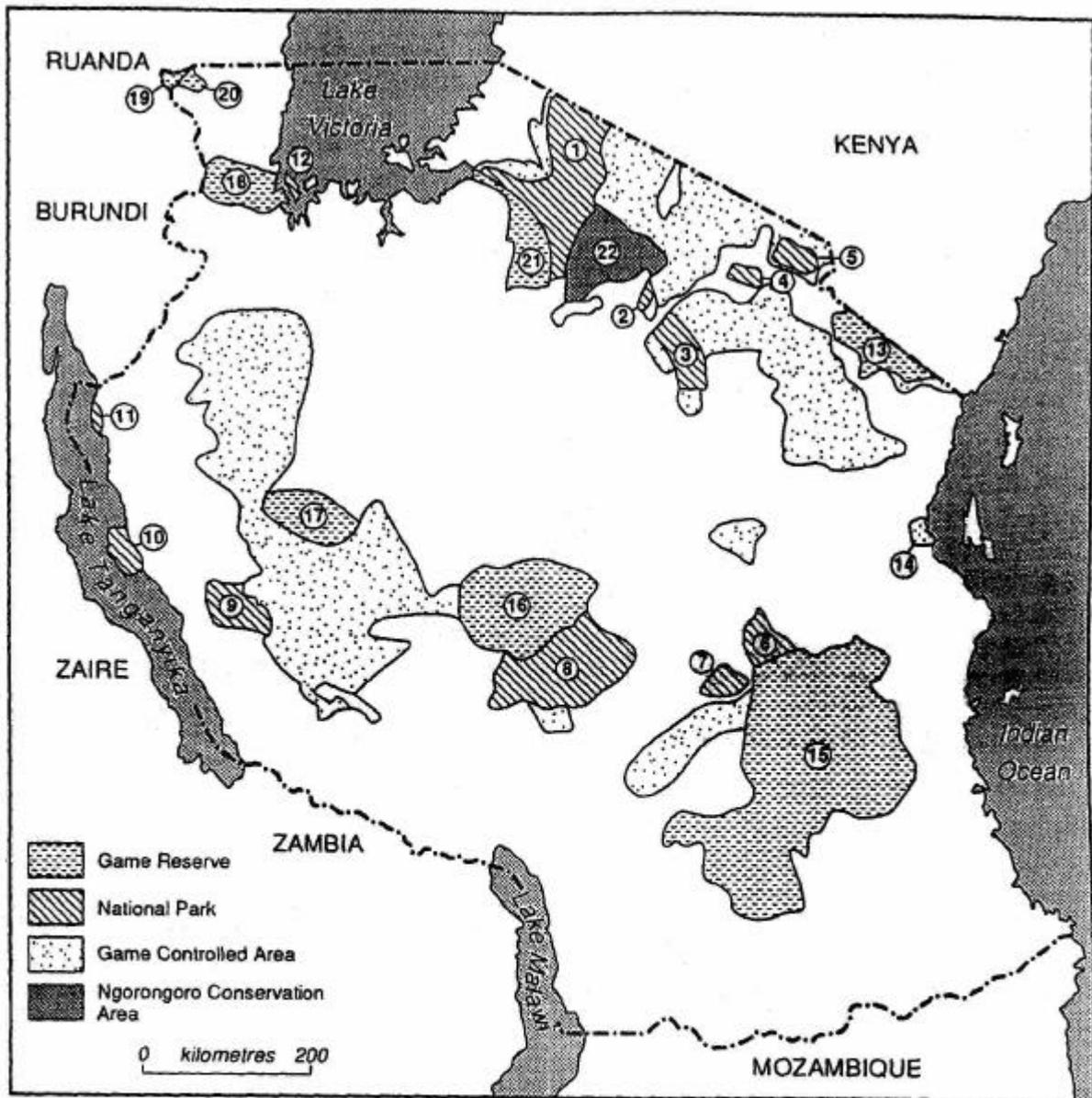
2.4.4 Forests and Woodlands

There have been a number of reviews of the the extent of Tanzania's forests (e.g. Lundgren 1975; FAO 1981; Maagi et.al. 1979), but they have tended to rely on old data and are unreliable. The latest study, based on satellite imagery, estimates natural forest cover (defined as all vegetation types with a closed canopy of woody plants exceeding 8m height) as 16,185 km² (1.85%) (Rodgers et.al. 1985). A recent environmental study of Tanzania estimates that forests and woodlands, including those within other land use types such as game conservation areas and national parks, extend over 45% of the country (DANIDA, 1989). The distribution of the major vegetation types is shown in Figure 5.

Upland evergreen forests occur in the highlands of Kilimanjaro, Meru, Ngorongoro, the Pare, Usambara and Uluguru mountains and the Southern Highlands. Lowland evergreen forests occur in isolated patches on the coastal plain. These areas all receive over 1000mm rainfall annually.

Figure 4: Map of Protected Areas of Tanzania

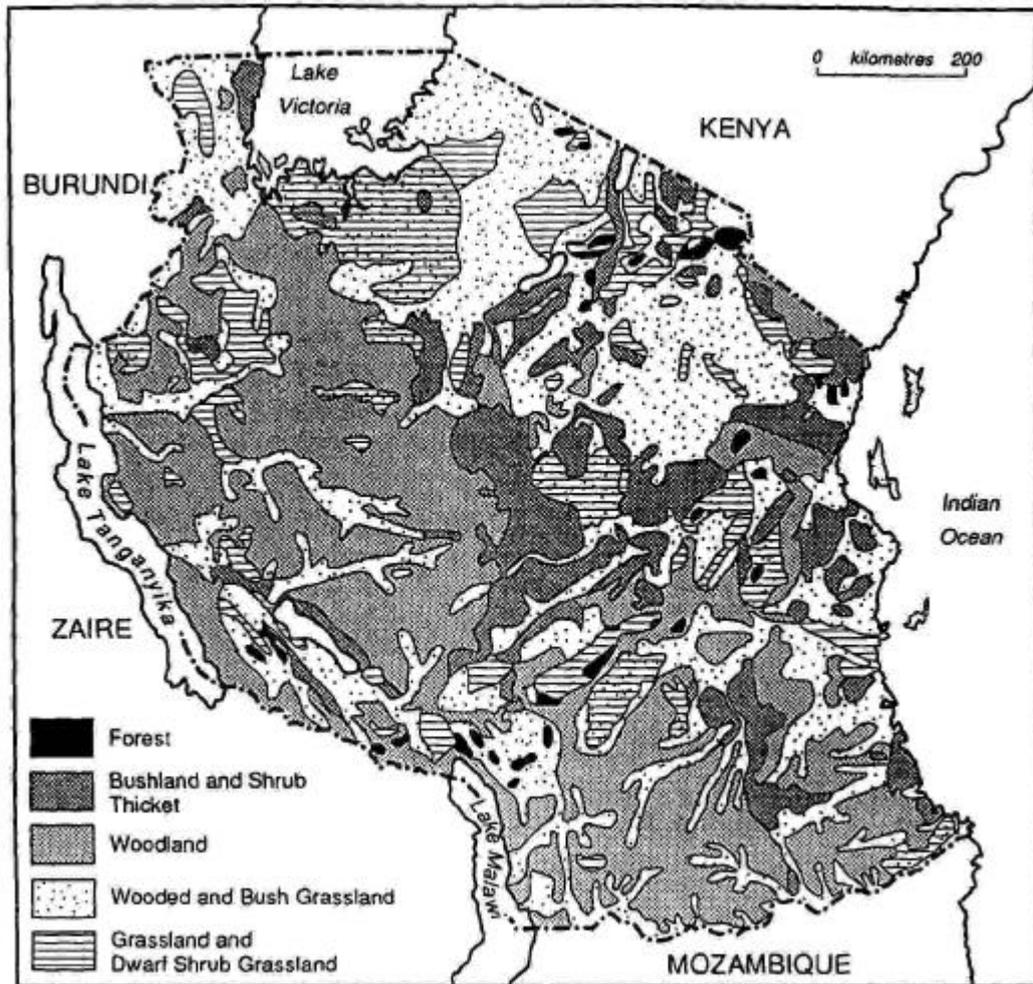
(Source: Mwalyosi 1993)



Conservation Areas

- | | |
|------------------------------|---|
| 1. Serengeti National Park | 13. Mkomazi Game Reserve |
| 2. Manyara National Park | 14. Sadani Game Reserve |
| 3. Tarangire National Park | 15. Selous Game Reserve |
| 4. Arusha National Park | 16. Rungwa/Kizigo Game Reserve |
| 5. Kilimanjaro National Park | 17. Ugala River Game Reserve |
| 6. Mikumi National Park | 18. Biharamulo and Burigi Game Reserves |
| 7. Udzungwa National Park | 19. Ibanda Game Reserve |
| 8. Ruaha National Park | 20. Rumanyika Game Reserve |
| 9. Katavi National Park | 21. Maswa Game Reserve |
| 10. Mahale National Park | 22. Ngorongoro Conservation Area |
| 11. Gombe National Park | |
| 12. Rubondo National Park | |

Figure 5: Map of Major Vegetation Types



Source: Adapted from Handbook of Natural Resources of East Africa, 1/4.0 million map of E. Africa, E. African Literature Bureau, Nairobi, 1976

There are various types of open deciduous woodland, categorised according to the dominant genera which include *Brachystegia*, *Julbernardia*, *Acacia*, *Combretum* and *Terminalia*. The most common woodland type are the *miombo* woodlands, characterised by species of *Brachystegia* and *Julbernardia*. They cover nearly half of the country (400,000 km²), particularly in the western, central, and south-eastern parts of the plateau (TFAP 1989), and are associated with annual rainfall of 800-1200 mm. *Acacia* woodland is sometimes associated with drier areas.

Mangrove forests occur along the estuaries of Rufiji, Wami and Ruvuma Rivers and in creeks along the mainland coastline.

About 135,000 km² are designated as forest reserves and include 840 km² of plantations and demonstration woodlots. These areas are the responsibility of the Forest Division of the Ministry of Tourism, Natural Resources and Environment (MTNRE). Within the forest reserve estate, there are 16,000 km² of land specially gazetted as catchment reserves for watershed protection. Neighbouring communities are prohibited from using forest products from the reserves, eg, timber, wood for building construction and firewood. Most of the forest reserves are little managed: management plans are only available for areas supported by certain donor-funded projects (e.g. the HADO Project, Dodoma; the HASHI Project, Shinyanga).

The major causes of forest depletion include large scale farming, especially in Arusha, Kiteto, Tanga and Morogoro districts. Substantial pressure on forests also results from small-scale farmers expanding their cropland, and cutting trees for fuelwood, charcoal production for urban users, and from increasing numbers of livestock and wildlife on limited pasture land and woodland. The clear felling of woodland and 'bush' to control or reduce tsetse flies has also resulted in serious environmental hazards through increased run-off and soil erosion.

2.4.5 Fishing and Water Resources

Tanzania has about 53,000 km² of inland water and about 19,000 km² of coastal shelf (Planning Commission 1991), and a 200 nautical mile exclusive economic zone offshore. However, fish catches are small compared to the potential. In 1989, the total freshwater catch was 337,000 tonnes in freshwater whilst the marine catch was almost 50,000 tonnes (Planning Commission 1991). The number of people who depend on the fishing industry is also small. Fishing is a part-time individual venture using outdated or simple equipment (Mohamed and Mwalyosi 1991).

2.4.6 Minerals and Energy Resources

There are abundant mineral resources in Tanzania, but only a few are being exploited. The main minerals which have been explored are iron ore (reserves estimated at 85 million tons), coal (324 m.t.), gypsum (2.6 m.t.), kaolin (50 m.t.), lime and limestone (vast reserves), magnetite (4.5 m.t.), meerschaum (28,000 t), phosphate (2.5 m.t.), salt (vast reserves), plus substantial amounts of diamonds and gold reef (COSTECH 1991). Commercial nickel mining is being planned in western Tanzania.

Hydropower potential is about 4,500 MW of which 327 MW have been developed (Mwandosya 1990). Coal, although abundant in the country, plays a minor role as a source of energy due to its poor quality, undeveloped market, peripheral location and poor transport facilities. Proven offshore natural gas reserves at Songosongo are estimated at 0.72 trillion cubic feet. There has been petroleum exploration along the east coast during the past few years, but it has not yet provided firm information about the reserves - if any.

2.5 LAND TENURE AND LAND USE PLANNING

Prior to the colonial period, indigenous land tenure arrangements varied greatly amongst cultural groups, ranging from open access common lands to landless people ruled by overlords (James 1971). In general, claims and rights to land were asserted according to internal arrangements accepted by those concerned and administered by traditional institutions. In addition to this accepted customary practice, land was seized by more aggressive groups using military force and weaker groups were subjugated or had to withdraw into uncontested areas. This dynamic caused extensive migrations throughout the region (Lane 1991). The main forms of land tenure in Tanzania today are:-

a) *Right of Occupancy*. This is defined as a title to the use and occupation of land and includes the title of a native community lawfully using or occupying land in accordance with native law and custom (Tenga 1992). The Right of Occupancy is, therefore, divided into two forms of land tenure: the Granted Right of Occupancy, issued by the President, under which land is held for up to 99 years; and the Deemed Right of Occupancy where the law deems customary landholders as lawful occupiers.

b) *Customary or Traditional Land Tenure*. There are customs or by-laws which reflect a community consensus about what can and cannot be done with land and other related resources (World Bank 1992). The notion of individual and family or private property rights over at least some kinds of land is well developed. These rights may change according to circumstances, but they are generally well understood and complied with. The land under this system of tenure is held in perpetuity.

c) *Communal Land Tenure*. This tenure system has been defined as land which is held under the control of the corporate unit (e.g. a village) and has not been allocated for use to any community other than itself (James & Fimbo 1973). Such lands include forest lands, grazing lands, hunting lands, and unallocated arable lands abandoned within the control of a land allocating authority.

In practice, most agricultural land is held under either customary or communal systems and most agricultural land is not surveyed. Few users have any documents showing their legal rights and duties or even boundaries. Indeed, few villages have been internally surveyed since villagisation took place in the early 1970s - an exercise which greatly disturbed traditional land holdings and arrangements.

According to the Land Ordinance Act, Cap 113, of 1923, which is still in force, all land, whether occupied or unoccupied, belongs to the Republic of Tanzania and is Public Land. This means that land is under the control of the President and is held and administered "for the use and for the common benefit, direct or indirect, of the natives of Tanzania". The maintenance and improvement of the quality of the land, however, depends crucially upon the land user, and often demands considerable investment of labour and resources, eg, ridging or terracing, or investments of manure, compost, or chemical fertilizers. It is, therefore, essential that all users feel confident that their efforts and investments will benefit them and their families. This principle applies equally to the peasant farmer, the village community, and the private or commercial farmer.

The cardinal principle of the 1923 Land Ordinance Act has not been changed by subsequent land legislation such as the Land Regulations 1948; the Land Law of Property and Conveyancing Ordinance, Cap 114; and the Government Leaseholds Conversion of Right of Occupancy Act 1969.

In contrast to the Land Ordinance Act of 1923, the Limitation Act of 1971 prescribes that only land which is not owned or alienated is Public land. What constitutes such land is, however, ambiguous, as village lands usually overlap. Even land which appears to be uninhibited may be under the jurisdiction of a particular village. The Government is currently urging village boundary demarcation to avoid such ambiguities. But when, and if, village demarcation is carried out and village titles obtained, all land will come under the jurisdiction of villages and there will be no unalienated land.

The Villages and Ujamaa Village (Villagization) Act of 1975 established the Ujamaa villages and gave corporate personality to the Village Councils to handle all legal land issues in the villages. Under this Act, the state allocated land to registered villages. The village government (Village Councils) in turn allocated land to households. Ideally, every household was allowed a homestead plot of about 0.5 ha. Within their own jurisdiction, village governments also hold communal agricultural land, grazing areas, forest and, sometimes, unutilized reserved lands for future allocation. Though the Villagization Act of 1975 was expected to override the Customary Law, there was no existing machinery to deal with such difficult land related issues. As a consequence, people continued to abide by Customary Law and Rights.

Though the legal principles in the 1975 Villagization Act were clear, in practice they raise several problems and there have been disputes over land ownership between villages and between households. The 1975 Villagization Act was repealed in 1982 and replaced by a Local Government Act which empowered District Councils to make decisions on land allocation to the villages and on land-related issues (Semboja and Therkildsen 1991). But the District Councils were not competent to deal with legal land issues. As a result, a situation of insecurity over tenure amongst villagers continued to prevail while the traditional tenurial provisions and practices were no longer legal. In the absence of security for long-term ownership, farmers have little incentive to improve the land using labour and investments.

Surveying, village boundary demarcation and the allocation of land titles are now being pursued by the Ministry of Lands, Housing and Urban Development in collaboration with the local governments. This will result in the gradual replacement of the traditional system by the leasehold system.

The first draft of a report by a Presidential Commission on land issues was submitted in January 1991. It was hoped it would clarify the uncertainties that exist over land tenure. But just before its submission, new legislation was formulated - The Regulation of Land Tenure (Established Villages) Act No.22 of 1992. This sets out to extinguish customary rights to land for certain villages. As a result, great confusion remains concerning land tenure. This issue is discussed in detail in Chapter Four (section 4.3.7).

CHAPTER THREE

HISTORICAL ACCOUNT OF RESOURCE ASSESSMENT AND LAND USE PLANNING IN TANZANIA, AND ENVIRONMENTAL IMPLICATIONS

3.1 EARLY COLONIAL INFLUENCES

Under the traditional land use planning and management system which existed before the colonial period, farmers and villagers used their local knowledge and experience to identify and earmark land for different uses. The categories included: grazing lands - mostly in areas which were not suitable for agriculture (eg, in Tabora regions, villagers used the "*ngitiri*" system to earmark areas for grazing by particular groups of livestock owners); land to provide fuel and wood for other uses; and land for farming and residential purposes. Different types of soil were distinguished by local names. For example, in Tabora region, farmers used "*Kikungu*" for red soils, "*Ipwisi*" for pale brown light soils, and "*Ibushi*" for dark brown soils (Acres 1983), and their suitability for crops was identified. Complicated irrigation and soil conservation were constructed:

"The complex irrigation systems at Engaruka near Arusha (begun at least 250 years ago and covering 2000 ha), and on Mount Kilimanjaro and in the Usambara and other mountain areas were probably built by communal labour organised by the chiefs; and so were the soil conservation works, which involved the construction of stone walls and terraces in the Usambaras" (Coulson 1982).

The colonial period saw two administrations in the country: the Germans between 1891 and 1917, and the British from 1920 to 1961 when the country became independent. In the last ten years of German rule, there was considerable investment. Maps were drawn for military and tax-collecting purposes, and to assist in the construction of roads and railways, and thorough mineral exploration was undertaken. Some of the German maps were still in use in the 1950s (Coulson 1982). During the German period, cotton, sisal (on the plains), coffee (in the mountains) and other crops were produced by plantation companies, white settlers and by small-scale African farmers. These three means of production continued in Tanganyika under British rule. By 1910, there were 54 sisal plantations (Hitchcock 1959). The construction of the Tanga-Moshi railway enabled the occupation of land in the East Usambaras by settlers growing coffee and subsequently on the slopes of Mount Kilimanjaro. Areas not given to settlers in the mountain areas were declared forest reserves. German agricultural research was based at Amani in the East Usambaras.

Migrant African labourers worked on the settler farms and plantations, but their absence from their own farms had particularly adverse environmental affects. Dry season tasks such as soil conservation and the maintenance of irrigation systems were neglected. According to Kjekshus (1977), this accounts for the backwardness, even today, of areas such as Kigoma or Songea.

The introduction of rinderpest in 1887 and fighting in the First World War, led to the loss of many cattle, and large areas were depopulated, leading to an increase in game populations and the rapid spread of Tsetse fly to areas where cattle had previously grazed. Today, some of these areas are tsetse-infested game parks; a few of which supported large and relatively prosperous human and cattle populations before 1900.

When the British arrived in Tanganyika after the First World War, they built on and formalised the foundations of land policy established by the Germans which had included, *inter alia*, land allocation to expatriates and enforced regulations for soil conservation, stocking levels, pest control, etc. Between 1923 and 1961, over three million acres of land were allocated to expatriate farmers (Hoben, et.al. 1992).

To facilitate land alienation, the British authorities introduced legislation which withdrew rights and duties of indigenous communities over their land. Under the Land Ordinance 1923, all land (both occupied and unoccupied) was declared Crown Land. One of the stated intentions of the Ordinance was to "assure, protect, and preserve customary (indigenous) rights on land"; but Fimbo (1988) argues that it failed to provide such protection since, in most cases, indigenous land rights were subordinate to rights held under leasehold. The Ordinance resulted in two land tenure systems (leasehold and customary) which remain in place today, despite attempts to eliminate customary systems.

Land alienation forced many villagers to abandon their homes and shift to work on plantations, and several districts suffered from depopulation. There was also fighting between the colonial government and "natives" over land use change decisions resulting from land alienation (Japhet 1979; Juhani 1989; Kjekhus 1977). Land alienation and the removal of indigenous land rights disrupted traditional land management practices and arguably contributed to soil erosion and widespread land degradation. As a consequence, by-laws were introduced in 1927 to control "native land use" and various land use schemes were implemented, supervised by agricultural extension officers. Their purpose was to ensure that:

"the African will have to adopt more intensive methods of cultivation. He will have to think of how much more he can get from taking care of that one acre and tending it more conscientiously, rather than growing another acre in addition. He must look after his cattle more carefully and by doing so incrementally help to restore fertility to his field" (Roungé 1949, quoted in Brandstrom 1985).

Concern amongst agriculturalists about the long-term effects on the soil led to the even greater enforcement of soil conservation and rehabilitation works, through fines and imprisonment. Prisoners were often made to construct soil conservation ridges, many of which can still be seen today !

During the depression years of the 1930's, the British enforced 'Grow More Crops' campaigns in Tanganyika, forcing African farmers to grow minimum acreages of cotton.

It was during the 1930s that Geoffrey Milne, working out of the Agricultural Research station at Amani in the East Usambaras, prepared the Provisional Soil Map of East Africa (Milne, 1935/6). He used soil categories such as 'plateau soils', 'plain soils', and red earths (laterised and non-laterised), etc. This map is regarded by many as the outstanding soil survey of this period, particularly as the work introduced the concept of the soil catena as a mapping unit. Milne defined his concept of the catena as "a regular repetition of a certain sequence of soil profiles in association with a certain topography" (Milne, 1935/36).

3.2 THE WAR YEARS AND LARGE SCHEMES

During the Second World War, agricultural production was planned around "strategic" crops (sisal and rubber) and "non-strategic" crops (eg, cotton). Large-scale, mechanised, wheat production began in 1942 on 8000 ha in Kilimanjaro and Arusha. Although yields were low, high prices made it a relative success. This was one reason for the uncritical reaction of the Director of Agriculture when the next scheme for mechanised state-farm agriculture was received - the post-war Groundnuts Scheme!

This ill-fated scheme is one of the classic examples of a large agricultural scheme which introduced new methods and that was implemented without undertaking adequate resource assessment surveys. There were faults of many kinds in the planning of this scheme which resulted in its failure (see Box 1). Amongst these were the fact that the environmental conditions in two of the three areas selected were not suitable.

Dudley Stamp (1964) has described the scheme as "an index both of continued ignorance of tropical soils and of the costliness of that continued ignorance". However, the scheme brought a wide recognition of the need for soil and other natural resource surveys prior to land development.

At the end of the war, a small number of large peasant farming 'schemes' were introduced in Tanganyika, combining attempts to prevent soil erosion (through enforced soil conservation) with other agricultural aims. The smallholder schemes did not directly reorganise land use but, because farmers were restricted to cropping one acre, they had to change from extensive to intensive cultivation. Instead of fallowing land, farmers were required to use livestock manure to restore field fertility. Examples of these schemes include the Sukumaland Development Scheme for cotton south of Lake Victoria, launched in 1947, which involved opening large areas of the depopulated Geita District; and the Mbulu Development Scheme, which involved a cattle census followed by compulsory reductions in the numbers of animals. There were schemes intended to protect the soils on the steep slopes of the Uluguru, Usambara and Pare mountains, where the peasants were forced to build bench terraces. But when the unpopular enforcing by-laws were subsequently relaxed, terraces were broken and manuring and tie-ridging ceased. By the mid-1950s, mass compulsion was seen to be counter-productive. A new policy of differentiation concentrated resources on relatively rich farmers and/or villages "who could be expected to increase their marketed production by the use of machinery and fertilizer, and by hiring labour" (Coulson, 1982).

Thus, whilst resource assessment and land use planning was undertaken in Tanzania before independence, the nature and scope of the activities varied from place to place depending on the particular objectives and the land users' interests, and were not nationally coordinated. Activities were centred in areas of high agricultural potential including the coffee, tea and sisal estates, and groundnut and tobacco settlement schemes. They included soil surveys, land resource inventories, farm boundary surveys, farm lay-out and soil conservation activities.

3.3 RESOURCE SURVEYS

Soil surveys were conducted in the Ruvuma and Kilombero areas in the early 1950s (scales 1:1,000,000 and 1:500,000, respectively) as part of the Central African rail link development survey. They were based on aerial photo interpretation and fieldwork, and mapped soil associations based mainly on parent material (Gibb 1952). In 1953, a study of the soils of 9000 km² of Sukumaland compiled survey work of other workers and resulted in a soil catena map (scale 1:125,000) based on Milne's (1935/36) catenary sequences (Malcolm 1953). In the following year, a national soil map was produced distinguishing eluvial and illuvial soil types and several catenary associations and soil complexes (Carlton 1954). A similar landscape-based approach was subsequently adopted by Scott (1961) for his regional soil map of East Africa showing soil-topography associations. A subsequent critique of soil maps covering Tanzania (Uriyo 1970)

Box 1: The Tanganyika Groundnut Scheme

In 1946, following a visit to Tanganyika, Frank Samuel, Managing Director of the United Africa Company (UAC), suggested to the British Minister of Food a scheme to grow groundnuts over 2.5 million acres in the 'empty spaces' of East Africa to satisfy Britain's acute shortage of oils and fats. The Minister accepted the general idea but a host of questions remained, including (a) whether the soil was suitable, (b) whether there were insuperable objections from the point of view of native land tenure, (c) how the finance was to be provided, and (d) whether the necessary agricultural machinery could be procured quickly (Morgan 1980).

A three man investigating team spent 9 weeks in the field and their report (the Wakefield report) proposed a substantially larger project than originally envisaged. It recommended mechanised clearance of 3.2 million acres over 6 years to secure an annual production of 600 000 tons of groundnuts on farm units of 30 000 acres. Advisers raised a number of technical doubts, recommended chemical analyses of the soil, and cautioned *inter alia* that rainfall distribution in the areas proposed was unsuitable and that Rosette disease would be a problem. Even prior to the mission, advisers had warned that half of the area being considered was arid, that half comprised soils unsuitable for groundnuts and that soil surveys were needed. But these risks were dismissed and the government approved the scheme in its entirety. It was implemented to be at 'full speed' under the responsibility of the Ministry of Food, with the UAC as Managing Agents until a new government corporation, the Overseas Food Corporation (OFC) took over in March-April 1948.

The areas chosen in Tanganyika (see Figure 3) were:

Central Province (Kongwa)	450 000 acres
Western Province (Urambo)	300 000 acres
Southern Province (Nanchingwea)	1 650 000 acres

In addition, 300 000 and 510 000 acres were to be cleared in Kenya and Northern Rhodesia, respectively. As part of the scheme, a new railway link was to be built in Southern Province from the new deep water port of Mtwara near Mikindani. The scheme envisaged several long-term benefits to Tanganyika:

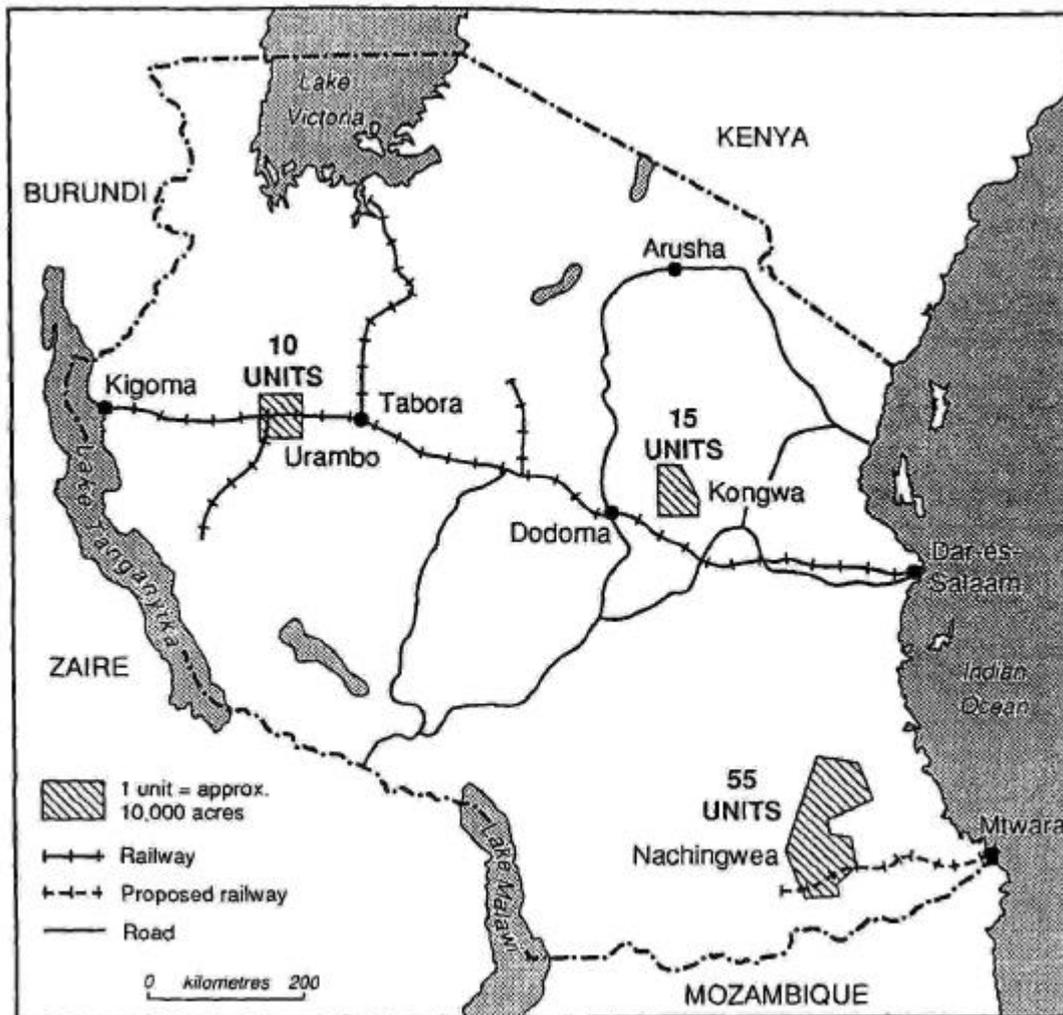
- The new port and railway;
- Development of large areas which would otherwise remain undeveloped for a long time to come;
- Other industries might be established in connection with the Corporation's activities - e.g. timber and fertilizers;
- The creation of a new African agricultural economy on co-operative lines.

Morgan (1980) reports a memorandum on progress to 31 January 1947 by UAC stating: 'the urgent need for progress, dictated by the desire to have a crop in the Spring of 1948, has rendered it impossible to enter the scheme on a fully planned basis'.

Second-hand, heavy bush-clearing machinery was procured, especially bulldozers (modified tanks) from American army surplus in the Philippines, and Canadian tractors. Bush clearing commenced on April 30 1947 following the arrival of the first of the European personnel, but the rate of progress was slow. Up to 75% of the heavy machines broke down. In addition, difficulty was encountered in extracting the very long roots of the vegetation to ready the land for ploughing. The machinery compacted the topsoil, making it unfit for groundnuts, and the disc ploughs were defeated by the abrasive nature of the soil. Also, there were considerable weed problems.

Stamp (1964) pointed out that millions of pounds might have been saved had the implications of the work of Cecil Charter in the Gold Coast (now Ghana) been understood earlier. In 1950, Charter had demonstrated the importance of the sharply angular sand grains in ancient African soils which packed under the weight of heavy machines to form a macadam surface and which quickly rasped plough discs. Also, the vagaries of the rainfall were not sufficiently appreciated.

Figure 6: Tanganyika Territory. Proposed Areas for Groundnuts Production Scheme



Source: Adapted from map planned by A.E. Kelleway, Historical Section, Cabinet Office, London, in Morgan (1980)

Box 1: Continued

The first crops [at Kongwa] are said to have been less than the seed put in the ground (Stamp 1964). By September 1949, it was acknowledged that the objectives could not be reached and a revised plan for a total of 600 000 acres by 1954 was introduced, concentrating on a rotation of crops rather than groundnuts. Even this plan could not be fulfilled in the time or within the capital provision. The British government was faced with a choice: to abandon the whole scheme or to introduce radical changes. A working party, appointed by OFC in March 1950 to recommend the long-term and short-term agricultural policies at Kongwa, recommended that 24 000 acres should be set aside for four farms to crop groundnuts and sorghum, with the remaining 70 000 acres to be used for grazing store cattle.

In January 1951, the cabinet wrote off a loss of £36 millions, and decided to change the emphasis completely. No further land clearing was to take place at Kongwa or Urambo. The land already cleared was to be used for experimental crop farming: four farms totalling 24 000 acres at Kongwa and 13 farms totalling 60 000 acres at Urambo in 1951. Clearing in the Southern Province was to be restricted to 60 000 acres by 1954. Experience in the Southern Province had demonstrated that the high cost of fully mechanised land clearing could be reduced by substituting hand labour, and suggested that cropping with groundnuts, maize and millet should be combined with cattle ranching. The proposals for Northern Rhodesia and Kenya were abandoned but the port at Mtwara was completed. Thus, the continuing project was rationalised by the government as 'a scheme of large-scale experimental development to establish the economics of clearing and mechanised, or partly mechanised, agriculture under tropical conditions' (Cmd 8125, 1951, quoted in Morgan 1980). OFC found it necessary to economise on general agricultural research expenditure, and soil survey work at Urambo and pedological studies in all regions were transferred to the East African Agricultural and Forestry Research Organisation (EAAFRO). OFC retained responsibility for agronomic studies.

In 1952, further drastic revisions of the plans slowed down further the tempo of operations and introduced the idea of using some areas for European and African tenant farming. As a salvage operation, the Tanganyika Agricultural Corporation (TAC) was established in 1954 by the Government of Tanganyika and the scheme assets transferred from the OFC to TAC in 1955. Activities at Kongwa were concentrated on cattle and pasture improvement with one arable farm to continue the experiment of mechanised agriculture under dry farming conditions.

By 1957, large scale arable production at Kongwa had been discontinued. With the exception of an African Tenant scheme and an experimental station engaged in research in pasture improvement, the whole of the cleared land was used for ranching. The Urambo area became a tenant farming and settlement scheme, depending largely on the production of flue-cured tobacco, with some maize and cattle. The farms at Nachingwea in Southern Province remained production farms based on large-scale mechanised farming of soya beans, groundnuts, maize, and some cashew. At Independence in 1961, the TAC became responsible for agricultural development projects for the government as its managing agents. It was merged with the Tanzania Development Corporation to form the National Development Corporation in 1964.

By 1992, the Nachingwea arable scheme was completely abandoned. Most of the land was left unutilised, with a small area being used for subsistence farming. In Kongwa, most of the area is still a cattle ranch managed by the National Ranching Company with a small area managed by the Ministry of Agriculture, Livestock and Cooperatives as the Kongwa Pasture Research Station. At Urambo, the land has been taken by villagers for subsistence farming.

Sources: Stamp (1964), Morgan (1980) and IRA survey in 1992

observed that the reliability of early maps (eg Carlton 1954) depended on accessibility. The parts of the maps with good road and rail access were better surveyed than remote areas. Another review (Keseba et.al. 1972) criticised early soil survey work for its lack of common methodology and soil analysis.

Perhaps one of the first surveys to claim to use soil series as mapping units was that undertaken by Anderson (1956) in Kongwa and Nachingwea districts (47 and 44 km², respectively). Map units were based on texture and soil colour and were, therefore, not actually soil series.

The first vegetation map of the country was also produced prior to independence (Gillman, 1949). As regards hydrological data, no large scale hydrometric work was undertaken on the Tanzanian mainland before the end of the Second World War. The Ministry of Water Development and Power subsequently assumed responsibility for collecting and publishing hydrologic data. The first officially published run-off data was gathered in Morogoro and Moshi areas in the early 1950s. Rainfall figures for the country go back to the early 1900s.

After independence in 1961, the scope and nature of the activities became more diversified, with more technical and scientific input from various ministries and institutions specialising in land use and resource assessment. These institutions are discussed in Chapter Four. Soil surveys were undertaken for specific purposes such as those for irrigation in the Rufiji basin (Anderson 1961) and the Pangani basin (Mikenburg et.al. 1968), and that for the development of the Lower Mgeta river area in Morogoro region (Spooner & Jenkin 1966). Further national soil maps were published including those of Anderson (1967a) and Baker (1970), both at a scale of 1:3,000,000. Anderson adopted soil classes used by d'Hoore (1964) for the Soil Map of Africa, eg, ferruginous soils, ferrisols, ferralitic soils, etc.; whilst Baker used soil classes indicating geological origin, eg, alluvial lacustrine soils, gneiss origin soils, etc. Anderson also produced an interpretative map based on his soil map showing potential land use in Tanzania (Anderson, 1967b), based mainly on soil fertility.

A soil survey of the whole country, split into four regions, was attempted in 1967-68 by the American Peace Corps (Johnson & Tiarks 1969; Sheehy & Green 1969; Wegel et.al. 1969; and Stuartz & Duckworth 1969). Maps were produced at 1:1,000,000 scale. This exercise represented the first nationwide application of aerial photography techniques to soil mapping.

S.A.Hathout, a lecturer at the University of Dar es Salaam, compiled various soil and agricultural potential maps in the early 1970s. These included a soil map of the country published in the Atlas of Tanzania (Hathout 1972), and several regional soil maps and agricultural soil capability maps - all published later in the Soil Atlas of Tanzania (Hathout, 1983). The legends to these maps were based principally on soil texture and drainage conditions (eg, sandy clay with good drainage) and related to landform and soil orders of the USDA Seventh Approximation (Soil Survey Staff, 1960). A map showing the erosivity of Tanzanian soils was subsequently prepared by FAO (Fournier, 1974). Other maps and studies of importance to national agricultural planning produced in this period by researchers at the University of Dar es Salaam include a map showing land use in Tanzania (Berry & Berry 1969) and another depicting agro-economic zones (Conyers, 1973), and an estimate of irrigation potential (Kates, et.al., 1969). Attempts were also made to classify Tanzania's soils in terms of the FAO-Unesco soils legend by Moberg (1973), and the Soil Taxonomy (USDA 1975) by Samki (1975).

A number of other important surveys were carried out in the 1970s which relied heavily on airphoto interpretation, eg, a survey of water resource development covering 38,000 km² of the Mkondoa-Wami river basin (ILACO 1972), and a study of land use potential of the Lower Rufiji basin (Cook 1974). A further provisional soil map of Tanzania was compiled by Samki (1977).

The use of satellite imagery for soil mapping has been attempted (Rumbelow-Pearce & Kamasho 1982). Vertical colour photography and computer-printed maps have also been tried for agricultural planning and soil conservation (Stocking 1983).

The National Soil Service (NSS), based at Mlingano near Tanga, was established in 1975 to coordinate soil surveys throughout Tanzania (see Box 7 in Chapter Four). It uses the FAO guidelines for soil profile description (FAO 1977) and the FAO-Unesco legend (FAO-Unesco 1974, revised 1987) for soil classification. Land evaluation is undertaken following the FAO Framework (FAO 1976) as recommended for adoption by Samki and Dewan (1980).

3.4 PLANNING

3.4.1 Planning Following Independence

Prior to independence, provincial administration was under 'Native Authorities'. All land was nationalised in 1962. In order to exercise centralised planning and administration, the provincial administrations were placed under politically appointed Area Commissioners through The Regions and Regional Commissioners Act 1962. This was followed in 1963 by the abolition of the role of traditional chiefs in administering local rural affairs. They were replaced by central government appointees. At the same time, development committees were created at regional, district and village levels (Cliffe & Saul 1972).

These changes altered fundamentally the management of land held under customary land tenure systems which relied on traditional leadership. The power vacuum at the local level was probably felt more over the use and management of common lands than with respect to other land (Lerise 1993b).

Following independence, national planning in Tanzania was through periodic Development Plans, the first ones being prepared by expatriate teams. The first Three Year Plan (1961-64) included a proposal to establish village settlement schemes in districts with low population densities. This involved the spatial organisation of rural settlements to modernise smallholder's land use management.

The preparation of the land use plans for these settlements, and the subsequent allocation of land, was carried out by the Rural Settlements Commission under the Ministry of Agriculture. According to Lerise (1993b), this marked the beginning of centralised physical planning in rural Tanzania. Several new settlements were established, but survived for only a few years (Lerise, 1993b). Following continuous cropping without fertilisation, the soils became unproductive. Family sizes increased but income-generating opportunities (particularly in non-farming activities) failed to grow correspondingly. Most settlers moved back to their original villages or towns. At the same time, government financial support was withdrawn as returns did not match expenditure. The Village Settlements Schemes idea was abandoned in 1965. The responsibilities of the Rural Settlements Commission were transferred to the Town Planning Division of the Directorate of Urban Development (DUD) in the Ministry of Lands, Housing and Urban Development. This then assumed responsibility for physical planning in both urban and rural areas.

The First Three Year Plan was followed by the First Five Year Plan (1964-69) which proposed more than 60 pilot settlement schemes to be established by 1970. Each was to comprise "about 250 comprehensively planned, economically profitable individual farms which would be encouraged to work on a cooperative basis" (Coulson, 1982). Previously, a number of settlement schemes has been established on sites of the abortive groundnut scheme.

3.4.2 Village Planning

In 1965, a division was created in the Ministry of Lands, Settlement and Water Development to provide planning, supervision and trained manpower for villages. The Arusha Declaration of 1967 oriented Tanzania towards socialism. The idea of transforming rural families, through resettlement, was revived in 1968, and development through grouping rural communities in *ujamaa* (familyhood) villages was vigorously pursued. In part, the plan was undertaken "to reduce land pressure in high potential areas and to utilize less productive areas more effectively" (Clark Univ. 1984). Lerise (1993b) explains that families living in scattered homesteads in the countryside were persuaded (by arguments that it would be easier for the government to provide schools, dispensaries and other

services) to abandon their scattered homes, shift to new sites, clear land - preferably virgin public land, and cultivate land close to homesteads. Little provision was made for training farmers to use more intensive cultivation techniques. It was assumed that the traditional system of shifting cultivation could be adapted to a more permanent system! The next stage was to persuade families to create an Ujamaa village by working together as communal farms and sharing harvests.

In 1970, three 'Presidential Planning Teams' approved village sites and prepared plans for them. In 1972, at Presidential request, a World Bank planning team produced a \$10 million plan directing investment into 135 selected villages out of 192 in Kigoma region (The Daily News, 5 and 6 November 1974). This plan provided the model for other foreign regional planning teams who were invited for all other regions in 1975. At the end of 1976, 13 million people were reported to be living in villages (defined by Nyerere (1977) as sites acceptable to the Party with adequate agricultural land and at least 250 families). But the way that villages were created did not encourage grass-roots participation because of government enforcement and little time allowed for discussion or real planning (Coulson, 1982). Villages were located around social services such as schools, dispensaries, water points or trading settlements, and almost always on or very near roads. The size and layout of the new villages were based on the economics of providing services and not on production. Unfortunately, due to the speed at which people were resettled, no provision was made for natural resource surveys. As a result, many villages were sited far away from water sources and grazing lands and in areas unsuitable for intensive agriculture such as escarpments or valley bottoms (TFAP 1989, Vol.1).

3.4.3 Farm and Land Nationalisation

At the same time as villagisation was being pursued on lands held under customary rights, the government nationalised large scale farms held under leasehold. Their management was placed under State companies which controlled national crop programmes and which could provide investment finance through access to foreign exchange. Some large-scale farms were established by parastatal organisations to grow maize, wheat and rice (Bernstein 1981). A well known example is the Tanzania-Canada wheat scheme established in 1970 by the National Agricultural and Food Corporation (NAFCO) at Mbulu (now Hanang) district (see Box 8).

The nationalisation of land in 1962, and large-scale farms in 1967, made government intervention to direct rural development much easier. Rural land owners became land occupiers (Lerise 1993b), paving the way for resettlement through villagization.

3.4.4 Decentralisation and Rural Integrated Development Plans

During the Second Five Year Plan (1969-74), the government decentralised bureaucracy to facilitate better rural management and planning. Native Authorities were abolished in 1972 with the establishment of 18 (now 20) regional administrations with the principal responsibility for planning and implementing development projects within each region. Regional and district staff were appointed by government. These new administrations were required to participate in national planning by identifying economic projects for their areas. Proposals were to be submitted to the Ministry of Development Planning for incorporation in the Third Five Year Plan. But the regions and districts lacked funds and manpower to prepare programmes in time. Donors subsequently provided funds and experts to help prepare development plans for the various regions. Thus, by 1976, Rural Integrated Development Plans (RIDEPs) were prepared for almost all regions. Since decentralization, RIDEPs

have undertaken numerous planning exercises of different types at regional level. Examples of RIDEPS are discussed in Box 2.

3.4.5 Training for Physical Planning

The 1972 administrative changes extended central state influence to the village level. This was followed in 1973 by the Tabora Declaration which stated that all families living in scattered homes were to move, settle in nucleated villages, and undertake communal farming by 1976. Technical physical planning was to be undertaken by the Town Planning Division of the Ministry of Lands, identifying suitable sites and preparing land use plans for the new villages. But manpower limitations severely restricted the rate at which plans could be produced. On average, 100 villages were formed and registered annually between 1973 and 1976 (Lerise 1993b). To assist the process, a handbook on rural planning principles was prepared and distributed to Regional Town Planning Offices (MLHUD 1975). This handbook laid emphasis on ensuring the availability of sufficient agricultural land and water, providing good access, and selecting flood-free and tsetse-free sites. The handbook also highlighted the need to involve villagers in the site selection process. The physical planners responsible for these tasks were assumed to have the necessary skills ! Unfortunately, the handbook was rarely used and, in practice, sites were selected by district and other level politicians (Lerise 1993b). Detailed land allocation was undertaken by Village Councils.

In 1975, in an effort to provide more local physical planners for the resettlement programme, a training course in urban and rural planning was established at the survey training school (now the Ardhi institute). It concentrated on teaching skills in map making, land surveying, site selection, subdividing land, and land use control. This still remains the focus of the present urban and rural planning course at the Ardhi Institute.

3.4.6 Regional Physical Plans

The commencement of the The Third Five Year Plan was delayed to 1976 because of the villagization programme. It stressed the need to increase food production and to consolidate the villagization. Under this plan regional physical planning was introduced to guide the implementation of RIDEPS and to guide village land use planning. Financial assistance was provided by FINNIDA.

Zonal physical plans were prepared for the Uhuru Corridor Zone (Mbeya, Iringa, Morogoro and Coast regions) and approved by Cabinet in 1978. Another plan for Lake Zone (Mara, Kagera, Mwanza and Shinyanga regions) was completed in 1980. An evaluation by FINNIDA of the Uhuru

Box 2: Examples of RIDEPS

Tabora Rural Integrated Development Project (TRIDEP):

The project was initiated in 1977 in Tabora region, with the financial assistance from the World Bank. According to Mitchell (1984), the aim of the project was to promote rural development in the region. Existing regional services and structures were to be utilized and strengthened, pilot development in agriculture, livestock and fuel wool production established, and improvements made on roads and water supplies. The programme therefore included various components focussing on forestry, roads, livestock, agriculture, water and land use.

The Land Use Component (LUC) was established to provide reliable information about current land use and agricultural potential (Mitchell, 1984). It was funded by the British ODA and the work carried out by the Land Resources Development Centre (now part of the Natural Resources Institute) in collaboration with government officers from Tabora Region. According to Mitchell (1984), the primary aims of the LUC were:

1. To provide the necessary knowledge of the potential and limitations of the land of the Tabora Region, and of the existing land use, to enable long-term development decisions to be made on a sound environmental basis.
2. To develop appropriate land evaluation and planning techniques to enable village authorities to take the necessary steps to improve productivity and prevent mis-use of the land, and to provide them with a framework for future implementation of their objectives.
3. To train Tanzanian land use staff to undertake land evaluation surveys and to design and implement land use plans.

By the early 1980s, when TRIDEP ceased to operate, the LUC had developed methodologies for assessing and planning village natural resources. Sixteen village land use plans were prepared and approved by the relevant authorities, and the natural resources covering the entire Tabora region were also mapped. In 1984, the LUC was extended. But it was redesigned and became the Tabora Land Use Planning Project (LUPP). According to Wheeler *et al.* (1989), the objectives of the LUPP were:

1. To refine land use planning methodologies originally developed by LUC,
2. To reflect these methodologies through implementation,
3. To complete the training of local land use planning staff.

The LUPP continued to be funded jointly by ODA and the Government of Tanzania. The support from ODA ceased in 1986. More details of this project are given in The Tabora Case Study (Appendix 3).

Rukwa Integrated Rural Development Programme (RUDEP):

The Programme started late in 1970's (RUDEP 1991) funded by NORAD. The objectives were to integrate those projects in other sectors so as to ensure coordination and mutual support through the existing government structures. Thus, unlike other IRDPs in the country, RUDEP did not establish independent systems for programme planning and implementation. It also placed special emphasis on the disadvantaged, in particular women, and encouraged the active participation of individuals, households and communities in the planning and management of their own development projects. To ensure sustainability, the projects were planned according to the resources within the region. The programme still continues with inputs from other donors.

Box 2: Continued.

Tanga Rural Integrated Development Programme (TRIDEP):

The Programme commenced 1975, funded by GTZ. Its main purpose was to obtain comprehensive environmental and socio-economic information as a basis for planning the socio-economic development of the region for the period 1975/76 - 1979/80. A massive amount of data has been collected and programme implementation continues.

Other RIDEPS include: Dodoma, Kigoma, Dodoma, Mtwara/Lindi, Mwanza and Shinyanga.

Corridor Plan showed that it was not used by regional economic planners for determining the location of investment projects (Lerise 1993b). FINNIDA discontinued its financial support and the regional planning process ceased.

3.4.7 National Plans

After the formation of the United Republic of Tanzania (following union between the Tanzania Mainland and Zanzibar), the First Union Five Year Development Plan (1981-1986) was drawn up. A second such plan followed for 1989-1993. In addition, the government has prepared other plans. Annual plans have been published since 1961 and two long-perspective plans have been developed: the Fifteen Year Plan (1964-1980) and the Twenty Year Plan (1981-2000). There have also been emergency plans and strategy documents, including: the National Economic Survival Programme (1982), Structural Adjustment Programme (1983/85), Economic Recovery Programme I (1986/67 - 1988/89), Economic Recovery Programme II (Economic & Social Action Programme 1989/90 - 1991/92), and the Priority Social Action Programme (1989 - 1992).

3.4.8 Participation

Under the first structural adjustment programme (1983/85) which aimed at dealing with Tanzania's economic difficulties, the World Bank required Tanzania to "roll back the state" and replace the conventional five year development planning system. The plan concentrated on dealing with inflation and public expenditure. Physical planning was considered unproductive and was suspended.

Local Councils were reintroduced in 1982. In 1988, the right to allocate land was removed from local councils and placed under regional and district land allocation committees (see Chapter Four and Box 9).

Whilst the 1975 Village and Ujamaa Villages Act enabled villagers, through Village Assemblies and Village Councils, to make decisions affecting their own development, the evidence suggests that they were not genuinely participative but were dominated - and influenced in their decision-making - by the official representatives backed by the resources of government (Coulson, 1982). Since 1976, the 'requirement' to live in villages has been relaxed, but never rescinded. The growing perception that the villagization and ujamaa policies are no longer in force has encouraged many individuals to attempt to regain lands they lost during villagization (Hoben, et.al., 1992).

Participatory planning or bottom-up planning is now promoted widely as an alternative model but it faces problems of inflexible and hierarchical institutions, undefined lines of authority and responsibility, and a weak information base. In the absence of a panacea, appropriate methods of planning and methods of survey to deliver the data that are needed have to evolve in the field. This is most likely to occur where there is an equal and long-standing partnership between decision-makers, planners and natural resources specialists.

Box 3 illustrates a step in the direction of participatory planning. It describes an innovative planning procedure in Tabora Region developed over more than ten years involvement of LRDC in resource assessment and land use planning.

Participatory methods¹ have been employed widely in many countries in an effort to stimulate, support, and strengthen the active involvement of individual citizens and communities, particularly resource-poor farmers, in research and in planning resource use and management. But these methods appear to have been little used in Tanzania. Mogella (1982) discusses community participation in rural water supply and, in particular, the experience of Finnwater Consulting Engineers in studying water resources in Mtwara and Lindi regions, designing a Master Plan and implementing construction work. In this project, community participation covered trench-digging and pipe-installation, training, and running and maintenance of the water installations. In other words, villagers 'participated' by supplying their labour. They were not, apparently, involved in expressing their needs for water, in siting wells or taps, or in designing the plans.

There has been an increase in the amount of public consultation prior to development activities. For example, the recent preparation of proposals for a marine park on Mafia Island involved a great deal of consultation amongst fishing communities, and community-level consultations concerning wildlife management have been undertaken in areas around Selous Game Reserve and for the Serengeti regional conservation strategy. But the only published example known to the authors of the use of recognised participatory appraisal methodologies actually concerns village land use planning (Johansson and Hoben, 1992). Rapid Rural Appraisals (RRAs) were conducted in four villages to gather information about land tenure issues. One of these exercises is detailed in Box 6 in Chapter 4, and revealed how the official government plan, made without the participation of the villagers, was totally unrealistic and could not be implemented without force. Participatory rural appraisal (PRA) techniques are now being introduced into many of the smaller scale development projects funded by NGOs. For example, the natural resource component of the TCRD Singida Integrated Rural Development Project has been using PRA techniques prior to commencement of any village project.

3.4.9 Planning in the Wildlife Sector

During colonial rule, the emphasis was placed on game control and the preservation of hunting values. Controlled hunting areas and reserves were created in areas where there was little conflict between man and wildlife. Following independence, the emphasis shifted to more positive conservation through planned utilization of resources. Game estates were required to contribute to

¹ **Participatory methodologies:** A wide variety of names and acronyms have been given to these techniques. Some of the better known ones include: Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), Farmer Participatory research (FPR), Diagnosis and Design (D & D), and Farmer First Methods (FF).

Box 3: Evolution of Practicable Procedures, An Example from Tabora Region

In Tanzania, land use problems arose both from pressure on the land and resettlement of farmers in new villages located by administrative fiat. The problems were addressed first by an externally-funded resource inventory of Tabora Region. Subsequently, a rigorous village land use planning procedure was developed based on algorithms of carrying capacity, economic viability, livestock carrying capacity and fuelwood availability (Corker 1982). The procedure proved too ambitious in terms of the time and expertise demanded (at least 45 days by an interdisciplinary team per village plan) and also in terms of the resources available to implement desired developments. With the benefit of this experience, a simplified procedure has been evolved (Wheeler *et al.* 1989):

I Quick appraisal

- i Using air photos or 1:50 000 enlargements of SPOT imagery, delineate village boundaries and measure areas suitable for cultivation and areas actually cultivated.
- ii Collect basic data on population and farming systems.
- iii Discuss local land use problems with village leaders to arrive at a crude appraisal of the match between village land resources and village needs.

This takes a three-man team about four days. On the basis of such appraisals, priority villages for the next stage of planning can be identified at district level.

II Framework plan

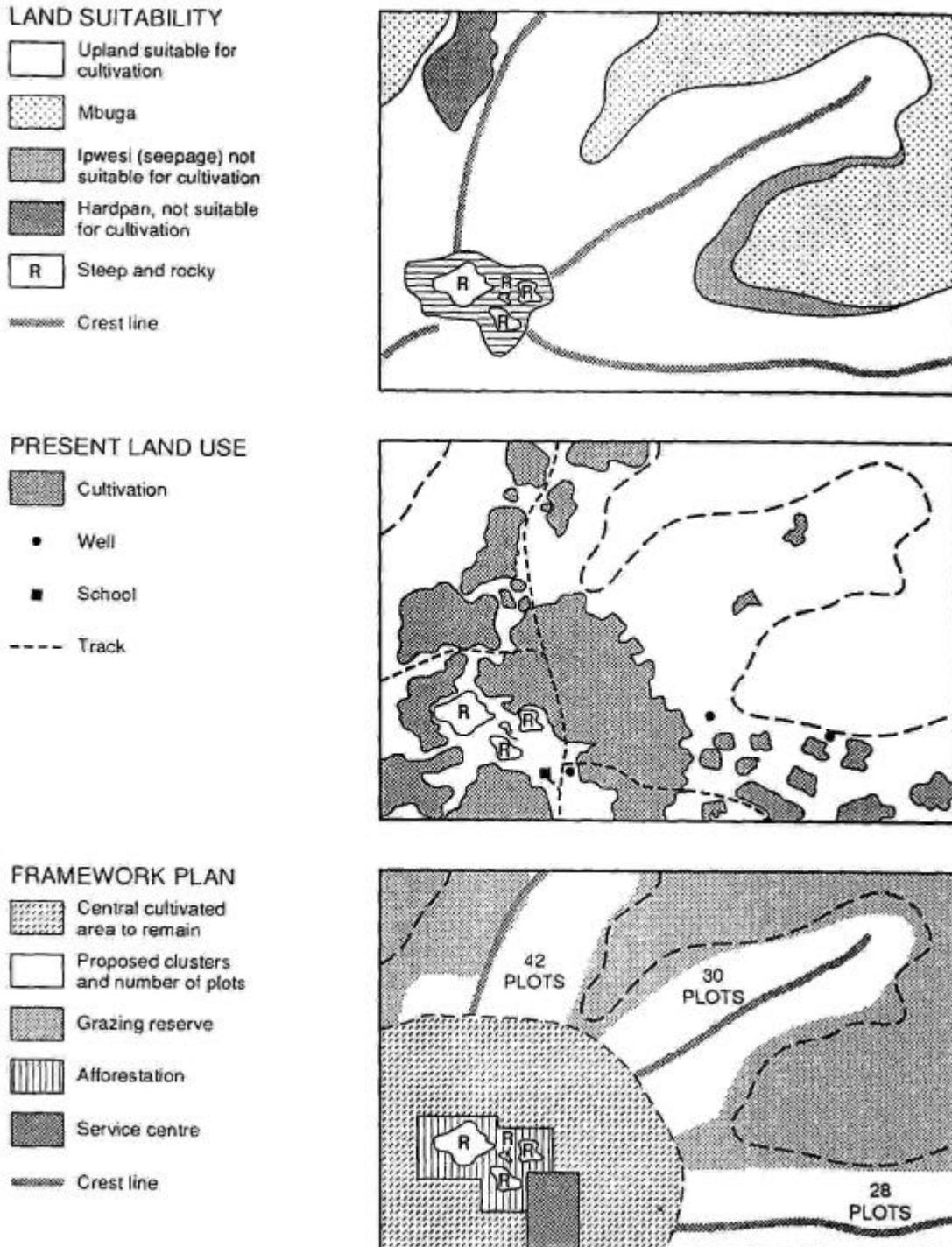
- i Sketch landforms, land use, soils, eroded areas, water sources and tracks on 1:50 000 imagery.
- ii Field check, especially of soils and water sources.
- iii Survey village and sample households to determine population distribution and growth, land holdings, livestock ownership, levels of production and other economic activities.
- iv Assess land suitability and draw up an indicative land use plan. Discuss its implications with the people concerned.

The whole procedure, including the production of a framework plan, involves a three-man planning team over about two weeks, living in the village.

Implementation relies on devolution of authority to the Village Council which resolves conflicts and determines the priorities for development. The resulting framework plan (Figure 13) is its responsibility. It can allocate land according to customary law, lay out individual farm plots, and manage communal land uses such as woodlots and grazing reserves. Locally-developed plans can be implemented because they do not rely on major external inputs. A problem of this approach is that the villages themselves are not involved from the outset - the initiative is external - nor in the active gathering and appraisal of data. Furthermore, Village Councils in Tanzania are essentially organs of government and Village Chairmen are political appointees. As a consequence, Council decisions do not necessarily reflect the needs, wishes or aspirations of the village community as a whole.

In Tabora, the planning teams bring in considerable expertise in land resources and planning built up by the externally-funded land use project. Extension of the simplified procedure to other areas without this benefit is unproven (see Box 24). In the absence of external funding, the cost of SPOT imagery has proved prohibitive. If air photographs were available they would be better.

Figure 7: Land Suitability, Present Land Use and Framework Plan for a Village in Tabora Region



Source: Adapted from Wheeler et al., 1989

economic development and funds derived from such utilization were returned to conservation to improve communications and increase staff numbers. The main types of wildlife management areas now include:

National Parks: under the control of a Board of Trustees appointed by the President, and administered by a parastatal - the Tanzania National Parks Authority (TANAPA). Parks are set aside for complete protection of the total environment, and are developed for sight-seeing and photography. No settlement is allowed, except for park and lodge staff.

Game Reserves: These are under the direct control of either the Ministry of Tourism, Natural Resources and Environment through the Wildlife Division or the District administration. They are specifically set aside for game protection. Development is based on multi-purpose utilization of wildlife for tourist sport hunting and game viewing. As in National Parks, settlement is prohibited.

Some game reserves, designated as National Projects, fall under the direct control and financing of the Wildlife Division, whilst some others (usually smaller) are administered and financed by the regional authorities.

Ngorongoro Conservation Area: a special area under the control of a Board of Trustees and administered by its own parastatal - the Ngorongoro Conservation Area Authority. Management emphasis is placed on combined development of all natural resources and of Maasai herders resident in the area.

Game Controlled Areas: in which there is no restriction of entry, cultivation and residence, but where wildlife is utilized, under licence, for both local and tourist hunting on a controlled yield basis and for the production of food for local people, particularly those dependent for protein food on game meat. However, in instances of conflict over life and property, licences to kill wildlife are not required.

Cooperation and coordination between the institutions and authorities (including regions) responsible for administering these categories of wildlife management areas is inadequate and efforts are duplicated. This situation has made effective planning very difficult for the wildlife sector and for consumptive and non-consumptive wildlife utilisation. Management has concentrated on anti-poaching and the development of tourism. Management plans have been prepared for some game reserves and parks. For example, a plan for the Serengeti National Park has been approved (Campbell et.al. 1991), whilst draft plans have been prepared for the Selous Game Reserve (Wildlife Division/GTZ 1990) and for Kilimanjaro National Park by the TANAPA Planning Unit (TANAPA 1992). Plans have been prepared by the Wildlife Division for other activities including, for example, crocodile management, elephant conservation (in 1991), and avifauna management - with special reference to the live bird trade (in 1992).

USAID is currently funding the Planning and Assessment of Wildlife Management project (PAWM), within the Wildlife Department, both to plan for the Department and in an effort to harmonise planning within the wildlife sector amongst the different responsible agencies. In addition, the Swedish International Development Agency (SIDA), through IUCN, is funding a Planning Unit within TANAPA.

Wildlife-related research and surveys have been carried out at Serengeti Wildlife Research Institute (SWRI) for many years. In the 1960s, scientists at the SWRI helped to pioneer quantitative methodologies of aerial wildlife census, using formal transect grids and high-powered sampling statistics. The methodology for such surveys is described by Ecosystems Ltd (1979). The use of light aircraft revolutionised the methodologies of wildlife survey and assessment (in areas where patterns

of visibility permitted aerial search - the drier grasslands and savannas). One of the first aerial wildlife reconnaissance surveys was, however, previously undertaken over the Nachingwea block of the ill-fated groundnut scheme in 1947/8 where Warden Ionides used a light aircraft to map elephant concentrations.

The era of Systematic Reconnaissance Flights (SRF) began in the early 1970s. A typical example is that of the 94,000 sq km of Tabora Region in the miombo woodlands of western Tanzania (Ecosystems Ltd 1979). Details are given in Box 4.

The government places a high priority on agriculture and rural development since 95% of the Tanzania population lives in rural areas and works mainly in traditional agriculture. The government policies aim at gradually narrowing the sizeable gap in rural and urban incomes.

Box 4: Systematic Aerial Reconnaissance Flights - An Example from Tabora

The Tabora survey was undertaken using a high wing monoplane flying at a height of 300 ft above ground at 90-100 mph. It used a 3% sampling grid over the 94,000 sq km, based on transects 10 km apart. The following parameters were all mapped and, where possible, assessed in abundance classes or quantified: vegetation parameters (cover type, canopy closure, ground cover and greenness); physical parameters (topography, soil colour, erosion, and water); human parameters (transport features, infrastructure, settlement types, agriculture, resource use such as logging or hunting camps, and cattle). Wildlife was analysed by species and number, using camera counts for large herds. Computer analysis enabled the presentation of maps based on cells of 10 km square showing the distribution of resources and their densities. Further analysis allowed the correlation of factors, for example the relationship between cattle density and erosion, or wildlife species with habitat types (looking at vegetation, water, and human disturbance, etc). The repetition of the survey during different seasons provided an understanding of seasonal changes, and repetitions at three year intervals allowed an analysis of changing patterns of resource use.

The spatial data generated from the SRF were compatible with both existing theme maps and topographic sheets, and with satellite imagery. A major benefit of SRF for wildlife planning is the ability not only to examine the wildlife resource, but also to investigate patterns of resource and land use outside the wildlife area, and to determine spatial and temporal trends in these parameters.

The ability to collect and analyse data on a cross sectoral range of resources meant that SRF was one of the first truly integrated multi-resource survey methodologies.

Source: Ecosystems (1979).

3.4.10 Planning in the Forestry Sector

Forest Planning is largely governed by the comprehensive Tanzania Forestry Action Plan (TFAP 1989), developed as an integrated planning and development package with donor support, following FAO guidelines.

Plans cover all fields in forestry, including industrial forests (natural and plantation), community forests and agro-forestry, conservation forests (for biodiversity and catchment preservation), training, research, and infrastructure. The reports stress the linkages between forestry and the water, power and agricultural sectors. The TFAP was linked to changes in policy and legislation which are still being debated.

3.4.11 The Rufiji Basin Development Authority

In 1975, the Rufiji Basin Development Authority (RUBADA) was established by an Act of parliament to promote, regulate and coordinate all development activities in the Rufiji Basin. It is currently a parastatal organisation under the Ministry of Agriculture, Livestock Development and Cooperatives and is financed by the government and EEC. In the agriculture sector, RUBADA has established KOTACO and Tanzania-Iran IKA Rural Development Project (TAN-IRAN RUDEP), whilst in the hydro power sector it has undertaken a feasibility study of Stiegler's Gorge and a master plan study on the hydropower potential of the Rufiji Basin). RUBADA is also preparing the Usangu land use plan to protect the catchment area of Little and Great Ruaha Rivers.

3.4.12 Sectoral Planning

In addition to the official development planning process, various sectoral planning exercises have been undertaken over the last 20 years. For example, water master plans were prepared for various areas by consultants, eg, Mtwara/Lindi (Finwater 1977), Rukwa and Kigoma (Norconsult 1982a, 1982b), and Iringa, Mbeya and Ruvuma (DANIDA 1982). The Tanzania Forestry Action Plan (MLNRT 1989), covering the period 1990/91- 2007/08, was prepared by the Forestry and Beekeeping Division of the Ministry of Lands, Natural Resources and Tourism, supported by FINNIDA and with the extensive participation of a range of related government agencies and NGOs. It did not involve any new surveys but reviewed existing data and information (through commissioned background papers) in the identification of key issues and the formulation of programmes for action.

3.4.13 The National Land Use Planning Commission

The preceding sections illustrate that land use planning in Tanzania is still dominated by sectoral interests which tend to conflict with each other. Administratively, there is a Land Use Planning Section within the Ministry of Agriculture and Livestock Development and Cooperatives (MALDC), and a Town Planning Division and a Surveys and Mapping Division (SMD) within the Ministry of Lands. A National Land Use Planning Commission (NLUPC) was established in 1984 to coordinate the activities and interests between the different sectors. The government realised that "the existing legal, policy and institutional set up had not been effective in coordinating various land use related activities and programmes undertaken by different sectoral organizations" (NLUPC 1992). In the regions and districts, Land Advisory Committees have been established and, in some regions, multi-disciplinary land management teams have been organised. But progress is very slow.

The NLUPC has a wide mandate ranging from the formulation of policies on land-use planning and coordinating the activities of various bodies to the preparation of physical plans at all levels and any other land use related activities. Several plans have been prepared:

Lituhi land use plan - to resettle flood victims in Ruvuma region;

Sanya plains plan - aimed at solving land use conflicts and operating problems caused by the locating of Kilimanjaro international airport in the centre of an area used by pastoralists and crop cultivators;

A physical plan for the northern zone (Tanga, Kilimanjaro and Arusha regions) - prepared by consultants in 1989;

Loliondo land use plan - to address land use conflicts between Masai pastoralists and wildlife conservation on the Ngorogoro plains in Arusha region;

A physical plan Kiteto district, Arusha region, currently being prepared, to address conflicts between crop cultivators, migrant smallholders, large-scale farmers, local communities, pastoralists and wildlife interests.

The NLUPC is still developing its *modus operandus*. Most staff are seconded from other Ministries.

Village land use planning was re-activated in 1985 to implement the 1983 Agricultural Development Policy. District Land Use Planning Teams were established comprising multidisciplinary teams of experts coordinated by a physical planner (see Chapter Four). The need for village planning under the Policy has been interpreted differently in different regions: in Iringa, the Regional Town Planning Office, with the District Land Use Planning Team, has mapped existing land use broadly; in Dodoma, planners prepared plans sub-dividing farm plots (effectively de-villagization); and in Lindi Region, plans concentrated on the residential parts of villages only (Lerise 1993b).

To systematise village planning, the NLUPC commissioned a team to prepare draft National Village Land Use Planning Guidelines (NLUPC 1990). These focus on ensuring sufficient land for agricultural and livestock needs, overcoming village boundary conflicts and land misuse, and creating the basis for issuing long-term leases to villagers. The guidelines still rely on outside experts and, if adopted, will require even more technical inputs, more funds and more skilled planners. They continue to fail to acknowledge a role in planning for villagers' indigenous knowledge and ability to make land use decisions in their own best interests. The present organisation of planning in Tanzania is discussed in Chapter Four.

3.5 CONSERVATION STRATEGIES

In 1990, work commenced on the preparation of a National Conservation Strategy (NCS), coordinated by the newly formed National Environmental Management Council (NEMC). The NCS process is based on concepts of 'conservation for development' first espoused in the World Conservation Strategy (IUCN/UNEP/WWF 1980). The latter was subsequently updated in a revised report, "Caring for the Earth" (IUCN/UNEP/WWF 1991) which focussed more on the concept of sustainable development as promoted by the report of the World Commission on Environment and Development (WCED 1987). Following the 1992 UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, Tanzania has modified the NCS process to encompass the goals and priorities of Agenda 21, one of the main accords agreed at UNCED. Accordingly, work is proceeding, with support from SIDA, on preparing a National Conservation Strategy for Sustainable Development (NCSSD). To date, two workshops have been held (at Dodoma in 1990, and at Tanga in 1991) at which background papers, prepared by Tanzanian experts, have been considered, and a first draft of the NCSSD has been prepared (NEMC 1994). A regional consultative process is planned in 1994 (Lweno 1992). As with the National Forestry Action Plan process, no new data collection or survey work is involved.

In parallel to the NCS, a regional conservation strategy is being prepared for the Serengeti ecosystem. Launched in 1985, it is a project of the Ministry of Tourism, Natural Resources and the Environment in collaboration with IUCN. The goal is to ensure the long term conservation of the Serengeti-Mara migratory ecosystem as one of the world's most important wildlife areas. This aim is to achieve conservation through the collaboration of all resource users and managers in active adaptive planning and management (Hough 1992).

3.6 CONFLICTS IN PLANNING IN TANZANIA

In Tanzania, land use planning is now seen as a key mechanism to combat the wide range of problems associated with land degradation, since it tries to ensure the sustainable utilisation of natural resources and the maintenance of 'environmental integrity'. The commitment of the government to conserving the natural resource base is underscored by the 1983 Agricultural Policy (Ministry of Agriculture 1983) in which it is stated that agriculture "must be integrated with the development of livestock, and the preservation of Tanzania's natural resources of soil, water and fuel". But, in this report, we maintain that the solutions to environmental problems in Tanzania do not lie in land use planning as it is currently practised in the country. This study is based on research which investigated land use planning in Tanzania, in its broadest sense, and its potential contribution to sustainable development.

Land use in Tanzania continues to be dominated by traditional practices which typically depend on culture, experience, customs, beliefs, traditional laws and local knowledge. Such traditional forms of resource management and land use planning occur at the individual farm (shamba) level and even at village level. By contrast, at higher levels (district, regional and national), planning is carried out by official government land use planners and is based on centralised, top-down planning by experts with formal training in physical planning skills'). The official registration of land use for agriculture, forestry, wildlife and urban settlement is provided under the relevant respective sectoral legislation (see Box 5).

The two forms of planning are often in direct (silent) conflict and villagers and farmers continue to pursue their traditional land use practices, usually without openly rejecting or opposing the 'modern' land use plans prepared by government officers. This study explores this problem. One notable exception to this 'peace' is the vigorous and continued opposition of the Barabaig people of Hanang district to the appropriation by government of their traditional grazing lands for a Canadian-funded mechanised wheat scheme on the Basotu plains (Lane 1991) - see Box 9. But the problem of lack of implementation of modern land use plans is not only limited to traditional land users; it also applies to government planners, policy-makers and decision-makers who do not adequately use the information generated from surveys to facilitate their work. Certainly there are many possible explanations.

It has become apparent that information on natural resources is, more often than not, collected without clearly establishing the end-user. The way that information is to be used is not often considered during the early stages of planning data gathering and, ultimately, much of the data generated is not effectively available to the anticipated users. Another persistent problem is that sectorized planning is the norm in Tanzania despite the long-standing cries for inter-departmental planning. This situation prevails despite the establishment, in 1984, of a National Land Use Planning Commission with responsibility to coordinate all planning activities in the country. The research examined the reasons for this situation.

Box 5: Legislation Controlling Land Use	
LAND USE	LEGISLATION
Registration of farm lands	Controlled through a leasehold certificate issued under The Land Ordinance 1961 (section 9 (1)). Once a certificate is issued for agriculture and pastoral purposes, a change of use is not allowed unless the certificate is also changed, a process which involves the Agricultural Officer, Director for Surveys and the Commissioner for Lands.
Forest areas	Gazetting and degazetting of forest areas and their management is provided for under the Forest Ordinance 1957
Wildlife protection areas	The establishment of Game Reserves, Game Controlled Areas and National Parks is regulated under the Wildlife Conservation Act 1974.
Urban areas	The demarcation of urban areas and their extension into rural areas is controlled by the Town and Country Planning Act 1956 (revised 1961), and The Local Government (District Authorities) Act 1982.

Source: Lerise 1993.

3.7 AVAILABILITY OF LAND RESOURCE DATA, TYPE OF DATA AND ITS SOURCES

To date, nearly 35% of the country is covered by low intensity soil surveys at a scale of 1:130 000 or smaller, but not more than 5% by medium intensity surveys and less than 0.5% by high intensity surveys at a scale of 1:30 000 or larger. Basic data on the available soil survey reports and maps are given in a bibliography prepared by Cook (1975). Two thirds of Tanzania remains unsurveyed. Another problem is the lack of standardization and coordination of soil survey methods. This is due to the fact that a number of agencies/institutions have been involved in conducting soil surveys in the country², each using its own methods and approaches.

Land resource data exist for certain parts of the country but are scattered in various institutions and government offices and, consequently, access to this data is extremely difficult. For example, a lot of data is available at the National Soil Service Centre at Mlingano, in Tanga Region, and at its sub-centres. The Soils and Plant Laboratory at Mlingano was established in 1934 as part of the East African Sisal Research Station, and became one of the largest laboratories in the country. Although currently not well equipped and with technical staff still requiring further training, the laboratory is able to maintain a reasonable output for routine analyses up to 2000 samples per year.

² These include: the Institute of Resource Assessment (University of Dar es Salaam), the Land Use Planning Unit of the Ministry of Agriculture, Livestock Development and Cooperatives, Tabora Land Use Planning Project, the National Soil Service, the Soils Department of Sokoine University of Agriculture, and Uyole Agricultural Centre.

Land resource data are also available at several ministerial libraries: the Ministry of Agriculture, Livestock Development and Cooperatives; the Ministry of Tourism, Natural Resources and Environment; the Ministry of Lands, Housing and Urban Development; and the Ministry of Water and Energy. Such data can also be found at the Institute of Resource Assessment, the libraries at the University of Dar es Salaam and at Sokoine University of Agriculture, and at Uyole Agricultural Centre. In addition, some integrated regional development plans can be found at the offices of the regional administrations. However, many IRDP documents and reports of zonal physical planning exercises are seldom seen in libraries. An enormous amount of material, painstakingly gathered, seems to have been lost. Why is this so? Certainly, copies were not reproduced in large numbers, nor were they distributed widely. The reason may be that many IRDP documents were never regarded as planning documents as such, but rather as 'shopping lists' for obtaining project financing. Another reason may be that clear objectives or reasons for the collection of data were not specified and thus, since the data had no apparent immediate use, it was forgotten and lost.

Other institutions and offices keeping land resources data are listed in Box 8 in Chapter Four.

The data found in the above institutions and offices include:

Physical characteristics

Geographic positions

Relief

Climatic conditions

Resource availability

Soils and Land Resources of the area

Soil fertility and management

Soil classes and characteristics

Land resource inventories

Carrying capacity of the land

Land evaluation and suitability

Soil maps

Agro-ecological maps

Land classification (residential, commercial, agricultural, etc.)

This list indicates a bias towards physical environmental data. This may provide a clue to why most land use plans have not been successful. Sustainable development planning requires that attention be given to social and economic data/factors as well as physical environmental conditions. We assume that few, if any, socio-economic data have been taken into account in land use planning in Tanzania - particularly since there has been virtually no community participation in the process. Reliable and realistic socio-economic data reflecting conditions in rural communities can only be derived through participatory planning approaches. Chapter Four describes the current "official" land use planning process in Tanzania, and highlights the lack of genuine community participation.

CHAPTER FOUR

THE PLANNING PROCESS IN TANZANIA

4.1 BACKGROUND

Tanzania has tried a number of models of decision-making and planning processes, some of which are highlighted in Chapter Three. Essentially, planning and decision-making processes prior to 1972 were highly centralised. The major shortfall of this centralized process was that the planner was too far away from the planned, making it difficult for him/her to fully appreciate and understand the issues involved. The bureaucratic procedures required by such a centralised system could not respond promptly to immediate problems. Experience has shown that the mobilization of people and the organization and build-up of institutions can often play a key role in the success or failure of planned development programs. In 1972, Tanzania attempted yet another model - that of decentralisation which, to a great extent, is still operational to-date. The decentralisation process was immediately followed by the villagization programme and the establishment of Village Councils. The latter were geared towards accelerating development at the village level and creating the village as the smallest unit for the planning and control of rural development projects. The aim was that villagers should participate fully in the actual planning and decision-making process, and in the implementation, monitoring and evaluation of development projects. The Tabora Land Use Planning Project (see Appendix 2) attempted to involve villagers, through the Village Council, in planning and decision-making, by holding discussions and meetings at all levels.

The decentralisation process has been described as adding a further two layers of decision-making bureaucracy (regions and districts) to the existing central government machinery, rather than devolving power from the centre to the district.

In theory, the planning process in Tanzania appears to have emphasized the concept of bottom-up planning with the participation of the villagers. Unfortunately, the actual implementation of the concept has been difficult. One of the problems has been confusion and disagreement amongst the various government sectors and institutions about the roles they should play, particularly in complementing each other with respect to land use planning exercises. In addition, village leaders and Council members were not trained in the skills necessary for 'community leadership, administration and management' under the hierarchical system that was established (this problem is illustrated by the case of Kwemazandu Land Use Plan and the Tabora Land Use Planning Project - see Appendix 2). Furthermore, in village elections, some villagers tended to vote for a candidate for village Chairperson who "would not bother them" so that they could be left alone to get on with their own affairs. Thus, although given a chance to participate, they were not interested. This was an extremely common attitude amongst villagers in Singida region (Koziell, pers.comm.).

Awareness of the importance of participatory planning, especially in rural communities, is also still not well developed among planners. Hoben et.al. (1992) notes that, in Tanzania, "government elites have a deeply ingrained faith in land use planning in which experts prepare maps indicating in considerable detail how land should be used". In practice, planning continues to be urban-biased and development plans continue to be top-down. Consequently, implementation is difficult and the "development" process, therefore, slow.

The dangers of top-down village planning is illustrated by a study reported by Johansson and Hoben (1992). Rapid Rural Appraisals (RRAs) were conducted in four Tanzanian villages to gather information about land tenure issues. One of these exercises is detailed in Box 6. Under the Town and Country Planning Ordinance (TCPO), villages in Tanzania can receive a land title only after a land use planning (LUP) exercise has been carried out by government officials. The LUP exercise is designed to provide specific development plans for the village, indicating what land is to be used for residence, agriculture, grazing, etc. This is then gazetted and becomes legally binding. The RRAs highlighted the need for alternative approaches to village planning in Tanzania and led, *inter alia* to the following recommendation:

"Whether it proceeds or follows titling and demarcation, land use planning at village-level should be participatory planning by the people for themselves. Participatory land use planning is a rejection of the top down approach: it holds that people will define their problems and priorities, formulate objectives and strategies for solutions, mobilise and contribute resources, and plan implementation of those strategies. Mechanisms must be framed to ensure the participatory nature of the process.

The Town and Country Planning Ordinance (TCPO) is not an effective vehicle for rural land use planning. It does not take into account the priorities of other agencies such as the Ministry of Agriculture and the Environment Council; it requires overly comprehensive and specific designation of uses; and because the classifications must be gazetted and changed by gazetting, it is inflexible and cumbersome" (Johansson & Hoben 1992).

The government appeared to realize the "handicap" of top-down planning in its Agricultural Policy of the 1983:

"Because the planning work was too often done without active village involvement, or without training in the maintenance and use of the records, the Plans have usually remained pieces of paper which do not affect the real activity of the village" (Ministry of Agriculture, 1983).

The new policy reiterated the concept of interdisciplinary planning teams. Multi-disciplinary Planning Teams were formed, comprising of representatives from the Department of Town Planning in the Ministry of Lands, the Land Use Planning Section of the Ministry of Agriculture, the (then) Departments of Livestock and Forestry, and the Ministry of Water.

Subsequently, national coordinating bodies were formed. The National Land Use Planning Commission (NLUPC) was created in 1984, becoming functional in 1986. It was supposed to coordinate and harmonize land use issues. The National Environment Management Council (NEMC) was formed in 1983 with a mandate to coordinate and harmonise environmental issues.

4.2 THE ORGANIZATIONAL STRUCTURE OF LAND USE PLANNING AND DECISION-MAKING

This section discusses the general structure of the planning and decision-making process in Tanzania, followed by a consideration of some major shortfalls. This structure is not applicable, however, for land which is reserved by law for forestry, wildlife, or other special purposes; or for centrally planned national-level development projects and programmes (eg, the Mtera dam project, Basuto wheat scheme) promoted by the Planning Commission or Treasury, etc.

Box 6: An RRA of Dirma Village

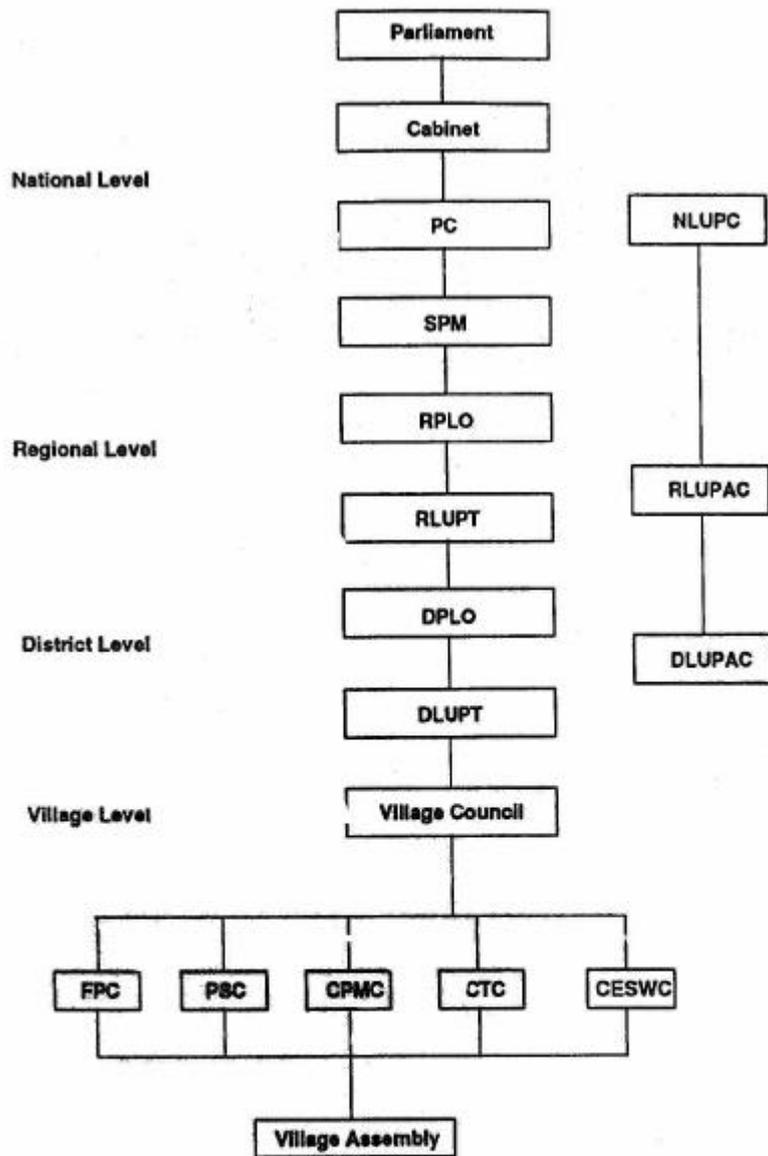
A land use planning (LUP) exercise was carried out in Dirma village, Arusha district. A subsequent rapid rural appraisal (RRA) was conducted to gather information about how the LUP exercise had been carried out and to determine its effectiveness. During the LUP exercise, the surveyors invited village leaders from neighbouring villages to discuss and agree to the boundaries, and mapped them accordingly. Some conflicts were resolved by voting in the Ward Development Committee. The exercise which followed was said to have been participatory because a few village leaders had been consulted to help identify where farming, grazing and settlement should take place. Officials concerned saw the planned land use as the starting point for, rather than the result of, other development initiatives. The planners felt that their plan was acceptable because it was in accordance with suggestions made by the few leaders consulted. But the villagers told the RRA team that whilst they had checked the boundaries thoroughly, they had not scrutinised the plan on village land use, but left it to the experts, believing it was merely a formality for securing title. The RRA revealed that the village leaders represented mainly the permanently settled members of the village, whereas the majority of those registered in the village are semi-settled pastoralists, who do not participate in Party or village matters. They had not been informed about the plans to privatize grazing land. The land use plan had never been discussed in the Village Assembly. Many were afraid that they would lose their right to move in and out of the village in search of water and pastures.

The RRA revealed that the availability of water determined existing land tenure, settlement, migration and land use patterns and that water was the single most important natural resource to the villagers. However, the only mention of water in the LUP report was "each settlement should have water", and that the village government and district water department would be responsible for supplying this. The plan included no commitment from the government that water would be made available to the new settlements, and there were no plans for the very large investments in water development which would be required. A number of other fundamental assumptions (held by both the planners and RRA participants) were invalidated: pastoralist grazing was not haphazard but according to a highly flexible, locally-adapted rotational system; overgrazing was not causing deforestation and tree numbers had increased. A number of recommendations in the plan were found to be unrealistic: zero-grazing and the introduction of grade cattle had been recommended, based on 30 ac pasture per household and a maximum of 18 livestock units, but there were no plans for destocking or sub-titling; planned irrigated agriculture was not practical given the limited supplies of water; tree planting ideas were regarded as "bizarre" given the 20,000 acres of miombo forest within the village area. Maps contained serious errors: settlements were indicated where no people lived and land under cultivation was estimated to be three times its actual size, rendering the maps useless as legal documents. Some of the problems were the result of inadequate surveying (and inadequate resources available to the surveyors). Other problems, however, arose from the "top-down" process adopted in a situation that required "bottom-up" planning so that the local people's knowledge of their resources could be made use of.

The RRA team learned that individuals and communities practised land use planning in a flexible, recursive and purposeful manner. The present system of LUP being carried out by District Land Use Planners under the TCPO was not a suitable instrument for supporting the local people to plan more effectively for their natural resource use and management. Whilst units such as "large agricultural projects" and "forest areas" can be mapped and planned according to TCPO, complex and flexible land use patterns of ordinary smallholders and pastoralists could not be captured. The planners who participated in the RRA accepted that they had mistakenly assumed that customary land use was inadequate and destructive to the environment, and had thus unrealistically prescribed the replacement of all existing agricultural and pastoral practices with "modern" and "scientific" methods without elaborating on what these concepts meant or how these goals would be achieved. As a result, the plan could not be implemented without force, and forcing it on the villagers was likely to damage their economy and environment and destroy their confidence in their own government.

Source: Johansson & Hoben 1992.

Figure 8: The Organizational Structure of the Land Use Planning and Decision-making Levels in Tanzania.



- KEY**
- SPM Sectoral Parent Ministry
 - PC Planning Commission
 - NLUPC National Land Use Planning Commission
 - SPM Sectoral Parent Ministries
 - RPLO Regional Planning Office
 - RLUPAC Regional Land Use Planning Team
 - RLUPAC Regional Land Use Planning Advisory Committee
 - DPLO District Planning Office
 - DLUPAC District Land Use Planning Team
 - DLUPAC District Land Use Planning Advisory Committee
 - FPC Finance and Planning Committee
 - PSC Peace and Security Committee
 - CPMC Crop Production and Marketing Committee
 - CTC Construction and Transport Committee
 - CESWC Culture, Education and Social Welfare Committee

The idealised framework illustrated in Figure 8 shows a hierarchical structure, with planning commencing at the level of the Village Assembly and building to the national level. From the Village Assembly, planning proceeds through the Village Council and its Standing Committees, and then via the District Land Use Planning Team which is advised by the District Land Use Planning Advisory Committee. Responsibility at the next level lies with the Regional Land Use Planning Team which is advised by the Regional Land Use Planning Advisory Committee. At the regional level, the Regional Planning Officer coordinates the planning activities from all sectors for onward transmission to the Planning Commission or consultation with the line ministries. The following discussion follows this sequence.

4.2.1. The Village Level

There are two planning organs at the village level: the Village Council and the Village Assembly. The Village Council was formerly composed of five standing committees (Finance and Planning; Peace and Security; Crop Production and Marketing; Construction and Transport; Culture, Education and Social Welfare), each with five members. Under the 1982 Local Government (District Authorities) Act, some of the committees were amalgamated and there are now only three standing committees (Finance, Planning and Economic Affairs; Social Services and Self-help Activities; and Defence).

The Village Assembly consists of all residents in the village who have attained the age of 18 years and above. According to the 1982 Local Govt. Act, the Village Assembly is "the supreme authority on all matters of general policy making..., is responsible for the election of the Village Council, and also for the performance of any other functions conferred upon it" (Act No. 7, Section 141, p92).

The Village Assembly is responsible for initiating plans. However, the plans at this level are usually in the form of a check list of needs and/or complaints by the local community made during their general assemblies. These could be, for example, the need for water, a health facility, more land for cultivation or irrigation, or an erosion problem, etc. These are then transmitted to the relevant committee of the Village Council.

The Village Council "...is the organ in which is vested all executive power in respect of all the affairs and business of a village". In addition to any function conferred upon it by/under this Act or any other written law, a Village Council, amongst other things, "... shall plan and coordinate the activities of and render assistance and advice to the residents of the village engaged in agricultural, horticultural, forestry [activities]" (Act No. 7, Section 142, (ii)c, pg 92).

At the Village Council level, the complaints or problems raised during the Village Assembly are discussed and the deliberations forwarded to the district level. Alternatively, the community problems are raised when a government or Party Official visits the community. The list of problems is then sent to the relevant government departments at a higher level for consideration.

4.2.2 The District Level

At the district level the main planning bodies include the District Planning Committee, the District Council, the District Development Committee and the District Executive Committee. These bodies are responsible for the overall planning activities in the district. In addition, there is a District Land Use Planning Team (DLUPT) and a District Land Use Planning Advisory Committee (DLUPAC). These were formed in accordance with the NLUPC *modus operandus* contained in its Corporate Plan (NLUPC 1992).

The following discussion focusses on the DLUPT and DLUPAC to illustrate, in a simplified form, the land use planning process at the district level.

The District Land Use Planning Team comprises district-based representatives from the various departments of the relevant ministries. It reports on a day-to-day basis to the District Lands Officer and Planning Officer, but is directly answerable to the District Land Use Planning Advisory Committee. The team leader is supposed to be a physical planner from the Ministry of Lands.

The role of the DLUPT is to liaise with their respective sectors so as to ensure the integration of plans and other sectoral activities. Up until 1991, the DLUPT was also responsible for the preparation and implementation of village land use plans (see Box 7 and Table 1). But, this mandate has been withdrawn by the NLUPC under its Corporate Plan which argued that it was pointless to prepare village land use plans in isolation without considering nearby villages (NLUPC 1992), and also because responsibility for village planning had been assumed by the Town Planning Division (TPD) of the Ministry of Lands, Housing and Urban Development. Hence, in 1991/92, the NLUPC, through the Tabora LUPP, prepared comprehensive land use plans for Kizengi ward and Urambo district.

According to the National Land Use Planning Commission, the aim of establishing Land Use Planning Advisory Committees is:

"to have informal instruments that will advise the government and avoid land problems that arise because of using either out-dated laws of land allocation or using powers to suppress people's conscience on their land rights" (NLUPC, 1992).

Each District Land Use Planning Advisory Committee (DLUPAC) comprises the District Commissioner (Chairman), District Executive Director and the main district officers - the Land Development Officer (Secretary), Agricultural Officer, Natural Resources Officer, Engineer, and Trade Officer, together with the Member of Parliament for the district, the Resident Magistrate and representatives from the NLUPC, NEMC, and the Ministry for Minerals, and a progressive farmer/livestock keeper. This membership provides for directing the work of DLUPT and coordination, at a senior management level, of related development activities within the district. Its terms of reference cover the formulation of the District Council policy on land use matters and directing the district land use programmes. The Committee is responsible for approving the selection of villages to be included in the planning programme and for the final approval of plans prepared by the planning teams.

4.2.3 The Regional Level

At this, the Regional Land Use Planning Team (RLUPT), led by the Regional Planning Officer, is also a multi-disciplinary team and with a similar representative membership as the DLUPT but without the MP. The RLUPT is responsible for the provision of technical advice on land use matters to the Regional Land Use Planning Advisory Committee (RLUPAC). The Team is also responsible for the preparation of short and long-term physical land use plans for the region and its districts, for the provision of technical advice, and also for coordinating and directing the work of the DLUPTs between districts. In addition, The Team is responsible for formulating land use policies and programs that, among other things, provide districts with criteria for selecting villages

**Box 7: Villages with Land Use Plans Prepared by District
Planning Teams: Tanga and Tabora Regions**

TANGA REGION

In Tanga region, out of 229 villages surveyed, 19 village plans were prepared including the comprehensive land use plans, as follows

A. Surveyed and Planned Villages in Handeni District.

- | | |
|----------------|----------------|
| 1. Masatu | 5. Kabuku Nje |
| 2. Segera | 6. Kwangw |
| 3. Mandera | 7. Kimbe (Old) |
| 4. Michungwani | 8. Kimbe (New) |

B. Surveyed and Planned Villages in Korogwe District.

- | | |
|-----------------------|--------------------|
| 1. Makangara Mkwajuni | 6. Toronto Mbugani |
| 2. Makorora | 7. Mkalamo Masimba |
| 3. Matarawanda | 8. Mabogo |
| 4. Kijango | 9. Makole |
| 5. Magamba Kwalukonge | 10. Mwemazandu |

N.B. In Lushoto district, only one village (Mnadani) has a land use plan. The remaining districts (Muheza, Tanga and Pangani) have no village land use plans.

TABORA REGION

i) Surveyed and Planned Villages in Igunga District

Village	Types of land use plans prepared
1. Sungwizi	Comprehensive land use plan.
2. Tambalale	Comprehensive land use plan
3. Nguriti	Comprehensive land use plan
4. Nguvu Moja Framework plan	

ii) Surveyed and Planned Villages in Urambo District

Village	Type of plans prepared
1. Ifuta	Semi detailed
2. Uyogo	Semi detailed
3. Usoke mlimani	Semi detailed
4. Mwongozo	Comprehensive

Box 7: Continued.

iii) Surveyed and Planned Villages in Tabora District

Village	Type of land use plan prepared
1. Mole	Comprehensive land use plan
2. Kawekapina	Semi detailed plan
3. Ipululu	Semi detailed
4. Igalula	Semi detailed land use plan
5. Kizengi ward	Comprehensive land use plan

iv) Surveyed and Planned Villages in Nzega District

Village	Type of land use plan prepared
1. Bulunde	Comprehensive plan
2. Kigandu	Semi detailed plan
3. Mwakashahala	Partial plan
4. Ngukumo	Semi detailed plan

Source: IRA survey 1992 and Wheeler et.al. 1989.

Table 1: Status of Villages in Tanga Region.

Districts	Total No. of villages per district	Total No. of surveyed villages	Total No. of registered villages	Total No. of Villages with land use plans
Muheza	136	35	15	-
Korogwe	130	75	36	10
Handeni	114	45	40	8
Lushoto	112	36	27	1
Pangani	23	23	2	-
Tanga	23	51	-	-
TOTAL	538	229	120	19

Source: IRA survey, 1993.

for planning. The Team is responsible to the Regional Land use Planning Advisory Committee (RLUPAC) and is located within the Regional Planning Office. Examples of the village planning exercises undertaken are listed in Box 7.

The RLUPAC replicates the DLUPAC in composition and is chaired by the Regional Commissioner or, in his/her absence, by the Regional Planning Officer. The Regional Lands Officer acts as secretary. Its purpose is to provide an effective forum for articulating and coordinating land policies and programs throughout the region, to establish a regional policy on land matters in accordance to the national policies, and to liaise with parent ministries at the national level. The RLUPAC approves plans for implementation and/or for onward transmission to the relevant parent ministry.

The Regional Land Use Planning Team (RLUPT) is responsible for the provision of technical advice on land matters to the Regional Land Use Planning Advisory Committee (RLUPAC). The Team is also responsible for the preparation of short- and long-term physical land use plans for the region and its districts, for the provision of technical advice, and also for coordinating and directing the work of the DLUPTs between districts. In addition, the Team is responsible for formulating policies and programs on land use that, among other things, provide districts with criteria for selecting villages for planning. The Team is responsible to the RLUPAC and is located within the Regional Planning Office.

4.2.4. The National Level

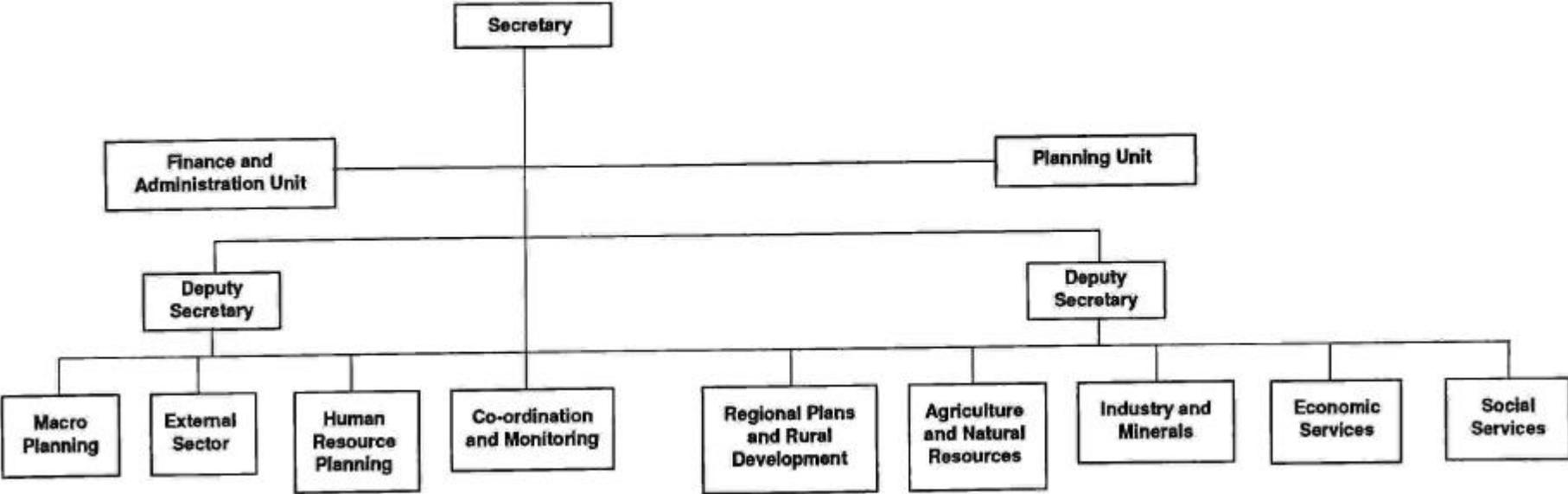
At the apex of the planning hierarchy is the Planning Commission (PC) which has responsibility to compile and scrutinize all ministerial sectoral plans to ensure complementarity with national development plans and policies. A National Land Use Planning Commission (NLUPC) was established in 1984 to coordinate activities and interests between different sectors. In addition to its coordinating role, the NLUPC has a mandate to formulate land use policies and to prepare physical plans at all levels. Such plans are submitted to the PC, the Cabinet, and the National Executive Committee of the ruling Party for approval. The structure of the Planning Commission Secretariat is shown in Figure 9.

4.3 SOME CONSTRAINTS TO LAND USE PLANNING AND THEIR IMPLICATIONS

Some of the constraints discussed in this section are related to the administrative arrangements of the country. There are 22 regions in mainland Tanzania, each with a high degree of autonomy in the administration of development programs. The regions are divided into more than 100 districts, and these are further sub-divided into divisions, wards and villages, and finally into over 8,000 villages. The concept of the village is that it is the smallest administrative planning unit and a service and residential centre.

This study has revealed that there are wide variations and contrasts in institutional facilities and manpower between regions and districts which affect the effectiveness of problem identification, planning and implementation of development projects. These issues are discussed below.

Figure 9: The Structure of the Planning Commission Secretariat



4.3.1 Land Use Planning Guidelines

There are many partial guidelines which address land use planning in Tanzania. Examples include: Ardhi Institute (1988); Corker (1983); Lerise et al (1987); Ministry of Agriculture (1983); Ministry of Livestock Development (1983); NLUPC (1992); PMO (1976); Schuler & Lerise (1986, 1989a, 1989b, 1989c); TANU (1972); Van Raay (1989). Most of these guidelines are not comprehensive and interviews revealed that few planners, policy and decision makers had copies or were aware of their existence. Consequently, they are not being used. To date, no clear guidelines exist which define clear lines of authority for the official land use planning system described in section 4.2 and the responsibilities of the main actors. This is not surprising because interviews conducted in the case study areas revealed that it was not possible to discern who, either nationally or within the regions, is formally responsible for issuing guidelines for planning purposes. As a result of the confusion, land use plans have been prepared on an ad hoc basis on development projects at all levels, with a high degree of duplication. Glaring conflicts occur between sectors, eg, between crop cultivation, livestock, forestry and wildlife in Arusha region.

The respective responsibilities of the NLUPC, the Ministries and existing bodies at all levels have not been explicitly stated. The lack of guidelines causes great confusion and makes it difficult for Planning Teams to function effectively. As a result, not all regions and districts have yet established the proposed land use planning teams and committees with the required membership. For example, out of 20 regions, only four (Tanga, Kilimanjaro, Tabora, and Arusha) have formed operational land use planning teams and advisory committees. Shinyanga, Mwanza, Mara and Kagera regions have formed planning teams and advisory committees, but we were not able to determine their operational status during this study. These uncertainties, especially on the composition, status, authority and terms of reference of these teams, make the anticipated objectives unachievable. Furthermore, the advisory committees (DLUPAC, RLUPAC) have no authority to legally enforce their functions.

In 1989, the NLUPC organized a seminar in Dodoma on the preparation of village land use planning guidelines. Subsequently, village planning guidelines were prepared and circulated to ministries and regions for comments. NLUPC is currently finalising the guidelines for release (NLUPC 1992).

4.3.2 Coordination

Institutions formally responsible for land use planning include the National Land Use Planning Commission (NLUPC), the Land Use Planning Unit of the Ministry of Agriculture, Livestock Development and Cooperatives, and the Division of Town Planning in the Ministry of Lands, Housing and Urban Development (MLHUD). Effective cooperation and coordination between these institutions is sorely lacking. There are other institutions involved in land use planning, listed in Box 8, and each holds different perceptions of land use planning. In order for all of these institutions to operate within a common framework, it is important that they all recognise each other's functions.

There have been instances when one ministry in particular has been allocated all the funds for planning and other sector ministries have then been unwilling to cooperate. Examples of such disagreements over the control of funds have occurred in Mbeya, Rukwa and Shinyanga regions. Another typical problem is where the work of an individual ministry is not recognized technically by other sector ministries, eg, the case of the preparation of Kimani Village Land Use Plan in Mbeya region (see Appendix 2).

Box 8: Institutions Concerned with Land Use Planning in Tanzania

The main agencies concerned with land use planning in the country are described briefly below. Detailed information about some of these organisations is given in Appendix 2. Some of these institutions are within government ministries; others provide independent services, eg, the Institute of Resource Assessment and the Ardhi Institute.

The Land Use Planning Unit of the Ministry of Agriculture, Livestock Development and Cooperatives

This Unit is represented in each regional office of the Ministry of Agriculture, Livestock Development and Cooperatives. It is responsible for land use planning and soil conservation activities carried out in the regions. Some of these activities are donor-funded while others are funded by the government budgets. In some regions (eg Tanga, Rukwa), the Unit works with other institutions, such as the Town Planning Divisions of the Ministry of Lands, Housing and Urban Development, in preparing village and other land use plans. Implementation guidelines of the 1983 Agricultural Policy are followed. Due to severe financial constraints and the lack of manpower and equipment, the Unit has not performed very well (see Table 2).

The Irrigation Division of the Ministry of Agriculture, Livestock Development and Cooperatives

The Division is responsible for survey and land evaluation for irrigation purposes, and construction of all irrigation structures. At the national level, the development of irrigation schemes is ad hoc. Most schemes are donor-funded, except for small schemes such as the Bukene rice scheme in Tabora region, and Bahi rice scheme in Dodoma region. Examples of large irrigation projects include:

<u>Project name</u>	<u>Location</u>	<u>Donor/Source of funds</u>
Mwa mapuli	Igunga, Tabora Region	United National Capital Development Funds.
Kamapunga	Mbeya Rural District, Mbeya Region	Government of Japan
Mbarali	Mbeya Rural District, Mbeya Region	Government of China
Dakawa	Morogoro Rural District, Morogoro Region	Government of North Korea

No commonly methodologies are used in assessing land for irrigation. The methods vary by project and are determined by the donor.

Box 8: Continued.

The Division of Town Planning in the Ministry of Lands, Housing and Urban Development

The Division is responsible for mapping and demarcating the boundaries and residential areas of the villages created under the villagization program. It is also responsible for urban land use planning and for the preparation of regional physical plans, each covering a group of three or four regions and intended as a framework for long-term development. The Division has been given responsibility under the 1983 Agricultural Policy for surveys and registration for the allocation of leaseholds to villages. Thus, it is primarily concerned with geographical structure plans and the layout of towns and villages, with emphasis on the provision of services, including water, electricity and telephones. There is a serious shortage of equipment and trained manpower in this Division. Funds allocated to this Division appear to be insufficient and its performance has been below government expectations

The Forest Division of the Ministry of Tourism, Natural Resources and Environment

This Division is responsible for managing both natural and plantation forest reserves on public land. It undertakes soil conservation measures as a normal part of forest management. Its priority is the layout of infrastructure, conservation in forests and plantations, and the protection of catchments. These responsibilities have led to its involvement in HADO (Hifadhi Ardhi Dodoma) and HASHI (Hifadhi Ardhi Shinyanga) projects carrying out soil conservation on severely eroded grazing land and cropland in Dodoma and Shinyanga regions, respectively.

The Range Management Section of the Department of Livestock Development, Ministry of Agriculture, Livestock Development and Cooperatives

This Section evaluates rangelands, primarily through airphoto interpretation and develops grazing management plans aimed at avoiding overgrazing. Areas are first characterised on the basis of vegetation cover types, followed by reconnaissance surveys. Range management plans incorporate the development of stock watering facilities, pasture improvement and the separation of grazing land from agricultural land. The Division is responsible for ensuring the availability of grazing during all seasons, the provision of water, and veterinary and marketing services. Good examples of range management plans are those for Kongwa in Dodoma region and Mkata in Morogoro region.

The National Soil Service (NSS)

This institution, established in 1975, is based at Mlingano Research Institute, near Tanga, and is part of the Tanzania Agricultural Research Organization. It comprises three departments: Soil Survey and Land Evaluation, Soil Fertility and Management, and the Laboratory. The NSS was established to coordinate soil surveys in the whole of Tanzania, to facilitate land use planning up to farm level, but has no actual legal mandate for these functions. It is also responsible for soil and land resource surveys, land evaluation, soil fertility investigations, and soil and water management. Other activities include soil and plant analysis.

Because of a shortage of funds and a lack of its own programmes, the NSS is unable to undertake and coordinate land resources inventory at district, regional and national levels. This situation has led to other planning institutions, such as Land Use Planning Unit of the Ministry of Agriculture, Livestock Development and Cooperatives and the NLUPC, functioning independently.

Box 8: Continued.

NSS activities are undertaken mainly on a consultancy basis, but most of the revenues accrue to the government. The NSS only receives operational charges from the government. Substantial financial support has been provided by the Netherlands Government for the last 8 years and the assistance is likely to continue to 1994. This financial assistance has enabled the NSS to function well, but its performance has been limited by a shortage of manpower. The institution intends to become self-financing from payments received for its services, including the systematic regional surveys.

The NSS has completed a number of surveys of large farms in Tanga, Kilimanjaro, Arusha, Dodoma regions. Other ad hoc surveys are undertaken for clients, ranging from individual farmers or firms (eg, Rotian Seed farms, Arusha) to government institutions (eg, The Capital Development Authority, Dodoma)

The Institute of Resource Assessment (IRA)

The IRA is part of the University of Dar Es Salaam. It concentrates on basic and applied research in five main areas: natural resources and environment, agricultural systems, water resources, population and human settlements, and remote sensing. Consultancy services in these work areas are provided to the government, parastatal organisations, and international organisations, etc. All of these research themes include resource assessment and land use components. The remote sensing section uses both satellite and aerial photos, and provides methodological support to the different research areas. Other methods used include participatory rural appraisal and conventional socio-economic surveys.

The Project Preparation Division of the Department of Water Development of the Ministry of Water, Energy and Minerals

The Division is concerned with the development of water resources, and their protection from floods, drying out, silting and pollution. Protection measures emphasize the exclusion of farmers and livestock. The Division assesses water resources and prepares regional water plans, monitors stream flow and groundwater at a few places and operates the main national network of climatological stations. The Department grants water rights for both surface and sub-surface water, and builds small dams and wells for domestic and livestock use. Larger developments are undertaken directly by the users and the Department does not have any supervisory role. Secretarial services are provided to the National Central Water Board. Amongst the methods used are remote sensing, ground surveys, and conventional socio-economic surveys.

Funds are received currently from several external donors (eg NORAD, SIDA, DANIDA, and FINNIDA) for the provision of domestic water supply. The Division suffers from a shortage of trained manpower.

Organizations concerned with protection of and development of wildlife

Tanzania's wildlife estate is protected in national parks, conservation areas and game reserves. The management of these areas and responsibility for other related activities is dispersed in several agencies within or answerable to the Ministry of Tourism, Natural Resources and Environment:

- a) The Tanzania National Parks Authority (TANAPA), a parastatal responsible for all national parks;
- b) The Ngorongoro Conservation Area Authority (NCAA), which manages the Ngorongoro Conservation Area;

Box 8: Continued.

- c) The Division of Wildlife in the Ministry of Tourism, Natural Resources and Environment which is responsible for wildlife management in game reserves and game controlled areas.
- d) The Tanzania Wildlife Corporation (TAWICO)
- e) Serengeti Wildlife Research Institute
- f) Mweka Wildlife College
- g) Pasiansi Wildlife Training Institute
- h) The Planning and Wildlife Management (PAWM) Project

National wildlife policy should be made by the Wildlife Division, but it does not have authority except as one voice on the Boards of the parastatals. Coordination and cooperation between these institutions is inadequate and efforts are duplicated.

The Office of the Prime Minister

This Office is responsible for the coordination of planning and development activities among line ministries in the regions and districts. However, beyond the central ministerial level, the coordinating role is actually assumed by the Planning Commission. The Office of the Prime Minister appears to be overwhelmed by the wide range of activities it is responsible for and, consequently, it is unable to discharge adequately its coordination and facilitation role.

Ardhi Institute, Dar Es Salaam

This is an academic institution under the Ministry of Lands, Housing and Urban Development. It undertakes research and provides facilities for the study of and training in the principles and techniques of land surveying of land surveying, physical planning, estate management and valuation, architecture, quantity surveying, environmental engineering and housing. It also provides consultancy services to the government, parastatal organizations, etc.

Conflict also occurs between competing forms of land use as well as between the various natural resource users. For example, in the Ngorongoro Conservation Area there is conflict between agriculture, livestock keeping, forestry and wildlife. A well documented example of conflict between agriculture and livestock keeping is the case of the Barabaig pastoralists and the Tanzania-Canada wheat scheme in Hanang district (see Box 9).

Box 9: The Case of the Barabaig

In 1970, in response to an expected increase in demand for wheat in Tanzania, and with financial and technical support from Canada, the government - through the National Agricultural and Food Corporation - initiated a state wheat production project which covers 100,000 acres of the volcanic Basotu plains, 12% of Hanang district (see Figure 10). The scheme is highly mechanised and based on the mono-cropping of hybrid wheat varieties along the lines of prairie wheat farming in Canada.

The areas of land appropriated by the scheme are also used for dry season communal grazing by the Barabaig, a tribe of semi-nomadic Nilotic pastoralists who number more than 30,000 in Hanang district. The Barabaig herders strive for self-sufficiency from production of their cattle. Each household manages its herd to maximise production of milk, meat and occasionally blood. But they do not exist on a purely pastoral diet and maize makes an important contribution to their nutrition. Grain is obtained through exchange or sale of livestock, and from shifting cultivation by households with the help of communal labour provided by relatives and neighbours.

The Basotu plains are characterised by drought and lack of permanent water supplies. Therefore, the use of these plains by the Barabaig is centrally determined by trade-offs between the productivity and stability of grassland production in different areas and by constraints of water availability and the incidence of tsetse flies. The sustainability of the pastoral system over time is critically dependent on a flexible response to changing patterns of resource availability. This requires an opportunistic mode of natural resource use that allows for the exploitation of 'key resource' patches (eg, wet depressions, river and lake margins, etc) at particular periods.

Consequently, the Barabaig have developed their own natural resource management strategy which includes: traditional seasonal grazing rotation; grazing management; tsetse control measures (e.g., burning bushland); controlling resource access (common property management); and customary regulations to control degradation (eg, banning settlements in certain areas).

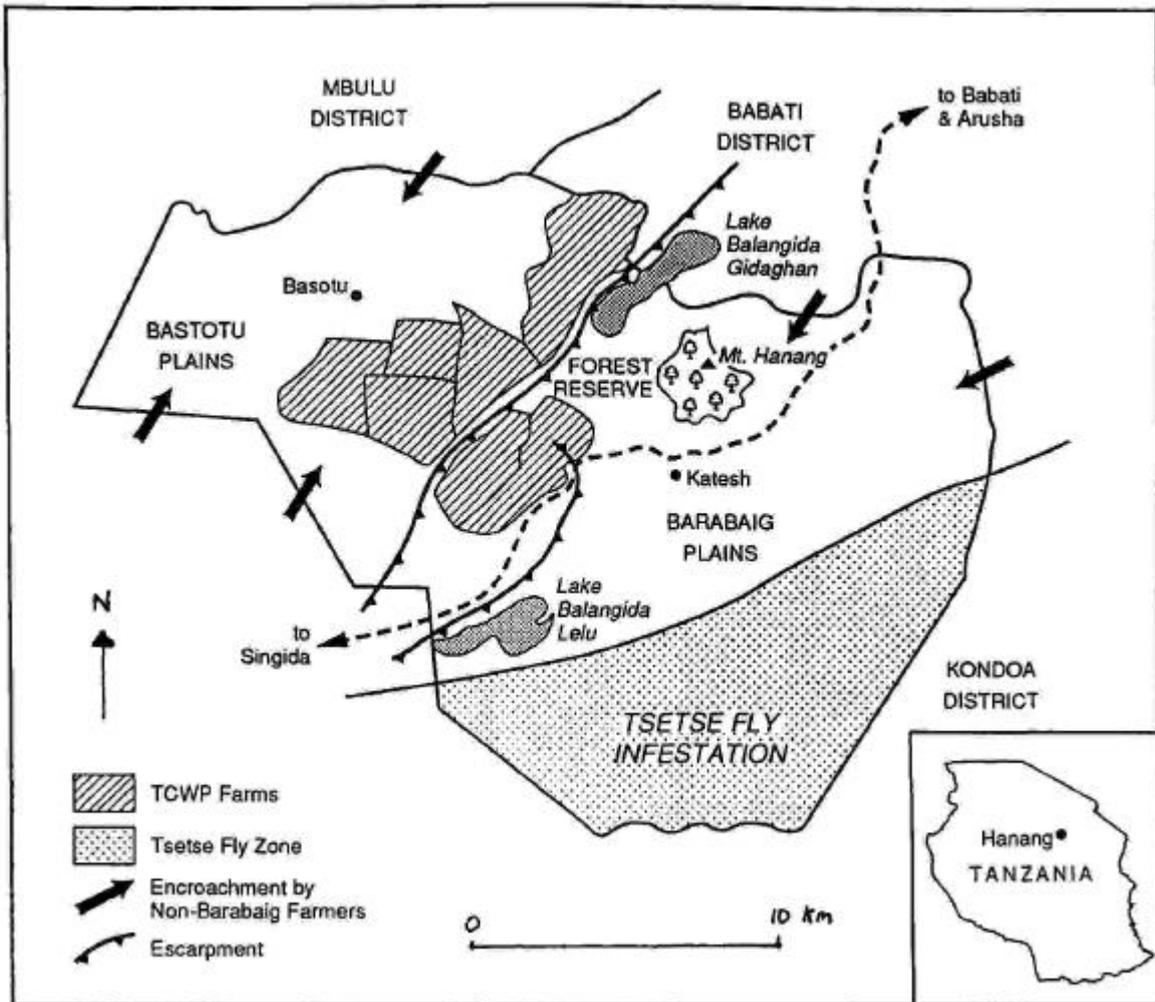
However, there are limits to the ability of 'traditional' Barabaig practices to cope with changing circumstances. The removal of access to muhajega grazing resources (depression areas on the plains which provide important wet season fodder) through the appropriation of land for the wheat project has increased pressure on other resources, resulting in land degradation. Despite the fact that some Barabaig were resident in the area appropriated, and that the muhajega were a vital forage resource, this land was described as "idle" during the project assessment (Young, 1983). But land is not 'idle' if it is not used continuously.

The wheat project assessment was inadequate on two important counts. Firstly, it overestimated the potential economic returns of the scheme. Secondly, the assessment ignored the opportunity costs of reductions in land to the pastoral system.

According to the Barabaig, cattle populations in areas adjacent to the wheat farms have declined by about 30% over the past seven years, whilst productivity of the remaining herds have reportedly declined due to the loss of land. The mechanised wheat farming, with no provision made for soil conservation measures, has also caused considerable soil erosion and siltation of water courses. Traditional burial sites have been ploughed up, causing considerable cultural discontent.

The loss of muhajega has had a serious impact on the seasonal grazing rotation. It has forced the Barabaig to adopt a new grazing pattern and to rely more heavily on the remaining forage areas, particularly in times when they would otherwise be rested from grazing. As a result, they are more intensively used during the critical "regeneration" period. There is increasing pressure to utilise more intensively those areas which have low resource potential, eg, the rift escarpment which has shallow soils on steep slopes, and the tsetse infested bushland. This will inevitably result in further soil erosion and reduced production.

Figure 10: Map of Hanang District Showing Major Land Use Features



Box 9: Continued.

The changes in pastoral land use induced by the establishment of the wheat scheme have resulted in a range of environmental impacts:

RESOURCE TYPE

IMPACT

Upland Range Resources

Plains

Decreased perennials

Hills/mountains

Soil loss

Bushland

Bush clearance

Bottomland Key Resources

Muhajega
(depressions on plains)

Gully erosion in cultivated land

River and lake margins

Heavy grazing and soil erosion, hoof damage

Source: Lane & Scoones (1991)

Another example of competition for access to land causing conflict is provided by forest projects which have closed off areas of forests for forest reserves without providing alternative sources of fuel for villagers.

Conflicts also occur between donor-funded projects in the same area, and particularly where the objectives of donor-funded projects differ from those of government policies or directives. For example, in Singida region, the policy of the Forest Department advocated the establishment of village woodlots, using *Eucalyptus sp.*, over large areas of eroded communal land, whereas the objectives of a NGO-funded project stated that this eroded land should be closed off, with enrichment planting using only nitrogen-fixing species, and allowed to regenerate over a longer period of time (Koziell, pers.comm.).

Lack of coordination between the sectoral authorities concerned, and between these authorities and land users, means that these conflicts are not effectively addressed. But there are also examples which demonstrate cooperation in land use planning activities, eg, where multi-disciplinary teams have been involved in the preparation of village land use plans (see the discussions in Appendix 2 of Kwamazandu Village Land Use Plan in Tanga, and the Tabora Village Land Use Planning Project). Nevertheless, there are disagreements concerning which institution should take the lead and be responsible for managing the funds for the planning activities.

Planning is also undertaken by agencies outside the framework of the formal planning procedures and is not necessarily coordinated with other development plans. Examples include the work of the Planning and Assessment for Wildlife Management (PAWM) project within the Division of Wildlife on harmonising wildlife sector planning, parks planning undertaken by the Tanzania National Parks Authority (TANAPA), and planning undertaken under various donor-funded programmes.

A variety of ad-hoc development plans also fail to follow the planning procedures outlined in this chapter, including those which are initiated and implemented by donors. These range from small to large investments. Typical examples include the Kilombero Valley Teak project funded by the Commonwealth Development Corporation (IIED/IRA 1992) and the Basotu Wheat Project (Lane & Scoones 1991).

Experience shows that where a donor expresses interest in funding a particular development project, this then tends to proceed without questioning by the relevant central authorities, even though there may be more pressing needs in that particular area. Furthermore, such uncoordinated projects sometimes interfere with the implementation of earlier plans.

The situation is made even more difficult by the clear lack of understanding, amongst those involved in land use planning in Tanzania, of the importance of sectoral integration and the concept of local people's participation.

4.3.3 Manpower

There is a shortage of trained manpower at all levels of training (i.e. certificate, diploma, and degree). Tables 2 and 3 demonstrate clearly that manpower levels at the National Land Use Planning Commission and in Tabora region, respectively, are below requirements. Moreover, most of the staff listed are still on secondment from other ministries, and can be recalled. This seriously affects continuity and institutional memory.

Table 4 shows that regional variations occur in the shortage of staff in the Land Use Planning Unit of the Ministry of Agriculture.

One of the major reasons for the inadequate functioning of planning teams and planning committees is a result of their membership structure. Some of the technical staff in the planning teams are responsible directly to the Ministry of Agriculture, Livestock Development and Cooperatives, whilst some are answerable to the Regional Development Director (RDD). Others are employed by the District Councils. Staff loyalties to their parent agencies (their employers) has tended to reinforce the sometimes differing priorities of these agencies and has resulted in a lack of commitment to team work.

There are a number of institutions involved in training in land use planning:

- the Ministry of Agriculture Training Institute (MATI), Nyegezi - offers certificate and diploma courses;

- the Ministry of Land Housing and Urban Development (MLHUD) institutes:

- the Ardhi Institute, Dar es Salaam, - offers an advanced diploma and certificate courses,

- the Ardhi Institute, Tabora, - offers ordinary diploma and certificate courses; and

Table 2: Manpower Position at the National Land Use Planning Commission 1992

Type of Manpower	Number required	Number present	Shortage
Physical Planners	14	5	9
Land Officer	2	1	1
Agronomist	1	-	1
Forester	1	1	-
Resource Assessors	2	1	1
Livestock Officer	1	-	1
Hydrologist	1	1	-
Ecologist	1	-	1
Land Economist	1	-	1
Community Development Off.	2	-	2
Game Officer	1	-	1
Lawyer	1	-	1
Civil Engineer	1	-	1
Sociologist	1	1	-
Cartographer	2	2	-
TOTAL	32	12	20

Source: IRA Survey, 1992

Table 3: The Staffing Position in the Tabora Land Use Planning Project

Discipline	Number required	Number present*	Shortage
Agriculture	5	3 (1)	2
Livestock	5	1	4
Physical Town Planning	5	3 (1)	2
Cartography	4	4 (2)	-
Forestry	5	-	5
Wildlife	5	-	5
Water	5	-	5
Total	34	11 (4)	23

Source: IRA survey 1992.

* The number in brackets indicates the staff who are permanently employed by the NLUPC while those without brackets indicate staff on secondment.

Table 4: Staffing Position of the Land Use Planning Unit in the Ministry of Agriculture in some regions

LOCATION	NUMBER REQUIRED	NUMBER PRESENT	SHORTAGE
Head office	4	4	none
Regional Offices			
Arusha	11	8	3
DSM	5	4	1
Iringa	7	5	2
Kagera	7	1	6
Kigoma	5	5	none
Kilimanjaro	8	7	1
Lindi	6	2	4
Mbeya	8	5	3
Mara	7	6	1
Mtwara	5	3	2
Mwanza	8	4	4
Coast	7	4	3
Rukwa	5	5	none
Singida	5	3	2
Tabora	6	6	none
Tanga	8	6	2
TOTAL	112	78	34 (30%)

Source: IRA survey. 1992.

the Department of Agricultural Engineering and Land Use Planning in Sokoine University of Agriculture.

However, these centres are still insufficient and have inadequate training facilities.

Another problem is that career prospects in the area of land use planning are poor. As a result, individuals appear reluctant to follow training in this subject. Those who have taken courses in land use planning often opt for better and more promising occupations with better prospects. As a consequence, the Land Use Planning Unit of the Ministry of Agriculture has suffered from insufficient and inappropriately trained personnel. The problems of such shortages in constraining planning work are well illustrated by two of the case studies presented in Appendix 2 - Kwemazandu Village Land Use Plan and Tabora Land Use Planning Project.

4.3.4 Logistics

The main agencies responsible for land use planning lack adequate transport facilities. Severe shortfalls in recurrent budgets have been one of the factors that have virtually halted progress in many projects (eg, Kwemazandu Land Use Plan - Appendix 2), especially those which were established with donor funding which has subsequently ceased (eg, Tabora Land Use Planning Project - Appendix 2). The situation is made worse by poor road conditions which result in high vehicle maintenance costs and high fuel consumption costs.

The remoteness of many villages also incurs high transport costs and time needed for travel. Officers must frequently stay overnight in such areas, requiring night allowances for which funds are rarely available. Officers are usually reluctant to travel by bus to some of the villages - even though perfectly possible - and consider that they should be driven to them, and sometimes even around the village!

Insufficient and old surveying equipment, particularly in the Department of Land Surveying, is another major limitation which has slowed the rate of survey work (Shishira and Mohamed 1992).

4.3.5 Land Grabbing

The term "land grabbing" is used to refer to the acquisition of land (often large parcels) by individuals or firms through the manipulation of the allocation system (see Box 10), and also to the appropriation of land without official sanction. Such "grabbed" land is sometimes held under a title deed of not less than 33 years. This practice is becoming very common these days especially in the areas which are considered as public lands and is thus causing problems particularly in village land use planning exercises. The problem is described in a recent report:

"It is more difficult to document this unofficial process, but it is reported that effective control of land is being acquired by large farms from small holders through informal tenancy and debt relationships. One strategy by which this is done is for the large farm manager to offer to plough land for the small holder, thereby placing him in debt. After a few years, the small holder, if unable to repay the debt, simply loses the land.

The incidence of land allocation varies from place to place. Allocation is primarily a problem in semi-arid and pastoral areas where land use is not intensive. Generally it involves some degree of complicity of the Village Chairman or Council when either approves the allocation without

Box 10: Land Allocation at Different Levels

Level of Decision Making	Name of Organs Responsible.	Function
a) Village level	Planning and Finance Committee under village government.	To allocate land within the village to villagers/households and to organizations from within and outside the village. About 0.5 ha. is allocated as residential area per household. The land allocated for farming depends on the size of the household
b) District level	District Land Allocation Committee chaired by District Commissioner.	To allocate plots for residential and commercial purposes and for different social services. To allocate lands for farms and small scale industries - land not exceeding 100 acres. <u>In case of DSM</u> To allocate high density plots and also to allocate farms not exceeding 3 acres.
c) Regional level	With exception of DSM, each region has a Land Allocation Committee chaired by the Regional Development Director	To allocate sites for industries except heavy industries. To allocate residential and commercial areas within town councils/municipalities To allocate land for parastatal organizations and various religions groups. To allocate farms above 100 acres and not more than 500 acres.
d) Ministerial level	Land Allocation Committee, chaired by Principal Secretary from the ministry of Lands.	Delineation and gazetting of forest and wildlife reserves. Allocation of land for heavy industries all over the country and large scale farms exceeding 500 acres. Allocation of areas or plots within the boundary of DSM City for different purposes, eg, for residential services, Government and parastatal organizations within the city.

Procedures for allocation of plots/farms.

- ◆ Plots or areas intended for allocation are announced on Official Notice Boards and Magazines' before being allocated to any body.
- ◆ Applications are made by completing application forms found in all Districts and Regional Lands Offices.
- ◆ Applications are considered by the relevant committees before plots/ farms are allocated.
- ◆ Successful applicants are announced on the notice board and/or official magazine.

notifying the other villagers, or calls a meeting to tell them, in the presence of higher officials, that the land has been allocated because they do not need it. Allocation and grabbing do not appear to occur in high potential, densely settled areas. Thus, to some extent, the loss of land through allocation becomes involved in ethnic politics, as the Masai and other non-Bantu, pastoral groups perceive themselves to be major losers" (Hoben et.al. 1992)".

There are also other forms of land acquisition which have similar end results to land grabbing. These have been referred to as land alienation (Kikuk *et.al.* ,1992). Examples include the establishment of large scale farms by government and non-government institutions, eg, the Canadian-supported Basuto Wheat Complex in Arusha (see Box 9), the Kilombero Valley Teak Project funded by the Commonwealth Development Corporation (IIED/IRA, 1992). the Rotian Seed Farms at Arusha, and the state farms operated by the National Agricultural Food Corporation, etc. The practice of land alienation in the rural areas may inhibit the expansion of village land, since land is usually held under leases of at least 33 years. There have already been public complaints about this practice as illustrated in Box 11.

4.3.6 Lack of Implementation and Follow-up Mechanism

Land use plans are seldom prepared properly, and plans, once made, are often not implemented. Village land use plans have often been looked at as an end in themselves. In cases where they have been implemented, there has been no follow-up or monitoring/evaluation mechanism to enable problems to be rectified. The Tabora Land Use Planning Project provides a good example. The project started in 1976, but, to-date, implementation work has been almost stagnant with little or no follow-up. Most of the village plans remain 'paper plans' in the project offices. Another example is the GTZ-supported Tanga Rural Integrated Development Programme, established in 1975 which intended to cover all villages in Tanga Region.

One reason for the inability of village communities themselves to adhere to land use plans is the complexity of natural resource use within the village area, especially in semi-arid areas where natural resource use is extensive rather than intensive. Many land use plans have tended to concentrate activities within a smaller area which cannot sustain a rapidly growing population. Without a knowledge of sustainable, low-input agricultural techniques to improve the soil, it is impossible for villagers to sustain themselves within the given land use plan area. For example, villagers may have to walk up to 30 km/day to find adequate pasture for dry season grazing or to collect firewood. A woman will go far into the forest to collect a particular type of wood which she prefers to use for cooking. Since land use plans seldom fulfil these kinds of survival needs, villagers do not often adhere to them.

Also, it is the 'elders' who usually possess the most detailed knowledge of the location of village boundaries. As they die, there are more and increasingly vehement conflicts concerning boundary delineation between villages. Unfortunately, the lack of funds for village demarcation has meant that less emphasis has been placed on preserving this boundary knowledge. It is not always passed down to younger members of village communities.

Frequent transfers result in high rates of government staff turnover and seriously affects institutional memories. It is a major cause of the lack of implementation and follow-up to land use plans by some organisations.

"Managers, planners and administrators shift jobs so often that they hardly have time to know the branches they are dealing with, such therefore that, they are almost constantly making planning decisions of operations of places they do not know" (Mongula, undated).

Box 11: Highlights on Undeveloped Land

HOUSE PASSES BILL MPs WANT LAW AGAINST LAND NOT DEVELOPED From Balinagwe Mwanmbungu, Dodoma

The Government has been urged to review the land tenure law further to make it illegal for an individual or group of people to monopolise land they failed to develop.

This would ensure that other people, especially villages, are not denied the right to take over such land. Members of Parliament said yesterday.

Debating the Land Tenure Regulation Bill tabled in the National Assembly here last Friday, MPs said the Government should also avoid giving long land lease to foreigners as this would deny the people their right to land.

The MPs for Mtama, Ndugu Masudi Chitende, Musafa Nyanga'anyi (Kondoa) and Col. John Mhina (Muheza) said the government should not only protect villages established under the villagisation programme against eviction from the land they presently occupy, but also repeal any law which sought to grant large land areas to a few greedy individuals at the expense of large peasant families.

The MPs also called on the Government to come out with a clear land policy after reviewing and analysing *Shivji Report* that will resolve the present problems.

Ndugu Chitende criticised the practice of granting long land lease to people who merely used it to obtain bank loans instead of developing the land.

He cited several villages in Lindi Region which were rendered landless after the so-called occupants returned to claim the lands after abandoning the *shambas* for years.

"People should not be given land lease titles just to enable them to get bank loans, but without utilising them", he said.

The MP for Temeke, Ndugu Masudi Ali Masudi, said the Bill has confined itself to villages while similar problems existed in towns. He urged the Government to issue titles to all people holding land and working it.

Ndugu Richard Koilah called for consultations at all levels before the Government decides to allocate huge chunks of land to individuals, especially foreigners.

Col. Mhina (Muheza), warned of the influx of foreigners in the country and the Government's decision to give the large land areas. He said land was the national heritage of Tanzanians. Steps should be taken to safeguard it, he added.

He asked the Government to look into the case of 44 villages in Muheza which did not have enough land to farm as they have grown out as a result of the colonial labour reserve policy.

Mbulu MP, Ndugu Philip Marmo, said compensation could not be paid to people who did not put any tangible property on the land since land is the property of the state.

Ndugu Mustafa Nyang'anyi (Kondoa) said any law which denied the majority the right to utilise land and grants that right to an individual, was a defective one, which could cause disturbances and bloodshed in the country.

Prof. Aaron Massawe (Hai) called on the Government to look into the root cause of land disputes. He said the problem had manifested itself in the last three to five years only. The Government must look into the opinions of individual claims.

He asked the Minister for Lands, Housing and Urban Development to provide a schedule which would clearly state areas and villages which are under the villagisation programme, and whose lands the law seeks to safeguard.

Source: Daily News dated 15/12/1992

Another reason for the lack of institutional memory is the lack of an established documentation centre, where all relevant information and data are kept. A further contributing factor to the lack of implementation and follow-up mechanisms is the limited amount of funds allocated to planning agencies. This is illustrated by Table 5 which shows the 1992/93 annual budget for Land Use Planning Unit of the Ministry of Agriculture, Livestock and Cooperatives for the headquarters and for some regions. Although only a modest budget was requested, only 4.8% was granted.

Table 5: Budget of the Land Use Planning Unit in the Ministry of Agriculture for the year 1992/93

	Amount requested (Tsh)	Amount allocated (TSh)
Headquarters	3,000,000	
<u>Regions</u>		
1. Iringa	3,899,000	Of the Total amount requested only <u>1,200,000</u> or <u>4.8%</u> was allocated for both the headquarter and the regions
2. Kilimanjaro	2,150,000	
3. Ruvuma	1,312,800	
4. Morogoro	4,392,000	
5. Dodoma	2,247,000	
6. Mbeya	2,843,500	
7. Arusha	2,527,000	
8. Shinyanga	2,040,000	
TOTAL	25,011,800	

Source: IRA survey, 1993.

(400 T Shs approx. = 1 US \$ in 1992/3)

During the period 1988-1993, planning staff in Singida region rarely had any funds to work with. Planning officers and other staff remained in their offices day-after-day and year-after-year (Koziell, pers.comm) with no chance of implementing any projects.

Unfortunately, even the limited funds that are made available to regions must (understandably) be allocated to projects which raise the economic status of the region. Thus, more emphasis is placed on activities such as cash crop farming than on land use planning.

4.3.7 Land Tenure and Land Ownership

Under the 1975 Village and Ujamaa Village Act, the village was considered as the smallest planning unit, and there was an assumption that all village land was available for proposed activities and development projects. But, in practice, at that time, all village land was still held under traditional or customary land rights. The Act did not extinguish the system under which these rights were held.

It is argued that insecurity over land ownership, particularly among women, has major implications for land management. Customary land tenure is predominantly patrilineal (Govt. of Tanzania 1991; Hoeppe 1991;) and, as a result, land is passed on from father to son, and not to daughters. There is no legal restriction against women inheriting land, but, in practice, a widow will lose her plot when her

son becomes 18 years of age. Consequently, women seldom inherit land. This may deter women from undertaking long-term land development investments, such as the planting of permanent crops and the construction of soil conservation structures. If a woman has no sons, then she is required, by custom, to surrender her land to her husband's family. However, in some areas, e.g. in the Irangi Highlands in Kondo district, the situation has changed considerably and sons and daughters now inherit land equally (Mohamed, 1991). The change in tenure systems has been attributed to changing social characteristics and an awareness of the value of land resources.

A new land policy, aimed at addressing, *inter alia*, land tenure and ownership, is being prepared by a National Steering Committee which was appointed by the Minister of Lands, Housing and Urban Development. It was hoped that the new policy would clarify the uncertainties that exist. In parallel to the activities of this committee, a Presidential Commission on land issues was constituted in 1991 and submitted its first draft report in early 1993.

However, shortly before this first draft was submitted, new legislation was hurriedly introduced. The Regulation of Land Tenure (Established Villages) Act No.22 of 1992 effectively extinguished all customary rights to land in villages incorporated between 1970 and 1977, and terminated any legislation under which customary rights were being claimed. But the Act does allow for village governments to include former customary rights in the village title, provided they are formally recognised before the titles are validated. But, as the village planning process is undertaken by government planning officers, and effectively takes no account of customary rights, it is most unlikely that such recognition will occur.

The new Act leaves completely ambiguous the situation regarding those villages incorporated outside of the 1970-77 period, and it will have catastrophic effects on pastoralists (see Box 12).

The present system of land ownership (i.e. public ownership of communal lands) has seriously affected 'care of the land' by villagers. The most eroded soils are in the communal lands. A possible reason for the failure of communal village farms is because no-one is prepared to invest in them whilst they can perceive no return for their efforts.

4.4 IMPLICATIONS OF THE INADEQUACY OF FORMAL LAND USE PLANNING

The prevalence of the constraints outlined in Sections 4.3.1 to 4.3.7 make the preparation and implementation of land use plans ineffective, and land evaluation is mainly lacking. As a result, a number of problems arise:

- ◆ **Land use conflicts** - between agriculturalists, livestock keepers, afforestation, wildlife and reserves, etc, each demanding a share over the same piece of land;
- ◆ **Over-exploitation of land resources** - in the absence of suitable land use plans, the current overstocking or over-exploitation will accelerate land degradation, eg, particularly in Dodoma, Shinyanga and Arusha Regions.
- ◆ **Investments are often wrongly located**, frequently because of a lack of advice sought or provided about diversification or alternatives. For example, crops are grown which are

Box 12: Land Rights Abolished

All land in Tanzania is "owned" by the state. Since before independence possession of land could be held under a granted right of occupancy (leasehold) or deemed right of occupancy based in customary rights. These rights were interpreted by native law and custom and "assured, protected and preserved" under the 1923 Land Ordinance. Despite these provisions a series of administrative changes have operated to erode security of customary title for the majority of the country's land users.

The first major contravention of customary land rights occurred as millions of Tanzanians were moved into villages during the villagisation campaign in the 1970s when customary titles were often ignored to accommodate new village populations. This was later compounded in the 1980s by decentralisation when greater control over land, ironically, was given to central authorities and corruption became more prevalent. More recently, the policy for village titling and land use planning has further offended customary land tenure arrangements. In addition, the recent liberalisation of the economy has encouraged outsiders to acquire land for large scale commercial enterprises at the expense of local land users.

In response to widespread infringements of customary rights a growing number of people sought redress in the courts and began to assert their customary rights against the government. However, the prospect of local interests prevailing over those of the nation's planners prompted the Prime Minister to issue Government Notices extinguishing customary rights in those areas where customary claims were being made. When these Notices themselves became the subject of litigation, extraordinary measures were deemed necessary to bring order to what was thought to be chaos.

In response to this conflict of interests the President appointed a Commission of Enquiry into Land Matters. However, before the submission of its report was made, an extraordinary piece of legislation was formulated. The 1992 Regulation of Land Tenure (Established Villages) Act sets out to extinguish all customary rights to land and terminates any litigation in which customary rights are being claimed.

Whilst this might save the government from the potential embarrassment from lost court cases, it may not bring good order to rural land use nor resolve the conflict of interests between local small scale land users and large scale commercial producers.

The legislation is particularly problematic for pastoralists who rely on access to common rangelands through customary tenure arrangements. By denying them the means of managing the commons through customary rules with the authority of traditional institutions, an opportunity has been lost for the integration of common property resource management systems and the new administrative structures based on discrete village titles.

The elimination of communal access to range resources will ultimately destroy the pastoral economy. Pastoralists will also find themselves driven from their land by those who want it for other purposes. In the process pastoralists' extensive environmental knowledge will be lost forever, and it is likely that many scarce natural resources will be degraded by inappropriate land use practices with long term implications for future productivity in the agriculture sector.

Source: Article in "Haramata" magazine, No.19, March 1993, IIED London.

unsuitable for the soil types and moisture conditions of an area. The most celebrated example is the Tanganyika Groundnut Scheme (see Box 1). But there are also numerous examples of afforestation programmes which have used inappropriate species, leading to very poor performance. For example *Pinus* sp. were planted in areas with heavy clays in the semi arid parts of Monduli District. The programme failed totally.

- ◆ **Uncoordinated project investments** may result in **poor access to or availability of other resources**, e.g. fuelwood, water, grazing land in relation to proposed projects, with consequential environmental implications.
- ◆ **Lack of proper understanding of land tenure systems** . The land tenure systems in many African societies are such that the poor remain poor and continue to face land shortage. By comparison, richer individuals and communities tend to occupy or own larger parcels of land (so that some land can be kept in reserve for future generations and enabling 'used' land to be rested to regain its fertility).
- ◆ **Poor accessibility to land.** Although, on the whole, there is enough arable land in the country, land shortages may occur for a number of reasons:
 - (i) Most soils are poor in nutrients. Short rotations of cultivation on the same fields are common. Crop productivity decreases and there is not enough land in the neighbourhood of many local communities. This compels the farmers to find new farms at great distances (8-10 km); a practice which presents a number of problems (guarding, transport of crops, etc.). Many farmers have begun to return to their old plots, which they were cultivating before villagization and these are far from their homes. Farm fragmentation is, therefore, common.
 - (ii) For certain purposes, such as forestry and the protection of water catchment and game reserves, land is controlled by the local or central government.
 - (iii) In some areas, large state farms and prison farms may constrict villagers, whose demand for land continually increases due to falling soil productivity and increasing population.
 - (iv) There is a current tendency for some commercial companies to try to obtain titles to currently unused village land from Village Councils, or to land lying outside but adjacent to village boundaries from the government. These land parcels are usually provided with leases of at least 33 years. As a consequence, when villages need more land as they grow, it may be very difficult for them to recover this alienated land. Examples of this form of land acquisition can be found in areas which are considered as "empty". In the Kilombero Valley, the Commonwealth Development Corporation has negotiated rights to village land for teak production (IIED/IRA, 1992). In Rukwa: the state prison has taken village land which was considered as 'open land' for their use. thus depriving the villagers of land for agricultural expansion; the acquisition of village land by Nkundi state farm has constricted Ntendo and Fyengereza villages; whilst Luwa National Service Camp has also gained part of the land belonging to Ntendo village (IRA survey 1992).

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APPENDIX ONE

PROFILES OF SELECTED SURVEY AND PLANNING INSTITUTIONS

Schedule of interviews.

- 1 National Soil Service, Mlingano, Tanga
- 2 National Land Use Planning Commission, Dar es Salaam
- 3 Uyole Agricultural Centre, Mbeya
- 4 Ardhi Institute, Dar es Salaam
- 5 Planning Commission, Dar es Salaam
- 6 Tanzania Forestry Research Institute, Morogoro
- 7 Institute of Resource Assessment, Dar es Salaam
- 8 Beekeeping Training Institute, Tabora
- 9 Tabora Land Use Planning Project
- 10 Institute of Rural Development Planning, Dodoma
- 11 Ardhi Institute, Tabora

SCHEDULE OF INTERVIEWS CONDUCTED

<u>Place/Date</u>	<u>Informant</u>	<u>Status</u>
Tanga Region		
13/4/92	Mr. Mwasakafyuka	Regional Development Director
13/4/92	Mr. Said	Regional Lands Development Officer
14/4/92	Mr. L.L.J. Massawe	Regional Forest Officer
14/4/92	Mr. W.F. Mahimbo	Lands Officer
14/4/92	Mr. A.K. Bilal	Land Use Planner (Agric.)
14/4/92	Mr. A.J. Senkoro	Land Use Planner (Agric.)
14/4/92	Mr. B. Wapalila	Regional Planning Officer
14/4/92	Mr. H.A. Dumea	Land Use Planner (Agric.)
14/4/92	Mr. B.H.Lusewa	Regional Agric. Officer
Mlingano NSS		
14/4/92	Mr. S.E. Mugogo Mr. J.P. Magogo	Acting Director Soil Surveyor and Computer Systems Designer
National Land Use Planning Commission - Dar es Salaam		
23/4/92	Mr. G.K. Mango	Acting Director Physical Planning and Research
Ardhi Institute - Dar es Salaam.		
24/4/92	Mr. G.M.S. Mbyopyo	Senior Lecturer (Urban & Planning Dept.)
24.4.92	Mr. J. Saburi	Principal
24/4/92	Mr. F. Lerise	Senior Lecturer, Urban and Rural Planning Dept.
Ministry of Agric. Livestock Dev. & Cooperatives		
27/4/92	Mr. W. Ngirwa	Commissioner (Planning)
Ministry of Lands, Housing and Urban Development.		
27/4/92	L.C. Mollel	Director - Surveying and Mapping
27/4/92	Mr. N. Msimbira	Principal Secretary
Planning Commission - Dar es Salaam		
1/6/92	Mr. A.S. Nyumayo	Assistant Director, Natural Resources
27/6/92	Mrs G.K. Kamuzora	Assistant Director, Natural Resources Tourism

TAFORI - Morogoro Region

5/5/92	Mr. I. Kitambi	Assistant Director General
3/4/92	Mr. H.A. Dumea	Officer-in-Charge, Kilimo Land Use Planning Unit, Tanga.

Mbeya Region

2/6/92	Mr. Mashunda	Regional Planning Officer
2/6/92	Dr. J.M.K	Regional Livestock Officer
2/6/92	Mr. Maniamba	Regional Agric. & Livestock Dev. Officer
2/6/92	Mr. Ngowi	Regional Natural Resource Officer
2/6/92	Mr. Luko	Regional Planning Office Desk Officer - Natural Resources

Tabora Region

4/4/92	Mr. Mligo	Regional Forest Officer Regional Planning Officer
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Beekeeping Training Institute - Tabora Region

14/4/92	Mr. Mafuru	Principal Beekeeping Institute, Tabora
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Ardhi Institute - Tabora Region

8/4/92	Mr. A.P. Shirima	Land Surveyor-
9/4/92	Mr. Kisingi	Principal

Tabora Land Use Planning Project

6/4/92	Mr. Tabaro	Project Coordinator
7/4/92	Mr. D.M. Kalenzi	Assistant Project Coordinator
15/4/92	Mr. P. Gambaloya	DLUPT leader
16/4/92	H.Lyoba/B. Massanja	Kilimo Land Use Planner

Institute of Rural Development Planning - Dodoma Region

21/4/92	Mr. C.M. Kazi	Director
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1. NATIONAL SOIL SERVICE

Address: Private Bag Ngomeni, Tanga, Tanzania.
Telephone : No. 8 Ngomeni
Telex: 45030 KARIMI TZ
Date of Visit: 11.4.1992 - 15.4.1992.
Reporters: A.S. Kauzeni and I.S. Kikula.

Summary of Aims and Activities

The National Soil Service (NSS) is located at Mlingano near Tanga. It was established in 1975, originally within the Agricultural Research Institute. The NSS is a government institution but has received some financial support from The Netherlands for the last eight years. This assistance is likely to continue up to 1994. The NSS comprises the following Departments:

- a) Soil Survey and Land Evaluation
- b) Soil Fertility and Management
- c) The Laboratory

The aims and activities of the institute are:

- a) To conduct soil and land resources surveys
- b) To carry out land evaluation studies
- c) To study soil fertility, and soil and water management
- d) To carry out soil plant and water analyses

These disciplines form the essential tools for multi-purpose land use planning for sound agricultural and livestock development in the country.

It is also responsible for coordinating soil surveys in the whole of Tanzania, with the purpose of facilitating land use planning up to farm level. However, it has no legal mandate for this role apart from the Act which established the institute.

The NSS does not have its own programmes. Most of its work is ad hoc and undertaken on a consultancy basis. It is demand-driven and ranges from projects sponsored by individual farmers, companies and the nation. Most of the revenue is absorbed by the government. The NSS only receives operational charges. The lack of programmes creates tension between the NSS and the other planning institutions such as the Land Use Planning Unit of the Ministry of Agriculture, the National Land Use Planning Commission, etc.

Examples of work completed by the NSS are included in the bibliography.

Relevant Library Holdings

The NSS has a wide collection of books, periodicals and research papers on soil surveys, land evaluation studies, soils and water management, crops, livestock, agronomy and climate.

Staffing Position

Professional Staff:		25
Technical staff:	4	
Administrative/Support staff:		22

2. NATIONAL LAND USE PLANNING COMMISSION

Address: P.O. Box 2420, Dar es Salaam.

Date of Visit: 23.4.1992

Reporters: I.S. Kikula and A.S. Kauzeni

Summary of Aims and Activities of the Institution

The National Land Use Planning Commission (NLUPC) was established by Act of Parliament No. 3 of 1984, as the principal advisory organ of the government responsible for all matters related to land use. The establishment of the Commission was considered necessary after it was realised that the existing legal, policy and institutional arrangements had not been effective in coordinating various activities related to land use, and the programs undertaken by different sectoral organizations.

The functions of the Land Use Planning Commission are:

- (a) To formulate policy on land use planning and recommend its implementation by the government.
- (b) To coordinate the activities of all bodies concerned with land use planning matters and to serve as a channel of communication between those bodies and the Government.
- (c) To evaluate existing and proposed policies and activities of the government directed to the safeguarding of land against its wrongful, wasteful or premature use or development, and, on the basis of that, recommend to the government policies and programs which will achieve more effective protection and enhancement of the land quality and encourage better land use planning.
- (d) To recommend measures to ensure that government policies, including those for the development and conservation of land, take adequately account of its effects on land use.
- (e) To stimulate public and private participation in programs and activities related to land use planning for the national beneficial use of the land.

- (f) To foster cooperation between central and local government authorities and other bodies or persons engaged in land use planning programs.
- (g) To seek the advancement of scientific knowledge of changes in land use, and to encourage the development of technology to prevent or minimize adverse effects that endanger man's health or welfare.
- (h) To specify standards, norms and criteria for the protection of beneficial uses and the maintenance of the quality of land.
- (i) To establish and operate a system of documentation and dissemination of information relating to land use planning.
- (j) To examine existing laws and, where appropriate, formulate proposals for legislation concerning land use planning issues, and recommend their implementation by the government.
- (k) To establish and maintain liaison with other countries and international organizations with respect to issues and matters relating to land use planning.
- (l) To establish and maintain liaison with the Land Advisory Committees in the Districts and Regions with respect to issues and matters related to land use planning, so as to ensure that national and local interests in land use are taken into consideration; and to issue orders, directions, notices or other documents to the regional/district lacs - all such notices, directions and orders will be binding (TFAP 1989).
- (m) To prepare Regional Physical Plans and ensure their implementation by the regions.
- (n) To undertake and promote general educational programs in land use planning for the purpose of creating and enlightening public opinion regarding the land and the role of the public in its protection, use and improvement.
- (o) To perform such other functions as the Minister may assign to the Commission, or as are incidental or conducive to the exercise, by the Commission, of all or any of the preceding functions.

Relevant Library Holdings

The Commission is establishing an Information and Documentation Centre to support a land use information system. Existing land use reports, maps, satellite images, aerial photographs and other relevant documents (eg, policies on agriculture, livestock, forestry, fisheries and other sectors) will be compiled, analyzed and disseminated to all interested organisations and persons for land use and land use planning purposes. Examples of existing plans held include:

- The Northern Zone physical plan
- The Uhuru Corridor physical plan
- Loliondo land use plan
- Lituhi Land use plan
- Kiteto land use plan
- The Southern Zone Regional Physical Plan
- Masasi District Land use Plan
- The Kondoa District development Plan

Reports on Tabora Land Use Planning Project and The Dodoma Land Use Management Project.

Staffing Position

Professional staff: 10
Technical Staff: 6
Administrative/Supporting staff:27

3. UYOLE AGRICULTURAL CENTRE

Address: P.O. Box 400, Mbeya, Tanzania.
Telephone : 3081/5 **Fax:** 3087
Telex: 51039 Uyole TZ
Date of Visit: 2.6.1992
Reporters : I.S. Kikula, S.A. Mohamed and A.S.Kauzeni.

Summary of Aims and Activities

- (a) To promote economic, social and political development by providing opportunities and facilities for training and research in the application of science and technology to agricultural and rural development.
- (b) To engage in research in matters related to the efficient organization and management of the agricultural industry and, in particular - (but without prejudice to the generality) - the application of science and technology to the production of livestock and agriculture including its derived products, and to evaluate the findings of any research carried out by the Centre.
- (c) To conduct training and provide academic and practical courses of study in the production of agricultural products, livestock, and the management of business associated with the agricultural industry.
- (d) To give advice and assist the Government, other public authorities and such other bodies or organizations as the Board may approve on matters relating to the agricultural industry.
- (e) To arrange for the publication and dissemination of material produced in connection with the work and activities of the Centre, including books, manuals, records of research and audio-visual aid materials.

Relevant Library Holdings

The Centre's library contains books, journals, bulletins, research papers and reports, etc. on agriculture, livestock, rural economy, land use, soils and many other fields related to agricultural and livestock industry.

Staffing Position

Professional staff: 76
Technical staff: 121
Administrative/Supporting staff: 403

4. ARDHI INSTITUTE

Address: P.O. Box 35176, Dar es Salaam.

Telephone 71263

Date of Visit: 24.4.1992

Reporters: I.S. Kikula and A.S. Kauzeni

Summary of Aims and Activities

The Ardhi Institute is administered under the Ministry of Lands, Housing and Urban development. Its main aims and activities are:

- (a) To provide facilities for the study of and training in the principles, procedures and techniques of land surveying, physical planning, estate management and valuation, architecture, quantity surveying and environmental engineering and also conducting studies on housing.
- (b) To provide training programs in the subjects specified in (a) above.
- (c) To engage in research into theoretical, operational and organizational problems and training needed in the subjects specified in (a) above.
- (d) To provide consultancy services to the government, parastatal organizations, etc.
- (e) To conduct professional examinations and to grant professional advanced diplomas and certificate of different types and other awards of the Institute.

Relevant Library Holdings

The Institute holds books, periodicals, research papers, reports, dissertations, study reports, and journals, etc., covering urban planning, transportation, rural planning, regional planning and land use planning.

Staffing Position

Professional staff:	90
Technical staff:	15
Administrative/Supporting:	200

5. PLANNING COMMISSION

Address: P.O. Box 9242, Dar es Salaam.

Telephone : 29411

Date of Visit: 27.4.1992

Reporters: I.S. Kikula and A.S. Kauzeni

Summary of Aims and Activities of Institution

The Planning Commission has responsibility for economic management and coordination of planning activities at the national level. It is also responsible for the coordination and planning of natural resources utilization which includes land, forestry, fisheries, beekeeping, game, water, etc.

Relevant Library Holdings

The Commission's library contains books, reports, journals, research papers, and bulletins on relevant planning issues. It also contains integrated regional development plans, sectoral plans, urban master plans and regional physical plans. In addition, it has materials on plans for special conservation areas and sector investment programmes.

Staffing Position

Professional staff:	322
Technical staff:	71
Administrative/Supporting staff:	259

6. TANZANIA FORESTRY RESEARCH INSTITUTE

Address: P.O. Box 1854, Morogoro, Tanzania.

Telephone : 056 286 **Fax:** 056 3725

Telex: 55141 TACOTA TZ

Date of Visit: 5.5.1992

Reporters: I.S. Kikula and A.S. Kauzeni

Summary of Aims and Activities

The Tanzania Forestry Research Institute (TAFORI) was established by the Act of Parliament in January 1980, and became operational on 1st August 1980.

TAFORI is a corporate organisation and carries out the following functions:

- (a) Sets up experiments relating to the planting, growth, development, conservation and use of local and exotic tree species.
- (b) Investigates causes and suggests ways of controlling and preventing the occurrence of forest diseases and pests.
- (c) Coordinates research and provides advice to the government, public institutions and other persons on the practical application of modern techniques suitable for development and conservation of landscape, soil, fauna and flora.
- (d) Provides advice on the establishment and development of wood industries.
- (e) Cooperates with the government and any person or group of persons in providing facilities for the training of researchers.
- (f) Establishes a system of documentation and dissemination of research results, by placing inquiries and or collecting prepared and or published statistics relating to forestry.
- (g) Encourages the development of forestry through the protection of forestry industry, provision of consultancy services, and increasing the supply, sale, utilization and conversion of timber.
- (h) Carries out any other activity deemed by the Board of Directors as being of interest to the Institute.

Relevant Library Holdings

The Institute has a wide collection of research papers, research reports, bulletins, journals and books on soils, various species of trees, conservation of forestry resources, afforestation, desertification, water use by various tree species, soil conservation, wood properties, pests and diseases of trees, processing and treatment of forest products, etc. The Institute has also some conference, seminar and workshop papers pertaining to the above mentioned issues.

Staffing Position

Professional staff:	22
Technical staff:	40
Administrative/Supporting staff:	160

7. INSTITUTE OF RESOURCE ASSESSMENT

Address: University of Dar es Salaam, P.O. Box 35097,
Dar es Salaam, Tanzania.

Telephone: +255-51-43393/43500/43508, ext 2410 **Fax** +255-51-43393

Telex: 41561 UNIZIP TZ

Reporters: I.S. Kikula, S.A. Mohamed and A.S. Kauzeni

Summary of Aims and Activities

The Institute of Resource Assessment (IRA), formerly the Bureau of Resource Assessment and Land Use Planning (BRALUP), was established in July, 1982, when the government agreed on a proposal to elevate BRALUP to the status of an independent institute in the University of Dar es Salaam. BRALUP was established in 1967 as a research wing of the University College of Dar es Salaam in the Faculty of Arts and Social Sciences.

IRA was established as the result of realization that nations, particularly the poor ones such as Tanzania must use their resources judiciously in order to achieve full scale development without detrimental side effects.

The Institute's main areas of research include: water resources, population resources and human settlement, agricultural systems, and natural resources and environment.

The Institute has the following broad objectives:

- (a) To carry out research and projects pertinent to the social, cultural, environmental and economic development of Tanzania, and to develop research capacity in these fields.
- (b) To organize and assist research activities carried out by the staff of the institute and staff from other departments in the University of Dar es Salaam in related fields.
- (c) To coordinate and assist research carried out by staff seconded from government, research fellows from other research institutions, and other visiting research workers.
- (d) To cooperate with government, public authorities and other organizations on special questions.
- (e) To furnish advice upon the request of government public organizations or other organizations.

- (f) To arrange conferences, seminars or postgraduate courses on resources and land use planning problems.
- (g) To carry out long-term assessment and monitoring in the main research areas.
- (h) To collect information necessary for the research activities of the Institute.
- (i) To contribute to the training of Tanzania research staff within the areas of its competence, and to provide specialized teaching materials for the University of Dar es Salaam and other related institutions.

Relevant Library Holdings

IRA maintains a documentation centre containing research papers, research reports, service papers, journals, books and bulletins on land use planning, environment, natural resources, water, soils, agriculture, population and human settlement. It also has few volumes on integrated regional development plans.

Staffing Position

Professional staff:	18
Technical staff:	2
Administrative/Supporting staff:	15

8. BEE-KEEPING TRAINING INSTITUTE

ADDRESS: P.O. Box 62, Tabora, Tanzania.

Telephone : 062 2124

Date of Visit: 14.4.1992

Reporter: J.G. Lyimo

Summary of Aims and Activities

- (a) To conduct theoretical and practical training in beekeeping for both local and foreign students.
- (b) To provide extension services to individual beekeepers, government institutions and non-governmental institutions/organization involved in beekeeping.
- (c) To host and provide facilities for conferences and workshops/seminars related to beekeeping.
- (d) To conduct research which aims at improving the quality of hive products and bee pollination.

Relevant Library Holdings

The library of the Institute contains books, research papers and reports, journals, and bulletins on beekeeping, forestry entomology and general agriculture.

Staff Position:

Professional staff:	12
Technical Staff:	2
Administrative/Supporting staff:	15

9. TABORA LAND USE PLANNING PROJECT

Address: P.O. Box 591. Tabora, Tanzania.

Telephone: 2015

Date of Visit: 7.4.1992

Reporter: J.G. Lyimo

Summary of Aims and Activities

This project is now administered under the National Land Use Planning Commission (NLUPC).

- (a) To refine land use planning methodologies introduced earlier by NLUPC in the context of changing land use and settlement patterns and population increase.
- (b) To prepare land use plans at District and Regional levels in order to tackle major land use issues and to form a basis for the effective planning at village level.
- (c) To undertake village land use planning, to enhance increased agricultural production based on environmentally sound and sustainable approach.
- (d) To assist in the implementation of village land use plans.
- (e) To undertake village boundary surveys, natural resource surveys, socio-economic surveys, data analysis, problem identification and planning proposal preparation.

Relevant Library Holdings

The project has produced documents on the following subjects or issues:

Land use planning handbook,
The soils of Tabora region,

Human carrying capacity model,
Land capability,
A land unit atlas,
Land evaluation and land planning in Tabora region,
The Land Use Planning Project - Tabora region,
Village Land Use Plan reports for various villages in Tabora region,
Tabora Integrated Development Program.

Staffing Position:

Professional staff:	9
Technical staff:	2
Administrative/Supporting staff:	8

10. INSTITUTE OF RURAL DEVELOPMENT

Address: P.O. Box 138, Dodoma, Tanzania.

Telephone: 061 - 22147

Telex: 53142 TZ

Date of Visit: 21.4.1992

Reporter: J.G. Lyimo

Summary of Aims and Activities

This is a parastatal organization which depends on government funding, with some assistance from donors. Its aims are:

- (a) To conduct training programs in all disciplines related to rural development planning, including the preparation, application and evaluation of development programs.
- (b) To collect data/information related to rural development planning and publication of research work done either by the Institute alone or jointly with other institutes/ individuals.
- (c) To provide advice, consultancy and other services to the government, organizations, villages and individuals on matters relating to rural development planning.
- (d) To prepare students for examinations as may be conducted by the institute and grant awards in accordance with its establishment Act.

Relevant Library Holdings

The library of the Institute contains books, journals, research papers, bulletins, conference/seminar papers on land use planning and integrated development plans.

Staffing Position

Professional staff:	21
Administrative/Supporting staff:	27

11. ARDHI INSTITUTE, TABORA

Address: P.O. Box 744, Tabora, Tanzania

Telephone: 062 - 2090

Reporter: J.G. Lyimo

Summary of Aims and Activities

The Institute was established in 1978 with the objective of providing refresher and upgrading courses in mapping techniques, land management and administration, land surveying and land record keeping.

The Institute provides consultancy services in the following areas:

- (a) Mapping - includes data collection, map designing, map construction and reproduction (both thematic and topographic maps).
- (b) Land Surveying Services - topographic, engineering, cadastral (urban plots and farms).
- (c) Image interpretation for mapping, data acquisition (aerial photographs and satellite images).
- (d) Property valuation and land appraisal.
- (e) Land information database organization and management of schemes.
- (f) Land ownership issues.

Currently, the institute offers two-year full-time courses in cartography and land management at Certificate level, and an ordinary diploma course in cartography and graphic communication.

Relevant Library Holdings

The library holds the following documents;

Elementary Air Survey of Uhuru Corridor,
Regional Physical Master Plan,
Statistical Mapping and their Presentation,
Geography of Settlements,
Land Tenure and Policy in Tanzania,
Cartographic Methods,
A Guide to Registration of Title,
Cartographic Design and Production,
Elements of Cartography,
Remote Sensing Principles and Interpretation,
Applied Remote Sensing,
Space Remote Sensing Systems,
Land Use Planning and Remote Sensing,
Elements of Photogrammetry,
Manual of Photogrammetry,
Interpretation of Geological Maps,
Remote Sensing and Image Interpretation,
Aerial Photographic Interpretation,
Economics of Real Property,
An Introduction to Urban Land Administration,
Principles of Remote Sensing,
The Law of Real Property,
Land Information Management,
Land Resource Economics,
Estate Management Practices,
Valuation on Development,
Appraisal Maps and Air Photographs.

Staffing Position:

Professional staff:	8
Technical staff:	18
Administrative/Supporting staff:	27

The Institute is under the Ministry of Lands and Urban Development and it depends entirely on government funding.

APPENDIX TWO

CASE STUDIES OF SELECTED LAND USE PLANNING PROJECTS

Case Study 1: Kimani Village Land Use Plan, Mbeya.

Case Study 2: Kwemazandu Village Land Use Plan, Tanga.

Case Study 3: Tabora Land Use Planning Project, Tabora.

CASE STUDY ONE - KIMANI VILLAGE LAND USE PLAN, MBEYA.

Project Title :	Kimani Land Use Plan, Mbeya region
Location:	Mapogoro Ward, in the Usangu Plain and covering five villages: Uturo, Ukwavilla, Mabadaga, Mbuyuni, and Itamba
Project Dates:	Launched in July 1987
Informants:	Acting Regional Lands Officer
Place/Date of Interview:	Mbeya, 31 May 1992
Interviewers :	A.S.Kauzeni, I.S.Kikula and S.A.Mohamed

It could not be established who initiated the project. But it is clear that the project was influenced by the several factors:

- ◆ The availability of finance from the Canadian International Development Agency (CIDA) and the Canadian Universities Society (CUSO). These agencies agreed to launch an irrigation project in July 1987 in the area under the Local Initiative Project.
- ◆ Directives given in the National Agricultural Policy of 1983.
- ◆ The Party (the ruling Chama Cha Mapinduzi) programme of 1987-2002, and the Party directives on economic and social development of 1987-1992.

Project documents point out that the plan was 'demand-driven'. It was initiated at a time when awareness of the necessity for comprehensive planning for coordinated development was first realised in Tanzania. The main justification for the project seems to have been that the region needed to do something to satisfy the demand for action concerning land use planning contained in the 1983 National Agricultural Policy.

The Regional Town Planning Office started preparing the plan in the 1987/88 financial year and the process continued until 1991. The work was carried out mainly by physical planners, due to a lack of co-operation from planners from other disciplines.

The main objective of the plan was to improve agricultural productivity by advising small-scale farmers on better land use and assisting them with small irrigation schemes. The plan was based on the assumption that the area contained 'untapped' land of high agricultural potential.

The following goals were also outlined in the project document:

- ◆ to provide a comprehensive assessment of the problems involved in and the potentials for economic and social development;
- ◆ to provide a basis for the control of natural waters in the project area;
- ◆ to control the immigration of pastoralists into the area;

- ◆ to provide a comprehensive land use plan for a variety of uses;
- ◆ to boost the economic base in the villages;
- ◆ to ensure adequate provision and best use of public facilities, utilities and services;
- ◆ to provide cheap and efficient means of transport, and a communication network; and
- ◆ to improve the living conditions.

The project, like all others, was subjected to a laborious approval process through a series of committees: the Planning Committees of each Village Council, the District Planning Committee, the full District Council, the District Development Committee, the Planning Unit of the Regional Planning Office, the Regional Management Team, the Regional Development Committee, the Regional Development Committee, the Regional Executive Committee, and finally to the Planning Commission at national level.

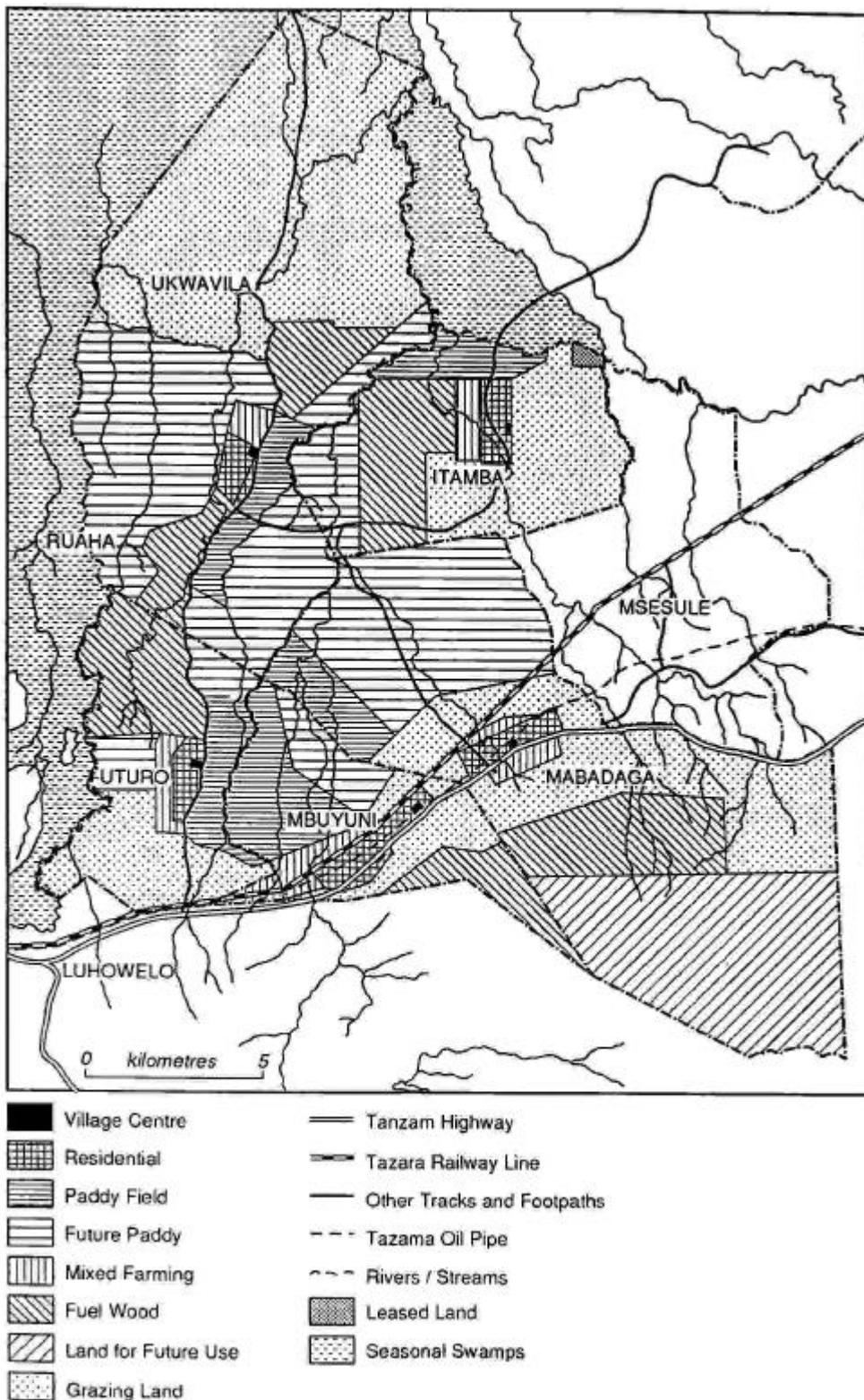
One of the biggest limitations in preparing the plan was the lack of data on each of the villages. This necessitated a socio-economic survey before completion of the plan.

Prior to the project, there had been no development projects in the area. All economic activities in the area was based on subsistence agriculture.

Conclusion

The project documents and interviews have revealed scant information about this project. The project report includes only the results of the socio-economic survey and is, therefore, not a land use plan. A separate land use plan map for Kimani (scale 1:50,000) has no apparent connection with the report (see Figure 11). It shows future land use of the area in terms of village centres, residential areas, paddy fields, mixed farming, fuelwood areas and grazing areas. The reasons for such allocations are not explained anywhere. In practice, this case study is a good example of what a land use plan is perceived to be in Tanzania.

Figure 11: Kimani Land Use Plan



Source: Adapted from Kimani Land Use Plan, Drawing No. 54/MB/691/C, Town Planning Office. Mbeya, 27/7/1991

CASE STUDY TWO: KWEMAZANDU VILLAGE LAND USE PLAN, TANGA

Project Title : Land Use Planning for Kwemazandu Village

Location: Kwemazandu Village (1663 ha) is in Korogwe District, Magoma Division in Magoma Ward, 23 Km from Korogwe District Headquarters on the road from Korogwe Town to Tanga Regional Headquarters

Project Dates: The planning process of the project was initiated in 1988 and was completed in 1990

Informants:

1. Regional Planning Officer.
2. Land Use Planning Officers from the Ministry of Agriculture, Livestock Development and Cooperatives from the region and district
3. Land Use Planning Officers from the Ministry of Lands, Housing and Urban Development, from the region and district
4. Regional Natural Resources Officer
5. Regional Agricultural and Livestock Development Officer
6. Six villagers

Place/Date of Interview: 13-15 April 1992

Interviewers : I.S. Kikula and A.S. Kauzeni

Background

This development project is the result of a directive in the Agricultural Policy of Tanzania of 1983. It required the Ministry of Lands, Housing and Urban Development, in collaboration with the Ministries of Agriculture and Natural Resources, to carry out a national survey of land use patterns and allocation, and to compile elaborate national, regional, and district land use maps. These were intended as an aid to planners and policy implementers to make rational decisions about land allocation between alternative users.

Initiation of the Project

Preparations for the project were initiated in 1988 by the Department of Urban Development Planning of the Ministry of Lands Housing and Urban Development, in collaboration with the Land Use Planning Unit of the Ministry of Agriculture and Livestock Development based in Tanga Region.

The Regional Planning Office initiated a request for the project. Kwemazandu Village was selected for assistance because it was considered to be a village with potential and could compete favourably with other villages in undertaking various economic activities, particularly agriculture.

The initial goals were:

- ◆ firstly, to set up a village boundary;
- ◆ secondly, to allocate pieces of village land to various uses (e.g. for agriculture, grazing, residential purposes, forest etc.);
- ◆ thirdly, to give land titles to villages, households and individuals; and,
- ◆ fourthly, to increase agricultural production.

The Department of Urban Development Planning responded favourably to the project proposal. There was also full support from politicians, administrators and technical officers from the regional and district offices and from villagers.

The budget was drawn up giving implementation costs. Options for development were grouped according to maximum agricultural production.

Perceived Needs for Land Use Planning

Land use planning was perceived as necessary to achieve increased agricultural production and a permanent solution to boundary disputes between Kwemazandu Villages and neighbouring villages, and between households within the village. Kwemazandu village is not a traditional village since it was formed during the villagization program. The residents came originally from different villages and there were no development activities in the project area before the project started.

Project Document and Available Data

To assist in the design of the project, a document was prepared (see next section) containing a range of background information, including:

climate, topography, soil types and their distribution, vegetation cover, location of the project, demographic data, livestock population, different land uses and their extent, records of crop and livestock production, socio-economic activities and income, infrastructure, administrative structure, the legal framework, social services, communication, carrying capacity and viability check of the area, problems and village requirements.

The document was prepared by established technical staff from a number of line departments (all responsible to the Regional Administration): Lands, Agriculture, Natural Resources, Water, Livestock, Community Development, Education, Planning and Health. No donor agencies, NGO's or senior administrators were involved.

Advice was sought from villagers and local or community leaders on land use and ownership, climate, types of crops grown, location of the village boundary, and major problems of the village. There were no agreed terms of reference for the land use component of the project. The use and users of data were not specified. No training of local staff and/or decision-makers was made in any aspect of the natural resources part of the project.

Data was acquired from district, ward and village files and from some field observations in the project area. One of the deficiencies in the information that was made available was the lack of accuracy in

most figures given (e.g. production, income, acreage, etc.) and the lack of information on customary land tenure. Missing information was slowly gathered while the planning process continued. Full-blown physical surveys were not commissioned, and air photography and satellite imagery were not obtained.

Several copies of the single project document were produced. The document contained current land use, proposed land use and maps. However, the plan did not establish a mechanism for monitoring progress and for making revisions as needed.

The report was made accessible to decision-makers.

Decision-Making About Land Use

Several bodies were responsible for making decisions about this project: the Regional Land Allocation Committee, the District Land Allocation Committee, and the Village Council.

Local politicians and central government officials, acting through the technical staff of line departments, made the final decisions on land use due to their great influence. During the final stage of implementation, it appeared that the land use planning exercise did, to some extent, conflict with customary land tenure or traditional ownership of land.

The composition of the team undertaking land use planning was according to general guidelines issued by the Prime Minister's Office. It included members from the Ministries of Lands and Urban Development, Agriculture, Livestock and Cooperatives, the then Ministry of Natural Resources, and the Department of Planning in the region. The PMO's office also issued guidelines on the characteristics of the area to be selected for locating a village. These included vegetation and physical attributes (eg, soil). Emphasis was placed on agricultural production.

Terms of Reference and Relevant Policies

General terms of reference were issued by the Regional Administration through the technical staff preparing the project. These covered the selection and location of the sites for planning.

In preparing land use plans for Kwemazandu Village, the Agricultural Policy of Tanzania, the Livestock Policy and the Villagization Policy were taken into account.

Consultations, Diagnosis and Conflicts

The technical planning team 'consulted' the villagers and also the central and local government administrations. Seminars were organised to inform and educate District Councillors and other local leaders and some village government members about land use planning.

The main land use problems were identified through these seminars and through other meetings of village, district and regional leaders. Problems were also identified through observations of visible land use problems during field investigations. But not enough diagnosis was made of the needs and potentials of the area. Furthermore, it appears that no questions were asked about conflict issues. This is thought to be because the question of the traditional ownership of land would likely have been raised, and this was known to conflict with the land use planning exercise. Until the visit to Tanga by the IRA research team, no environmental issues relating to the project had been raised.

Conflicting demands on land resources were not identified, but emerged only later when the actual planning of allocation of pieces of land for various uses was undertaken. At this stage, solutions to the defined problems could not be found.

Logistics and Manpower

It appears that the project work plan did allow enough time to gather and assimilate essential information. The technical staff of line departments were responsible for the logistics of the land use component. It took two years to complete the planning exercise. Staff from the Lands and the Agricultural Departments were involved in planning. Transport and some supporting facilities were not adequate. There was only one old and unreliable vehicle serving the whole district for land use planning. This was out of action most of the time. Cartographic, copying and writing facilities were available. There was a shortage of qualified personnel. Only a few of the regional staff involved had had some training in land use planning and some had several years of practical experience. These shortcomings became apparent after the planning exercise had started.

Costs

Although the land use planning component had been costed in the project budget, there were inadequate funds for the exercise. This factor, together with the shortage of manpower, caused a delay in completing the work.

Land Suitability Evaluation

Despite the original goals, there was no ranking of development options. Apart from agriculture, no other form of land use was actually considered. There was no systematic land suitability evaluation. Using rough guidelines, uses of land were assigned to pieces of land, with all emphasis placed on suitability of land for agricultural production. The guidelines in the FAO Framework for Land Evaluation (FAO 1976) were not followed. No descriptions or assessment of the physical needs for each land use type were prepared. Only the physical needs of land for agricultural purposes were taken into account.

Some land resources data were collected by the technical team and some opinions were sought from villagers, centred mainly on agricultural production. Land qualities were not matched with different land use types. Only a few maps were made for physical evaluation purposes, and these were presented to and discussed by the village government.

Implementation

The project planning exercise was completed only in 1990. As a result, only the following elements of the project have been implemented:

- (a) One second hand lorry has been given to the project team for use. This lorry serves Kwemazandu Village plus nine other villages which have been planned.
- (b) One seminar was conducted by the Ministry of Land, Housing and Urban Development, in collaboration with the Department of Community Development, on the implementation of the project. Participants were government and political leaders of Korogwe District and the villagers from Kwemazandu village.

- (c) The village land has already been demarcated and boundaries marked, and each household now knows how village land has been distributed and assigned to various uses e.g.

Agriculture	684.8 ha
Residential area	90 ha
Forestry	110 ha
Pasture	119 ha
Social services	10 ha
Marginal Land	649.2 ha
Total	1663.0 ha

- (d) Tree nurseries have been established for raising tree seedlings for village woodlot/forest use.

The role of the land use planners or technical teams was to supervise the implementation of the above mentioned project activities, liaising and relying heavily on the village government. Both the technical team and the village government monitors project implementation. Supervision and monitoring of the project is supposed to be done throughout the 20 years of the project

CASE STUDY THREE: TABORA LAND USE PLANNING PROJECT

Project Title :	Tabora Land Use Planning Project
Location:	Tabora Region
Project Dates:	1977-1992
Informants:	Tabora Land use Planning Project staff
Place/Date of Interview:	13-14 April 1992
Interviewer:	J.G.Lyimo

Introduction

The Tabora Land Use Planning Project (LUPP) emerged from the Land Use Component (LUC) of the Tabora Rural Integrated Development Project (TRIDEP), established in 1975 with the assistance of the World Bank. The aim of TRIDEP was to promote rural development in the region. The existing regional services and structure were to be utilised and strengthened; pilot development projects in agriculture, livestock and fuelwood production established; and improvements made in roads and village water supplies.

It was considered that the new development programme required a good knowledge of agricultural potential and current land use. A reliable land use planning framework was also seen as vital to achieving a high level of village development (Mitchell 1984). Hence, the LUC was established and incorporated into TRIDEP, under the Prime Minister's Office.

The LUC started in 1977 and the work was carried out by the Land Resource Development Centre (LRDC) of the Overseas Development Administration (ODA). The first phase of the LUC (1977-1980) was designed to complete the regional land resource assessment and to train staff in land use planning techniques. When the LUC was established, villagization had been an official policy for four years; villages had been registered and their boundaries defined, low density settlements were regrouped into centralized settlements and some villages were completely resited but with little, if any, agricultural planning (Mitchell 1984).

After the TRIDEP terminated in 1980, the LUC was extended for a second phase, with the aim of devising land planning methodologies to tackle earlier findings. In October 1984, the LUC extension became the Tabora Land Use Planning Project (LUPP) under the Ministry of Lands and continued to be financed by ODA until the end of 1986. Then it was taken over by the NLUPC.

At that time, about 90% of all staff working on the project were from Ministry of Agriculture but, in 1987, multidisciplinary teams were formed at Regional and District level. However, all the teams remained stationed in the Regional Office.

Project Initiation

The project was initiated by the Tabora regional authorities, including both the administrative and technical unit in the region; in collaboration with World Bank. After a reconnaissance survey of resources in the region, it was noted that the two districts, Nzega and Igunga, were over-populated in both human and livestock terms. Also, as a result of villagization, there was a concentration of population at village centres, whilst land remained unutilized in peripheral areas.

As a consequence, the technical unit, in corporation with the aid agency (UK ODA), decided to plan villages which were not over-populated. The idea was that people and animals would move from the over-populated area to less populated, specially planned villages.

Perceptions of the Project

Perceptions of the project varied greatly. One aspect of the project was to persuade people to move from over-crowded village centres to planned villages in less populated areas. This was interpreted by some politicians as a move against the Ujamaa policy and many villagers no longer trusted the government. Based on their experiences during "Operation Vijiji" (the villagization program), villagers were now sceptical about returning to their old settlements where there was ample land for farming and grazing. Some politicians and technicians understood the future benefit of land use planning, but land use planning remained unpopular amongst land users because of its association with previous planning activities.

Levels of Decision-Making Involved

National level - Government, Prime Minister's Office

Regional level - Regional Development Committee

District level - District Council

Village level - Village Council

Perceived Needs for Land Use Planning

There was over-crowding in the villages, especially in Nzega and Igunga district. Here, people were concentrated in the village centres, and there was poor land utilization with over-stocking, resulting in land degradation and a serious decline in land productivity. Land use planning was considered by planners as the only way to ensure the sustainable use of land resources, and to increase land productivity. The Land Use Planning Unit was seen by the regional authority as having an important role in ensuring destocking, and arranging the relocation of people and their livestock to planned villages in less densely populated areas.

Development Activities Before the Project Commenced

Before the LUPP, the only activity in the region which involved any form of land use planning was in tobacco-growing areas. Here, tobacco settlement schemes were organised by the then British American Tobacco Company (B.A.T). The company employed an Agricultural Extension Officer (Bwana Shamba) who allocated land to tenants to grow tobacco. Land was allocated along a crest line running from the upland to the drainage line ("Mbuga"). The land was used for growing tobacco and food crops, and for the provision of fuelwood. Under this type of land use planning, tobacco was given priority consideration. It did not take into account other land uses such as grazing, etc.

Initial Justification and Goals of the Project

These were:

- ◆ to develop a planning system that would rectify the problems of over-crowding, both of people and livestock, and poor land utilisation, especially in Tabora and Urambo districts; and
- ◆ to train local staff to use the proposed planning system (and, where appropriate, modify it). This included the teaching of basic skills in surveying and soil conservation.

Preparation of the Initial Project Document

The initial project document was prepared by the World Bank, and then discussed with the government. After it was signed, the project terms of reference, and the benefits of the project to land users, were explained to the Regional Authority by a Technical Cooperation Officer (TCO)) from UK ODA.

Data Availability

One of the terms of reference of the project was to carry out a regional resource inventory covering forest land, human population, livestock, vegetation, wildlife, water resources, and arable land. It included soil survey and land evaluation, and the determination of land carrying capacity.

The aim was that this information would be used in land use planning and decision-making. However, it was not specified how the information would be used and who would be expected to use particular information. Furthermore, it was not clearly defined what role land users (villagers) would have in using the information.

Project technical staff were given on-the-job training, especially in surveying skills, However, there was no training provided for decision-makers or villagers on any aspect of the natural resources part of the project.

Community Involvement in Rural Development

The government is involved in community development through the technical extension staff from various departments. Agriculture, Livestock and Forest Extension workers work in the villages, representing the government.

Local communities were involved in project implementation. Each Village Council discussed and endorsed implementation of rural development programmes in the village through its various committees.

For example, in village land use planning, after the project was approved by the district authority, the land use planners held discussions with the villagers through the Village Councils. The planners explained the purpose and objective of land use planning to the villagers. After initial preparation, the draft plan was presented to the village through the district for further discussions and amendments, if required, before it was approved and implemented.

However, it became difficult for the villagers to understand the broader context of land use planning. Also the village leaders may not necessarily have reflected the opinions of the majority of villagers (it is a well known that the village leaders often favour government decisions and interests).

The Planning Process of the LUC

(A) Step 1: Establishment of Goals and Ground Rules

Initially the land use planning goals were set by LUC. They focussed on the formulation of land use planning methodologies and staff training. After the LUC ended, the LUPP set its own goals and objectives as follows:

- ◆ to undertake village planning on a scale sufficiently large to test the concepts and methodology developed in the earlier phase (LUC) of the project;
- ◆ to complete the training of Tanzania Land Use Planning Team leaders posted to Tabora at both regional and district levels;
- ◆ to establish Tabora Region as a base for training land use planners from other regions in Tanzania.

The terms of reference of the LUPP were:

- ◆ to prepare, in collaboration with the Department of Lands under by the then Ministry of Lands, Natural Resources and Tourism, and other appropriate departments, 12 village land use plans. These included plans for new villages to relieve over-crowding in established villages;
- ◆ to assist in the implementation of village plans, including the physical layout of settlements and individual farms, in response to requests from the appropriate authorities;
- ◆ to review village planning procedures with particular reference to simplifying the methodology and speeding up the planning process;
- ◆ to monitor and evaluate implementation of the plan;
- ◆ to complete the training of the District Land Use Planning Team (DLUPT) leaders posted to the project and to start training staff for posting to other regions;
- ◆ to assist the proposed Regional Land Use Planning Advisory Committee (RLUPAC) and District Land Use Planning Advisory Committee (DLUPAC) to carry out their respective responsibilities;
- ◆ to advise on research concerned with possibilities for increasing rice production through improved water control;
- ◆ to prepare a preliminary report on the project by May, 1986 containing an evaluation of land use planning in Tabora Region and proposals for the future course of work in this field;

- ◆ to submit a final report on the project to the Ministry of Lands by December, 1986.

The above terms of reference were reflected in the memorandum of the project extension. Criteria were given to the planners that enabled them to judge what was needed to enable actions to be taken by the decision-makers at each stage of the project.

However, some of the terms of reference were not accomplished, due to problems such as lack of finance, lack of adequate staff, time constraints and little cooperation from villagers.

At the outset of the LUPP, the high level policies were taken into account. These included "The Agricultural Policy of Tanzania (1983)" and "The Livestock policy of Tanzania (1983)". The policies put emphasis on the importance of and the needs of land use planning to ensure sustainable resource use and increased agricultural productivity.

There were consultations on village land use planning between planners and government authorities, including central and local administrations. This was further extended to the village level. The planners held meetings with village leaders (The Village Councils) and discussed the objectives and needs of land use planning.

At the outset, the following data were obtained on each area that was to be developed.

Land Resource data

- Land suitability - this information was obtained through soil survey and land evaluation.
- Land carrying capacity information.
- Topography, soils, agro-climate etc.

Land use

- Different types of land use including area under forest, game reserves, grazing land, livestock population and distribution, vegetation cover, etc.

Population

- Human population density and settlement, population growth rate, etc.

Administrative framework

- Including line of responsibility within the area (village) and outside the village, village boundaries, etc.

Infrastructures

- Including dispensaries, schools, roads, markets, community centres and other public services.

This type of information was used to determine the scope of work, area to be covered, level of manpower needed, cost and time required in the planning process.

(B) Step 2: Plan to Plan

The LUPP was responsible for the logistics of the land use planning process. The available resources included seven landrovers, field equipment for surveying and camping, cartographic equipment and secretarial services.

Planning methods used included:

- Socio-economic survey using Rapid Rural Appraisal. This method was used to get information pertaining to population growth and distribution, levels of agricultural production, livestock population, land tenure and ownership, population migration, and farm sizes;
- Remote sensing methods including aerial photo interpretation. Also use of small-scale satellite imagery to provide up-to-date information on land resources. This facility enabled rapid assessments to be made in villages during the selection process and the mapping of current land use to a high level of accuracy. However, it is very expensive and the available image covered few villages. Some information, eg soil survey data, was obtained from previous work done during the LUC.

The lack of qualified and skilled manpower was seen as a major constraint in land use planning. From the establishment of the LUC in 1977 until its transformation to the LUPP in 1986, 90% of all project staff were seconded from the Land Use Planning Unit of the Ministry of Agriculture. These staff included:

A Soil Scientist,

A graduate of Sokoine University of Agriculture,

Diploma- and certificate-holders in land use planning and soil conservation from Nyegezi Agricultural Training Institute,

A post-graduate diploma-holder in cartography from ITC - The Netherlands, and,

A certificate-holder in cartography from ARDHI Institute (Tabora).

Through on-the-job training, these staff gained experience and became competent in land use planning. The project planning team adopted a multidisciplinary approach to land use planning. However, although they consulted other line departments involved in land use planning (eg Lands, Forestry, Wildlife, Water, etc.), this was only on an occasional basis when contributions were judged to be needed. However, it was realized that agriculture played a key role in both the household and national economy, and staff from Department of Agriculture therefore remained permanently attached to the project.

In 1986, when the LUPP was placed under the NLUPC, new and permanent multidisciplinary teams were formed: the Regional Land Use Planning Team (RLUPT) and District Land use Planning Teams (DLUPT) in each of the four districts. Each planning team drew one member from each department related to land use (Water, Agriculture, Livestock, Forest and Lands department). Some of the new Team members were very new to land use planning activities. Other departments were reluctant to release their competent and well trained staff to work with the project.

The expectation of the potential of these teams was unrealistic. Some of the team members did not work full-time on the project, even though they were permanently attached to it. During much of the time, they remained idle and, as a result, many of them preferred to go back to their respective departments. Even the coordination of the team members became very difficult due to their being answerable to different departmental employers. The NLUPC, which assumed responsibility for the project, did not have its own permanent staff.

The project budget for land use planning was adequately prepared, before the beginning of each financial year. Prior to the project being handed over to the NLUPC, the UK ODA provided most of the funds for land use planning and, as a consequence, finance was not a constraint. Transport and supporting facilities were adequate and were kept in operation throughout the project life span of the LUC. A work plan was produced for the project as a whole and also for each team member. But, due to time constraints (project duration was three years), it was difficult to gather and assimilate all the essential information by full participation of the implementing agencies and local communities in the planning process. There was also an imperative to proceed in order that the project could achieve "something" before the end of its life span.

After handing over to the NLUPC in 1986, project funding became a major problem. Very little money was released for land use planning. As a result, it became very difficult to collect all the essential information as well as to ensure the full participation of local communities in the planning process. Some of the transport facilities were transferred to the headquarters in DSM. A few vehicles were left at Tabora but were not kept in good condition due to high maintenance costs.

(C) Step 3: Structure, the Problems and Opportunities

There was no systematic review of available physical, environmental, social and economic information. However, project staff sometimes reviewed existing information when they wanted to make use of it. The acquisition methods of some information were very expensive and could not be afforded. For example, it was intended to use SPOT satellite imagery covering the whole region to provide up-to-date information on land resources; but, owing to the high costs involved, the donor limited acquisition to imagery covering only part of one district (Nzega).

Land resources information was obtained from the previous works and reports written during the LUC, eg information on topography, soils, agro-climatic conditions, water, population and forest resources.

Most of the immediately available information was not very accurate or up-to-date due to:

the lack of facilities to handle and process information, e.g. computers.

the lack of up-to-date aerial photographs and satellite images which could be used to prepare maps of current land use and to monitor vegetation changes, etc.

In order to 'plug the information gaps', surveys were undertaken using simple and cost-effective techniques that included:

- ◆ definition of the village boundaries on aerial photographs
- ◆ simple delineation and quantification of upland areas considered to be suitable for cultivation.
- ◆ rapid mapping of existing cultivation and settlement
- ◆ collection of basic information on population and farming systems

- ◆ discussions with the village government on the problems of the village
- ◆ reconnaissance survey done to supplement information from aerial photographs and satellite images

Identification of main land use problems

The main land use problems were identified through seminars and meetings at different levels. Meetings were held with each Village Council, the District Council and the Regional Development Committee. In addition, project staff made field observations and held discussions with villagers. Following these exercises, some of the conflicting demands on land resources were identified, e.g. grazing lands versus agricultural land, etc.

(D) Step 4: Selecting Promising Land Uses

For the first phase of the project (LUC), the goals and terms of reference were:-

- ◆ to provide the necessary knowledge of the potential and limitations of the land of Tabora Region, and of the existing land use, to enable long-term development decisions to be made on a sound environmental basis;
- ◆ to develop appropriate land evaluation and planning techniques to enable village authorities to take the necessary steps to improve productivity and prevent misuse of land; and
- ◆ to train Tanzanian land use planning staff to under-take land evaluation surveys, and to design and implement land use plans.

After three years, when the LUC became the LUCC, the terms of reference were revised. There was no grouping of land development options. Land was earmarked for agriculture, livestock grazing, forestry and other uses, but more emphasis was placed on increasing agricultural productivity. The options were discussed between the project planning teams and village authorities (the land users).

A provisional budget giving costs for implementation was prepared. However, some of the options were left unimplemented due to lack of funds.

(E) Step 5: Land Suitability Evaluation

Land evaluation was carried out systematically to determine suitability for each kind of land use in every proposed development. The potential carrying capacity of different types of land was assessed, for both the farming population and livestock, and for current and future scenarios.

Land evaluation was based solely on the physical attributes of the land and followed the FAO Guidelines for Land Evaluation (FAO 1976).

Land qualities were identified from which land suitability was determined. Most of the land qualities were identified in the field by soil surveyors/scientists and included soil texture, soil depth, soil drainage, and soil chemical conditions harmful to crop growth (eg soil salinity). Climate was identified over broader areas on the basis of meteorological records and reconnaissance data.

The land use qualities were used to determine the soil class for production of a particular crop. The average values of the soil class in any given area of land for the different crops in a farming system determined the land suitability.

The details and approach in land suitability evaluation are described in the Report "Land Evaluation and Land use Planning in Tabora Region" (Mitchell 1984).

The land use planners did not consult with or collaborate with specialists other than those in the planning teams (eg. the soil surveyor and agricultural land use planners). However, they held discussions with villagers to ascertain the local experiences about different types of soils suitable for agricultural production.

(F) Step 6: Appraise Alternatives

There was no specific environmental impact analysis considered necessary in the land use planning process.

(G) Step 7: Plan Writing

The LUPP (Land Use Planning Teams) had the responsibility of translating decisions into plans for action. The plans and supporting information was needed by village governments, the district and authority and the line ministries.

Several copies of each village plan document were prepared. Each contained background information on the village and its resources, identification of problems, the planning proposals, village development strategies and plan implementation. Figures 12 and 13 are examples of the land use plan for Sungwizi village. Each village plan provided guidelines for all major land use development covering a period of 20 years. The preparation of detailed sectoral plans and other initiatives were the responsibility of appropriate government departments.

After NLUPC assumed responsibility for the project, the idea of ad hoc village planning was withdrawn for two main reasons: first, the task of preparing village land use plans had become the responsibility of the Town Planning Division of the Ministry of Lands, Housing and Urban Development; and secondly, the NLUPC argued that it was pointless to prepare village land use plans in isolation without considering nearby villages (NLUPC 1992). Thus, in the 1991/92 financial year, comprehensive land use plans for Kizengi Ward and Urambo District were being prepared.

Figure 12: Map of Sungwizi Village Showing Existing Settlement

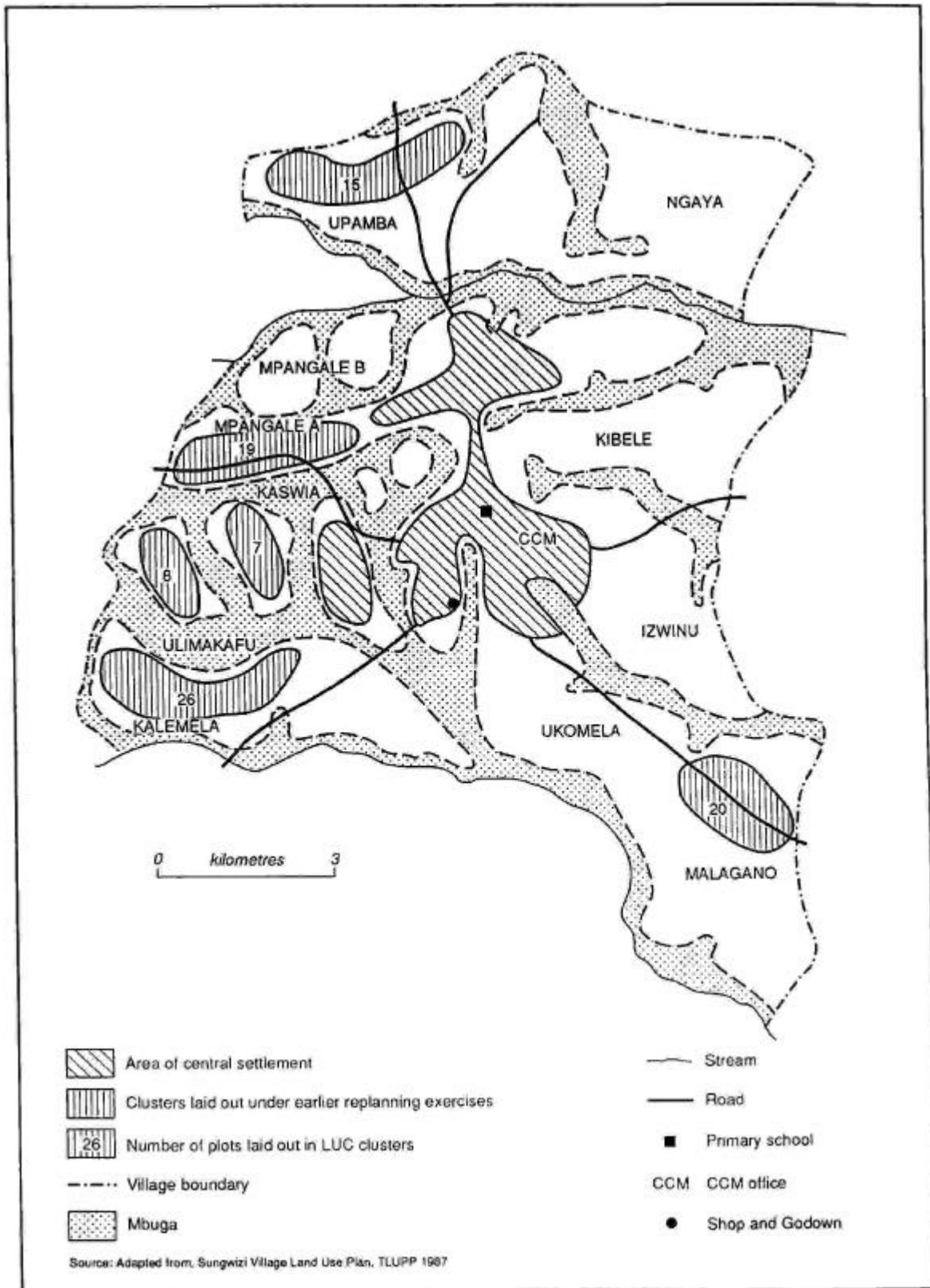
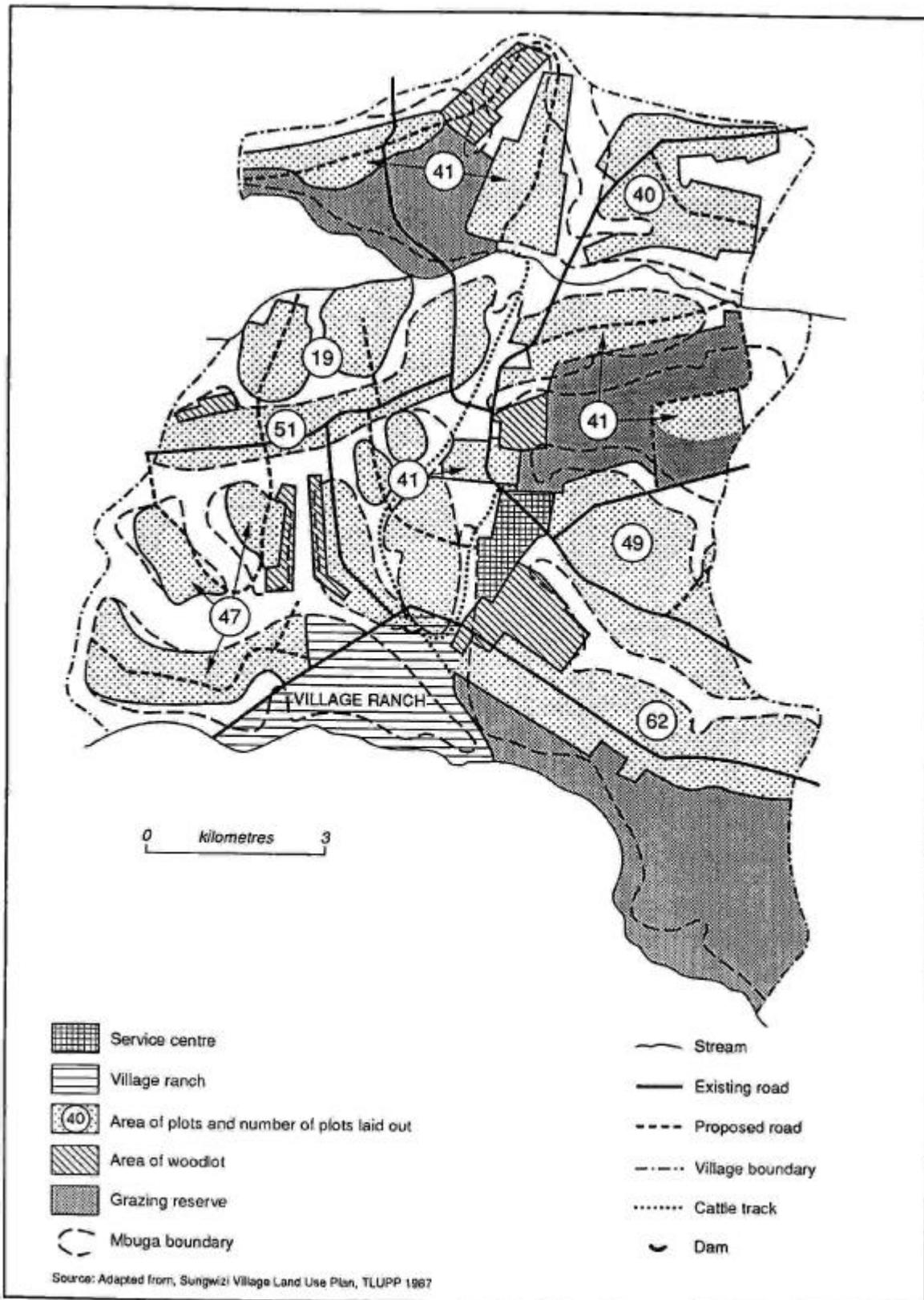


Figure 13: Map of Sungwizi Village Showing Proposed Settlement



(H) Step 8: Project Implementation

After the final approval of the village land use plans by the village and district authorities, the planners (DLUPT), in collaboration with the village government, supervised implementation.

By mid 1987, implementation work had started in eight villages: two in Urambo district, two in Igunga district and four in Tabora district. The implementation work included demarcation and allocation of plots to villagers (see Figure 14). In the whole region, more than 1303 plots have been demarcated and allocated to villagers to date. In Igunga and Nzega districts, each household was allocated with a 6.5 ha plot; whilst in Tabora and Urambo districts, each received a 10 ha plot. The difference reflected variation in rainfall, soil fertility and carrying capacity.

To date, implementation work is proceeding very slowly with little or no follow-up of plans made in the past (eg work done by LUC and LUPP). Most of the plans prepared are either only partially implemented, or not at all and remained as paper plans in the office. Similarly, lack of funds and trained manpower has prevented follow-up action to be taken on current plan preparation and implementation.

(I) Step 9: Plan Monitoring

The LUPP had a small Monitoring and Evaluation Unit which was responsible for monitoring the progress on plan implementation.

Annual surveys were carried out in planned villages to monitor changes in population structure, land under cultivation, incomes, yield levels, and numbers of household occupying the new planned plots. Comparisons were made with unplanned villages. During the surveys, problems encountered in plan implementation were also identified. The monitoring team also prepares a financial and economic analysis of each village planned. However, the unit ceased to operate after the project was handed over to the NLUPC.

The LRDC team collected much natural resource data/information in Tabora. Most of the reports are found in the offices of individual government officials and in personal documentation collections, and in the offices of government departments (eg, the Regional Development Director, the Regional Agricultural and Livestock Development Department, the Ministry of Agriculture, the Ministry of Lands, the Planning Commission, the NLUPC, etc.). Very few reports were available in the project office, since there was no proper attempt to keep records and store information.

A few of those people interviewed acknowledged the usefulness of the project reports and frequently referred to the final report (Mitchell, 1984). These included former members of the Land Use Planning Teams, the Tabora Regional Agriculture and Livestock Development Officer and the Tabora Regional Planning Officer. The latter expressed his concern that a special reference room should be established in the Office of the Regional Development Director, where all reports of work done in the region should be kept and made available to the interested departments. Although a few people may be aware of some of the information collected by LRDC, they are not clear where it can be obtained.

Figure 14: Map of Tabora Region Showing the villages Surveyed and Planned

