

'REGIONAL PLANNING IN THE KILIMANJARO/ARUSHA
REGION OF TANZANIA.'

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VOLUME II Appendices

NORTHERN REGION OF TANZANIA REGIONAL PHYSICAL,
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CHAPTER 1

1 NORTHERN REGION OF TANZANIA - SURVEY AND ANALYSIS

Introduction

This volume contains a detailed survey and analysis of the Study Region - i.e. the Northern Region of Tanzania, comprising of the two political administrative regions of Arusha and Kilimanjaro (formerly known as the 'Northern Province'). The survey will cover the region's social, economic and physical resources.

The regional analysis will examine each sector of the economy individually to see its contribution not only to the regional economy but to the national economy too. An analysis of the demographic and social characteristics of the region is an important part of the preparatory work necessary to the creation of a plan for future development. Population characteristics such as age, composition, sex ratios, rates of natural increase and net migration have implications for the stability and growth of the region. Educational attainment and training of the region's labour force, on the other hand, determine to some degree the productivity of its industries, while income analysis can indicate problem areas.

There will also be an analysis of the growth potential of the economic sectors such as, agriculture, manufacturing industries, commerce and trade, construction, and transport and communication. Tourism will receive a more thorough analysis since it is a very important sector in this region. The development of these sectors will, to a large extent, determine the degree of industrial diversification in the

region. Furthermore, future trends in these industries will determine settlement patterns and influence priorities and targets.

The analysis of the above will show the pattern of development in the region, for example, which areas are more developed than others; which areas are falling behind in development; what factors affect the development of the area or the planning of its development and so forth.

Thus, the survey and analysis report will identify trends and relationships in the various sectors of the economy, thereby providing a basis for forecasts; will indicate where policies may be required and will provide a background against which the effects of alternative policies can be measured.

WHY PICK THIS REGION?

Obviously, other regions could have been taken for study, but this particular region, apart from being familiar to the writer, merits attention because of the following reasons: Firstly, it is a region which has a marked potential for economic growth with tourism and agriculture bringing in a lot of foreign exchange. A full-scale development plan will thus be useful in guiding the development of the area; Secondly, geographically this region is a very compact and functional area with the two administrative and urban growth centres of Arusha and Moshi separated by only fifty miles of good tarmac road, with the two areas having a strong economic linkage. In fact this region has been recognised over a long period as a "natural economic unit" cutting across the existing administrative divisions and even in the Second

Five Year Plan¹ it was generally expressed that there was good reason for the amalgamation of these two regions into a single planning unit.

Thirdly, the area happens to have several problems fairly typical of the other areas in Tanzania, a solution of which could be used in the planning of other areas. These problems include: rural/pastoral problems; problems affecting the vast dry areas of the lower plains; population overcrowding especially in the highland areas of Mt. Meru and Kilimanjaro; great tourism development with the consequent conflict between it and the other land uses; fast development in the towns of Arusha and Moshi, symbolic of other growing towns in the country creating urban problems, etc. All these are problems which need a comprehensive solution as soon as possible and a regional scale planning would be an ideal method of dealing with them.

To a great extent therefore, this study area possesses some of the basic characteristics of an ideal planning region - It is fairly compact in outline; possesses some measure of unity, organic interrelationship and cohesion; includes whole problem areas such as (a) the Arusha/Moshi and Pare areas suffering from acute land shortage, population overcrowding; urban problems and tourism conflict and (b) The rural lower plain areas of the region stretching from Arusha to Masai and Mbulu districts whose problems include, lack of good soils for agriculture, tsetse fly infestation, wildlife conservation and tourism, lack of infrastructure and so forth.

1.1 AREA OF STUDY. LOCATION AND BOUNDARIES

One of the first steps taken in regional planning is to delimit the boundaries of the planning region. In this

case the boundaries are as follows: In the north the region shares a common boundary with Kenya which is approximately 180 miles long; in the east, the region is bound by Tanga Region; the south by Dodoma and Singida regions which are fairly dry, less developed and with different problems, and finally, in the west by Shinyanga and Mara regions which are relatively fertile areas growing crops like cotton, millet etc., and whose economy is linked to the Lake Victoria Basin area.

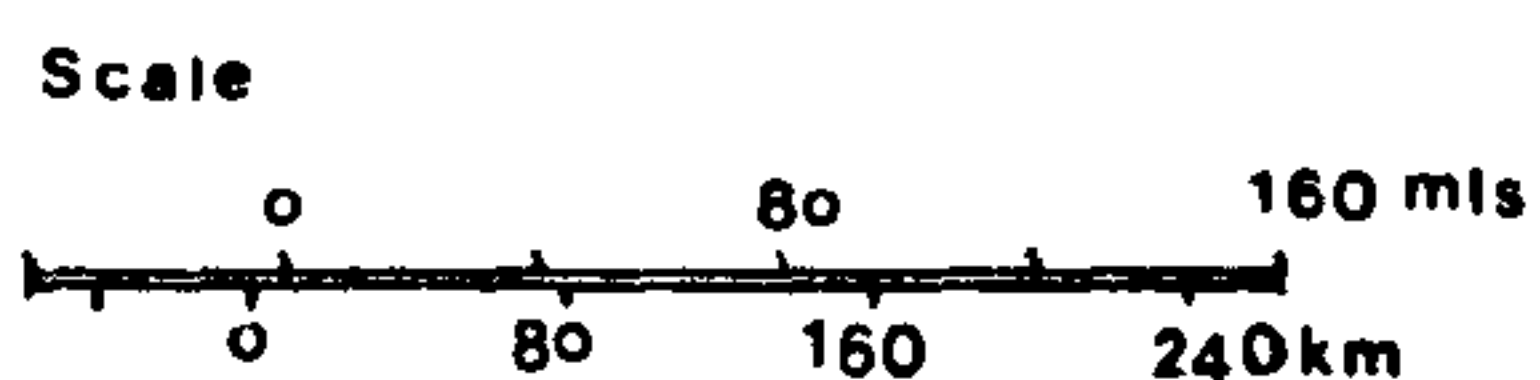
The region thus includes two of the big tribes of Tanzania - the Masai and the Chagga; covers the entire northern tourist corridor composed of the world famous Serengeti national park, Ngorongoro plains and Crater, Lake Manyara, Arusha and Kilimanjaro National Parks and part of Mkomazi game reserve area. The highest mountain in Africa is also found here - Mount Kilimanjaro.

The study region covers an area of 36,100 sq. mls., some 10% of the total land area of Tanzania mainland and has a population of 1.25 million people, which is also 10% of the Tanzania total population. However, population is not evenly distributed throughout the region. The immediate districts around the urban centres have densities of 180 persons per square mile in Arusha and Maru areas and 244.3 persons per sq. ml. in the Mopfi and Rombo districts. On the other hand, in the Masai and Hanang districts the population density is a mere 4.3 persons per sq. ml. This pattern of population distribution is a direct function of the present level of agricultural productivity in the various parts of the region, the endowment of exploitable natural resources, presence of infrastructure and many other factors.

Study Area - Northern Region - Tanzania

Map 1

1967



1.2 A SHORT HISTORICAL BACKGROUND OF THE REGION

The dominant tribe - the Chagga, seem to have developed from sources of migrant tribes which moved into the Highland Zone of the region around Mt. Kilimanjaro during the 15th and early 14th centuries. It is believed that these tribes came from the north and the earliest settlements were established at Marangu about 500 years ago. The other tribes, including the Mbulu, Meru and The Masai (Nilo-Hamites) are also known to have come from the north. The only indigenous tribes in the region are very few and these include the Iraque of Mbulu. The Masai settled in the vast plains tending their cattle and have been pre-occupied with this activity ever since.

In and around the highland areas, there used to be long periods of wars and rivalry between different tribal groups especially between the Masai, Meru and Chagga over cattle stealing, land ownership etc. and these went on until the early 1900's.

In the 1840's missionaries came to this area spreading religion especially to the eastern part of the region around Moshi and Rombo districts and many mission posts were established. Slave trade also came to this region with Arabs buying slaves from the chiefs who were ruling this area. This trade lasted for a long time and many areas lost quite a number of people through this degrading business.

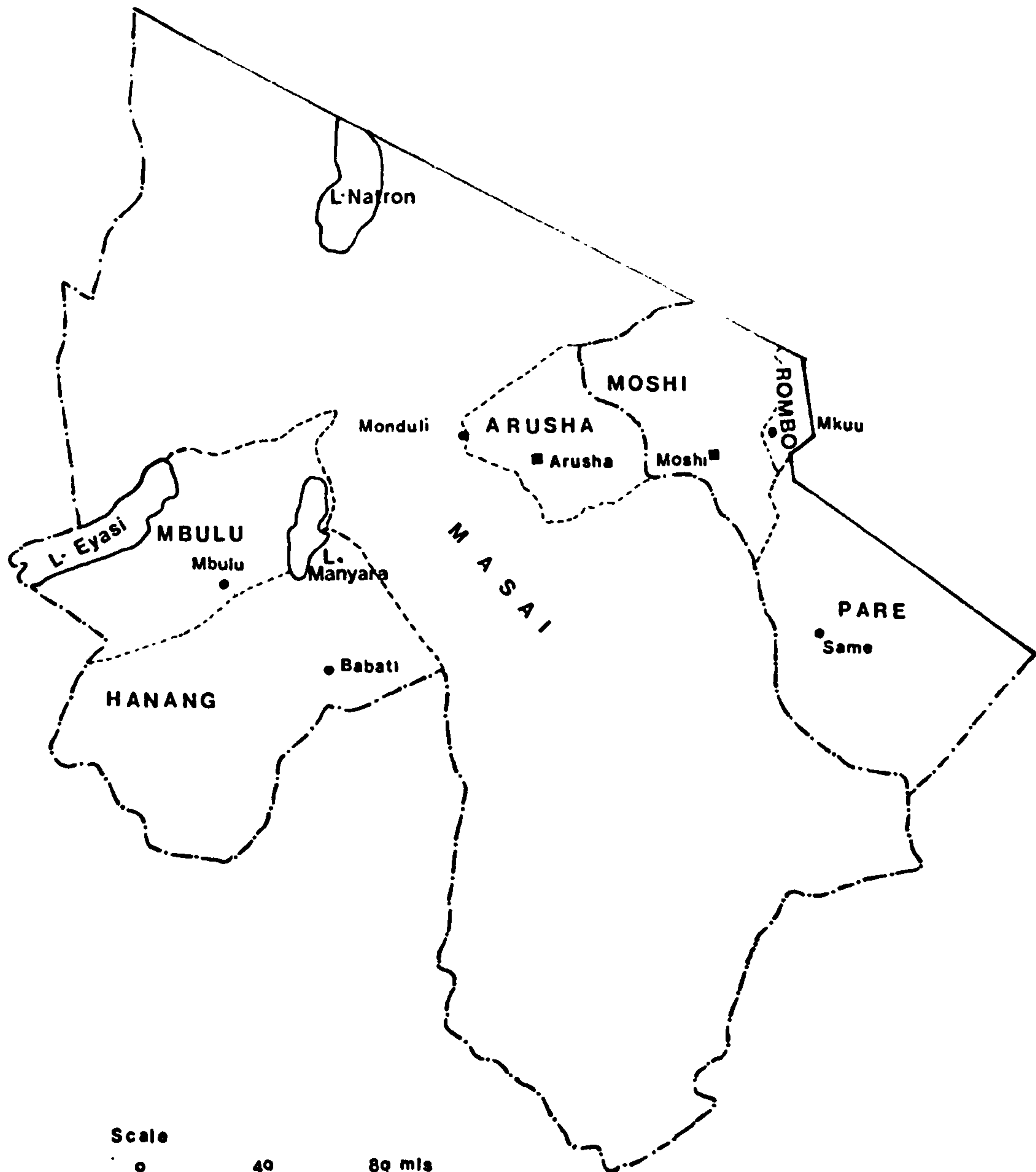
Germans appeared on the scene in the 1800's and by the 1880's trading relationships with a German company had been established and in May 1885, the Germans established a Protectorate over Kilimanjaro. They failed to go west because they faced stiff challenge and opposition from the Masai.

The Germans enforced a harsh rule over Kilimanjaro which resulted in fighting between them and the local chiefs - in particular chief Meli of Moshi. However, they succeeded in establishing their settlement at Old Moshi, which later became the nucleus of the present town of Moshi, which was established further south than the original site. They also built a railway from here to Tanga to transport the agricultural produce from this region and bring in goods from abroad.

The German occupation did not last very long, for in 1916, British troops occupied Kilimanjaro and later the whole of Tanzania when Germany was defeated in the First World War and had to renounce all its colonies in Africa. Tanganyika was then put under the responsibility of Great Britain who ruled the country as a Trustee Territory until 1961 when Independence was granted.

For administrative purposes, during the German era, Tanganyika was divided into 22 districts and the study region was composed of Arusha, Moshi, and Irangi districts plus parts of the Usambara and Pangani districts. When the British took over in 1921, they continued with the same system, but with a country as large and as varied as Tanganyika, it was only to be expected that the administrative structure would not remain stable but would need to be modified to suit changing conditions. Between 1933 and 1961 the country was divided into 8 provinces with 58 districts. The current situation came into being in 1964 when the 8 provinces were broken down into 17 regions and the number has been growing ever since as more regions are created by reorganisation.

Administrative Areas - Districts.



KEY.

	National Boundary
	Regional Boundaries
	District Boundaries
	Regional Hqts.
	District Hqts.

because of its high altitude and temperatures range from 17°C to 34°C. Rainfall varies from 30 in. to 60 in. in the year, but this is not uniformly distributed.

Table 1 Area of Study

Admin. Regions	District	Land Area	Water	Total Area (Sq. Mls.)
Arusha	Arusha	1150	-	1150
	Masai	24350	350	24700
	Mbulu	3000	600	3600
	Hanang	3800	-	3800
	<u>Sub-total</u>	<u>32300</u>	<u>950</u>	<u>33250</u>
Kilimanjaro	Kil & Rombo	2050	-	2050
	Pare	3050	-	3050
	<u>Sub-total</u>	<u>5100</u>	<u>-</u>	<u>5100</u>
S. Area	Total	37400	950	38350

Source: Statistical Abstract. 1970. Bureau of Statistics. Dar. pg. 2.

A. PHYSICAL FEATURES

Physically, the region is composed of the following features: (See Map 3a and 3b)

The Masai Plateau:

Here the plateau is comparatively featureless and rises slowly westwards to the Higher Masai Plateau over 1000' above sea level. It is semi-arid, gradually rising country, interrupted by inselbergs (steep outcrops of old, hard basement rocks), small hill masses and occasional mountains.

The North-East zone:

This zone consists of two distinct types of upland, the Pare range mountains and the line of volcanic mountains which runs almost east-west and includes Kilimanjaro (5950 m) and Meru (4600 m).

The north and south Pare Mountains are a typical up-lifted plateau with steep-sided slopes dropping about 1000 m to the Pangani valley on the south-west. The upland is characterised by undulating country with some areas of spectacular mountain landscape. These are much similar in origin to the Usambara mts. though they are narrower and lower. The same type of earth movements that resulted in the block mountains were also responsible for the rift-like trough of the Pangani valley which lies at their feet (2b). Much of the floor of this depression was a lake at some period in the late Pleistocene or Recent, and soils are locally saline. The line of volcanoes terminating in Kilimanjaro may also be related to a line of weakness in the earth's crust, though the age of the vulcanism ranges considerably from one end of the line to the other. Kilimanjaro and Meru are cones of still active or very recently dormant volcanoes (3 on Map). Kilimanjaro has three main peaks: Kibo the highest, Shira and Mawenzi, and of these only Kibo still maintains its crater form, with periodic emissions of gases from the crater. The slopes of this mountain, which sweep down to Moshi at 1000 m in one continuous line, must be one of the highest continuous slopes, and one of the most impressive sights in the world. Meru, rising 3400 m above the town of Arusha, could only be dwarfed by such a gigantic neighbour. The crater of Meru is broken on the eastern side, while in a

huge fall and flow of material the crater wall broke away and is now represented by a pile of debris stretching some 15 kilometres towards Kilimanjaro. The other volcanoes in this line have been strongly denuded and no traces of the craters are left.

The Western Zone

This is a line of high country extending near Lake Natron to the north of Dodoma. It is a complex area of high ground associated with the eastern rift valley but the rift faulting gives way southward to a whole series of fault lines. In the north the highland zone borders the faulted area of Lake Natron and Lake Manyara. Part of the altitude is due to relative upward movements of the blocks, but this has been increased by the addition of much volcanic material. Oldonyo Lengai is still active and many extinct cones occur including Hanang Mountain over 3300 m. The second largest caldera in the world, Ngorongoro, is also found here. In the south the upland decreases in altitude breaking up into parallel ridges, and little trace of Pleistocene vulcanism is found. These features are summarised in the Physical and Relief Features Map 3b.

B. SOILS

The region has a very wide variety of soils on account of its topography and geological composition. Extending roughly from the Serengeti plain to Kilimanjaro in the east, is a belt of land which produces the rich, red soil that is so important economically in Mt. Kilimanjaro Grassland proper, with only very few trees. Trees cover a lot of the land in the highland zone. On the other hand, the Mkomazi plains and the Masai steppe have arid skeletal montmorillonoid soils,

which are soils in which there is an accumulation of calcium carbonate either deposited by ground water or accumulated by the capillary rise of ground water from a carbonate-rich parent rock. These soils are not ideal for anything else other than animal grazing which is the main activity in this area.

The various soils can be summarised on Map 4 and the classification used here was developed by W. Calton (1954)² and used in the 1957 Atlas of Tanganyika. More recent classifications are used in the map by G.N. Gathin Jones and R.M. Scott in E.W. Russell (1962) and in the new Atlas of Tanzania (1969)³. Calton's classification has, however, the advantage of relative simplicity and is suitable for a small scale map. It is based essentially, on genetic characteristics. Thus it combines the age of the soil, in terms of clay mineral formation in tropical soil processes, with the nature of leaching. Three major characteristics are recognised, comprising eluvial and illuvial types, of regional or quasi-regional extent, and catenary associations. In each category individual soil types reflect the nature of the clay-mineral composition.

A. Eluvial (Quasi-regional leached soils occurring on well drained sites).

In this region we have three types of this soil category:

1. Skeletal-immature soils, often with bare rock outcrops, occurring mainly on recent volcanic uplands especially Mts. Meru and Kilimanjaro.
2. Kaolinoid brown soils - mostly rich clays weathered from base-rich, recent volcanic rocks. They occur extensively around Mt. Kilimanjaro and Oldean. These soils are very

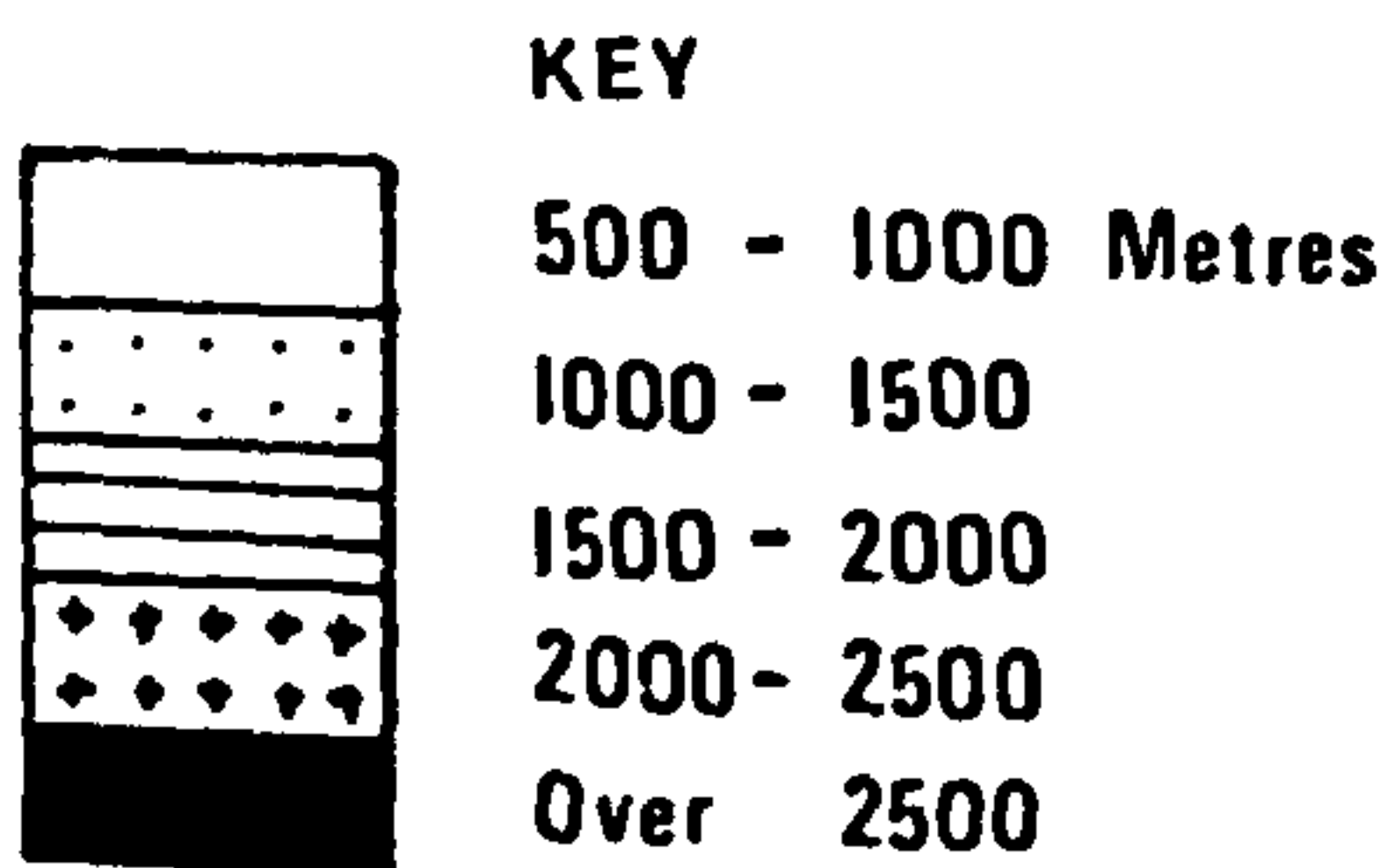
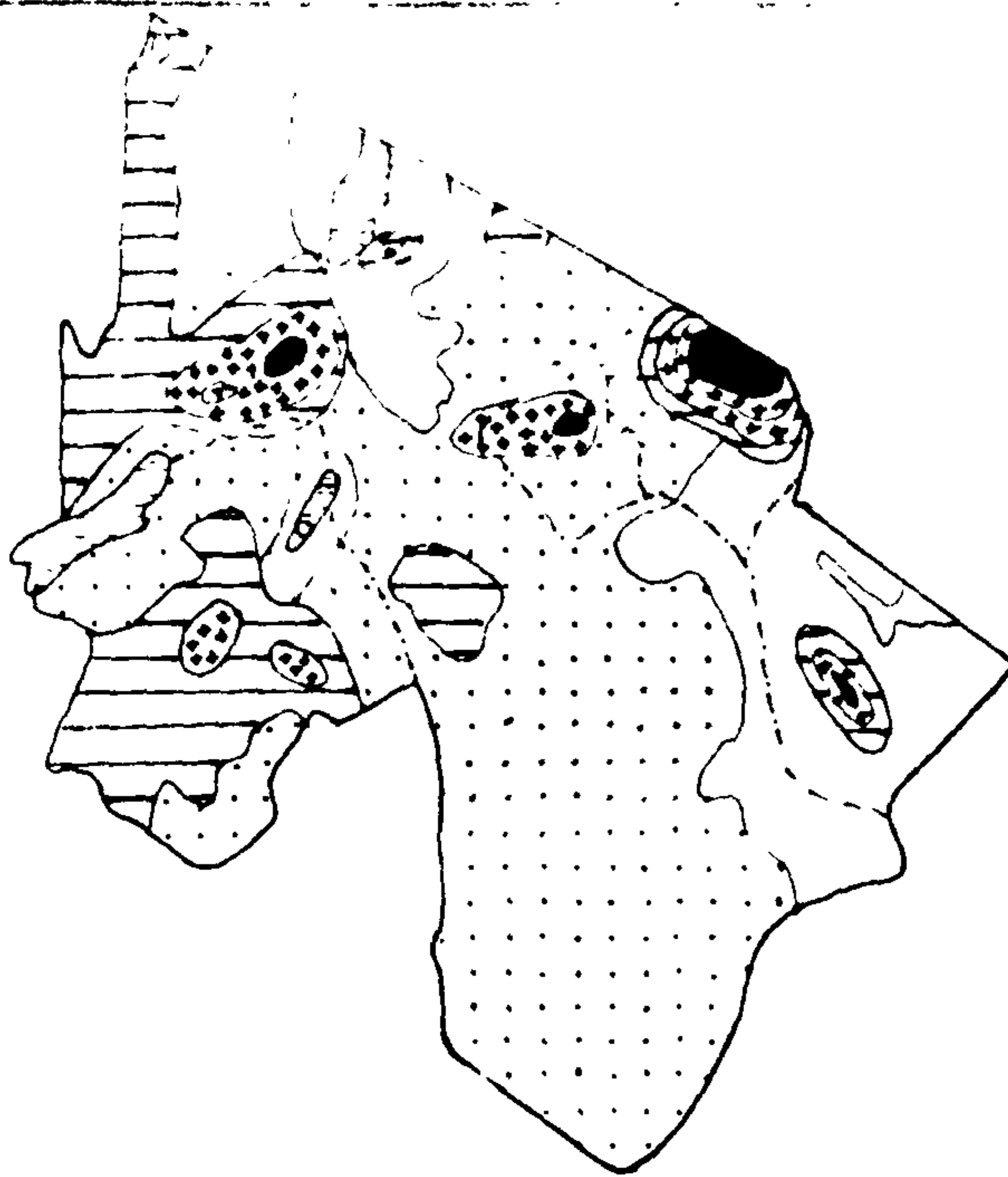
good for most crops including maize, coffee, wheat and other cereals.

3. Sesquioxidic-kaolinoid - highly leached soils which are lacking in plant nutrients. In this region they occur in the Pare mountains and along the edge of the Eastern rift..
- B. Illuvial (Quasi-regional soils in which transported leached minerals or the direct products of rock decompositions in situ accumulate).
4. Skeletal soils - in which there is an accumulation of soluble salts. They occur in semi arid river valleys, particularly that of the Pangani, where there is a problem of salinity through the evaporation of salt-rich flood waters.
5. Arid Skeletal montmorillonoid soils - These are soils in which there is an accumulation of calcium carbonate either deposited by ground water or accumulated by the capillary rise of ground water from a carbonate-rich parent rock. The principal areas in the region are the Mkomazi Plains and the vast area of the Masai steppe (The Masai-rain-pond catena).
- C. Catenas (Associations of soils, both eluvial and illuvial, in a repetitive sequence determined by relief and drainage).
6. Red-earth dominant - These occur in the Mbulu plateau.
7. Kaolinoid red-earth, non calcareous bottom land sequence.
The only variety of these soils in this region are the red-earths dominant which occurs in the Pare mountains.

The fertility of these soils are related primarily to age. Thus of the eluvial soils (1-3) normally have moderate to high fertility; except where saline. In fact these are the soils which produce most of the crops grown in this region. The illuvial soils are generally fertile though often subject to drainage problems. Where excessive soluble salts are

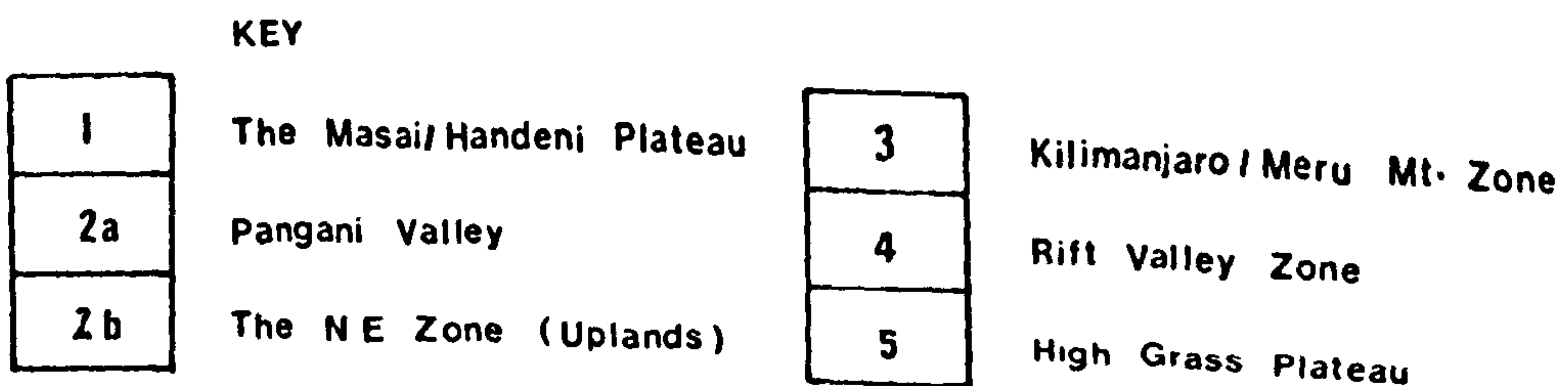
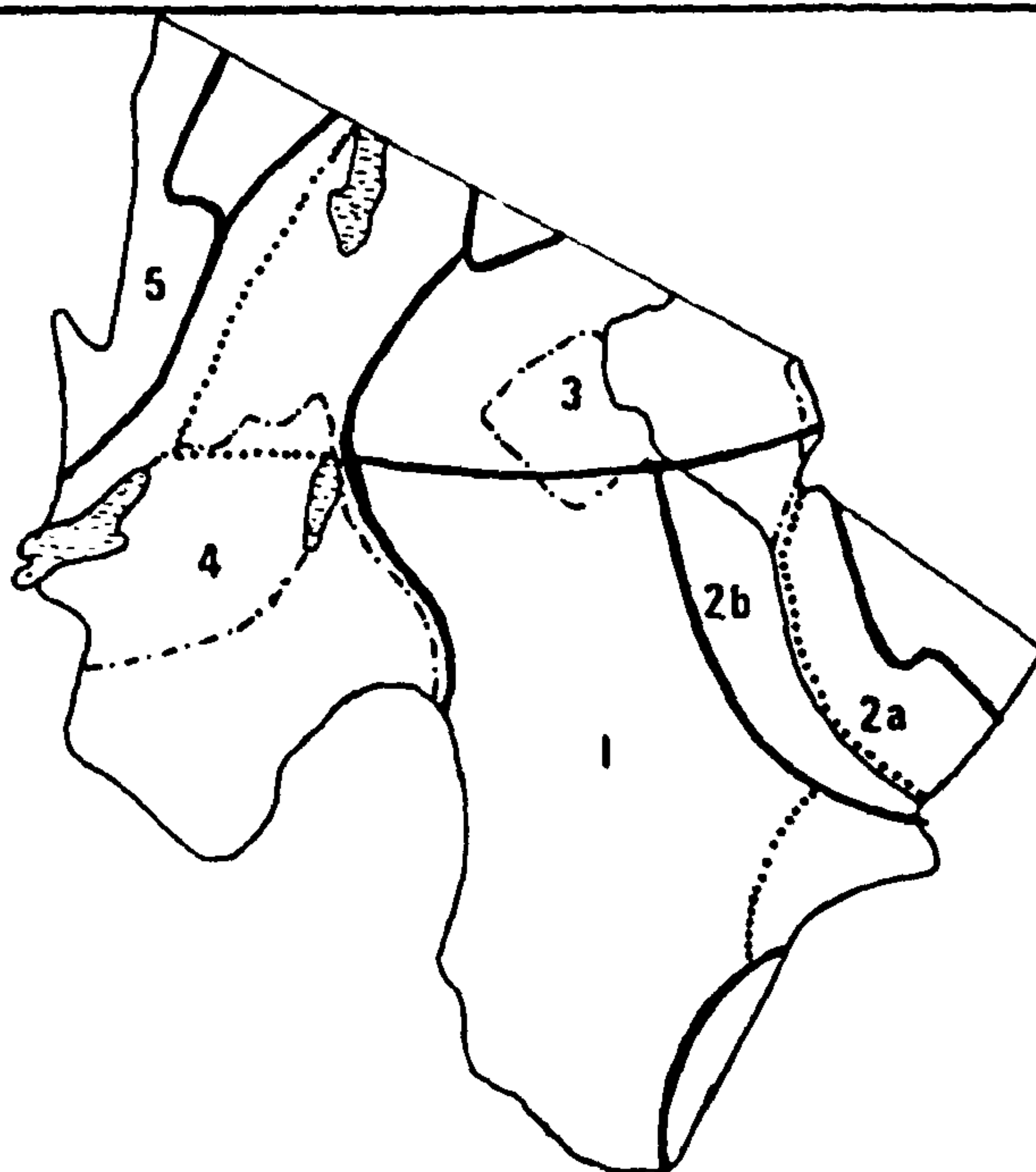
RELIEF AND PHYSICAL FEATURES

MAP 3A.



RELIEF ZONES

MAP 3B.



present they cannot be cropped. These soils occupy a vast area in the region including most of the Masailand where most of the land use is animal grazing and animal life sanctuary.

It is thus, seen that only about a third of the region has fertile enough soils for good agriculture and these areas cover most of the slopes of Mt. Kilimanjaro and Meru, and in Mbulu. As a result, these areas are extensively and intensively farmed with some of the soils already exhausted through over-use without enough care. More areas in the region could still be farmed if irrigation is introduced and fertilizers applied. Vast areas in Mbulu can be opened up for wheat and maize, but at the moment lack of infrastructure hinders this. Action is needed soon to increase the regional production of agriculture.

C. VEGETATION

The region has a very wide variety of vegetation ranging from extensive grasslands in the Masailand and Mbulu areas through to forests on the slopes of the mountains in the region. High altitude forests cover an area of 171,250 hectares, which is 25.9% of the total regional area. In addition, there are other forests which cover an area of 270,000 ha. - about 17% of the land area. The principal vegetation categories are outlined below:-

1. Forest

Most of the forest in this region belongs to the lowland and upland dry evergreen type, though areas of rain forest and deciduous forest occur as well as a range of ground water (swamp and riverine) type. The forest area is confined mostly to the major uplands of Kilimanjaro, Meru, Pare, and Mbulu.

Forest tree species are extremely varied and discussions of them is beyond the scope of this study. Major economic trees are, however, discussed in the section on Forestry.

2. Woodland - (Forest-Grassland Mosaic)

This type of vegetation comprises trees of lesser height than in forest and with a lesser canopy. The ground cover is normally grass, for example *Andropogon* spp., *panicum maximum* and *Eragrostis* spp. and herbs. The most extensive form of woodland is miombo, dominated by *Brachystegia Isoberlinia* species, which covers some parts of Mbulu highlands, Arusha and North Pare. In addition it fringes the Pangani river.

3. Bushland and Thicket

This dense shrub and low tree form of vegetation is often found on hardpan soils in the miombo woodland, but there are also areas of more regional extent which are dominated by thicket. Much bushland varying between thicket and wooded grassland (savanna) density, is widespread in the dry area with not too acid soils. In the region, it is found in the Rift Valley zone, on steep or rocky northern slopes of the Pare Mts. Bamboo thicket comprising almost pure stands of *Arundinaria alpina* is found in patches between 7,000-9,000 ft. (2400-2700 m) on Mt. Meru (but rare on Mt. Kilimanjaro), and also Oldean in the Crater Highlands.

4. Wooded Grassland

This type of vegetation is dominated by grass and herbs with low trees or bushes either grouped or scattered according to type. Canopy cover is less than fifty percent. It may form a natural community, but it seems likely that in most areas it is a fire climax. The vegetation is found at least

locally throughout the region, either with changes of soil and water relations to edaphic grasslands or induced by burning, grazing or cultivation to secondary grassland. Edaphic grasslands of valleys, floodplains and pans are a conspicuous feature and extensive in the Masai Steppes. Much of the Serengetic plains are covered by this vegetation. The most common trees associated with this type of vegetation are Combretum and acacia species - which are fire resistant.

5. Grassland

In this type of vegetation grasses are dominant, and tree cover, if any, is less than ten per cent. Most examples of this type are the result of edaphic factors. They occur principally in the region's valleys, especially where subject to seasonal flooding, hence the rather linear pattern on the map. Grass species vary according to the poverty of drainage. On Mbugas, *Setaria holstii* is most significant with *Digitaria* and *Themeda* species. Occasionally dwarf grasses such as *Microchloa indica* and '*Sporobolus*' spp. may occur. On less flooded sites '*Hyparrhenia rufa*' is common but there is a wide variety of possible species. These grasslands occur extensively in the Serengeti and most of Masailand and hence are associated with grazing.

6. Swamp

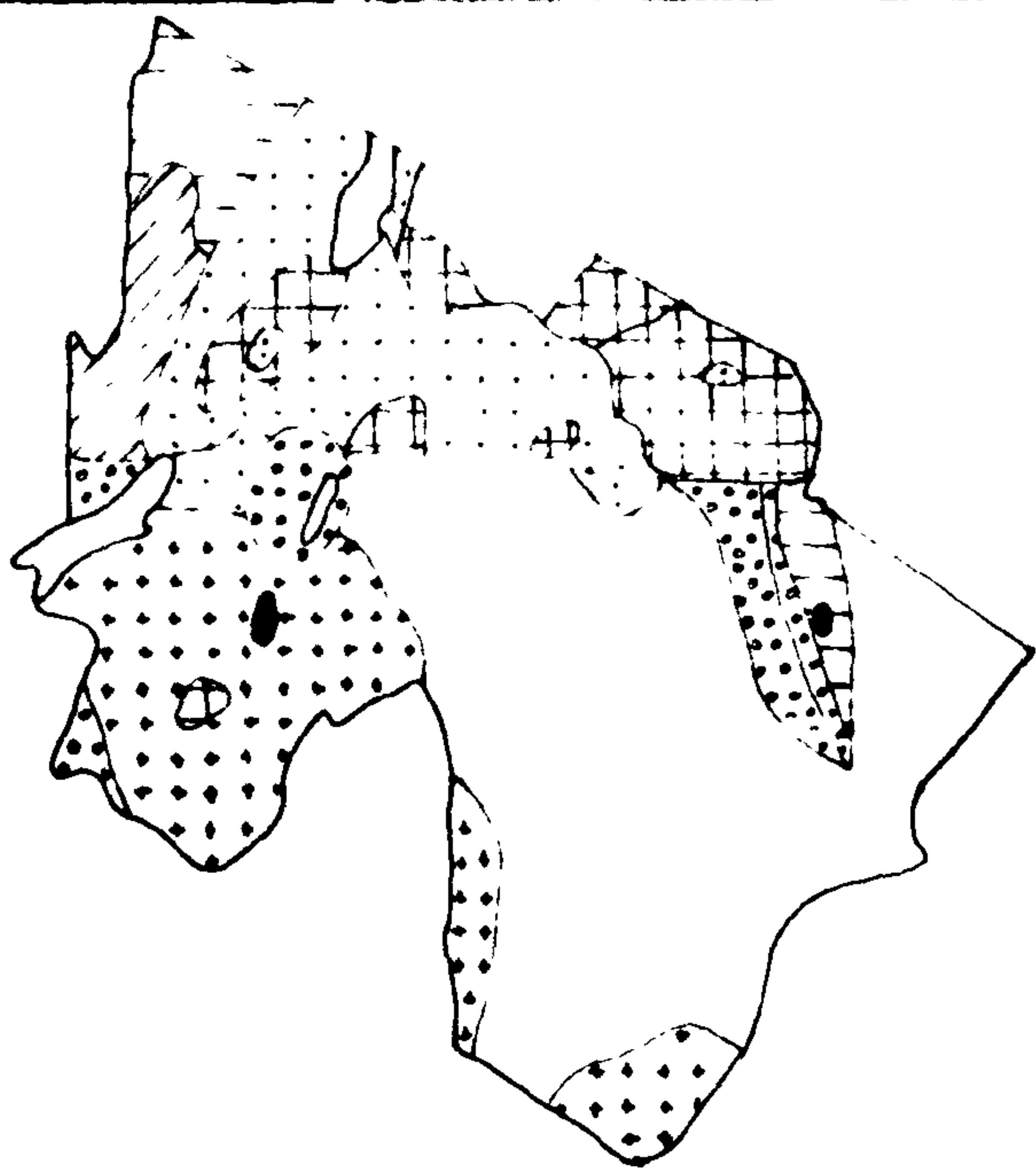
Swamp vegetation grows where there is permanent water-logging in the valleys or inland drainage basins. The vegetation may comprise grasses, reeds or bushes. Very few areas are covered by this vegetation in the study region.

7. Desert and Semi-Desert

In the region this type includes the rock and ice of upper Kilimanjaro and the salt flats of Lake Eyasi and

SOILS

MAP4.



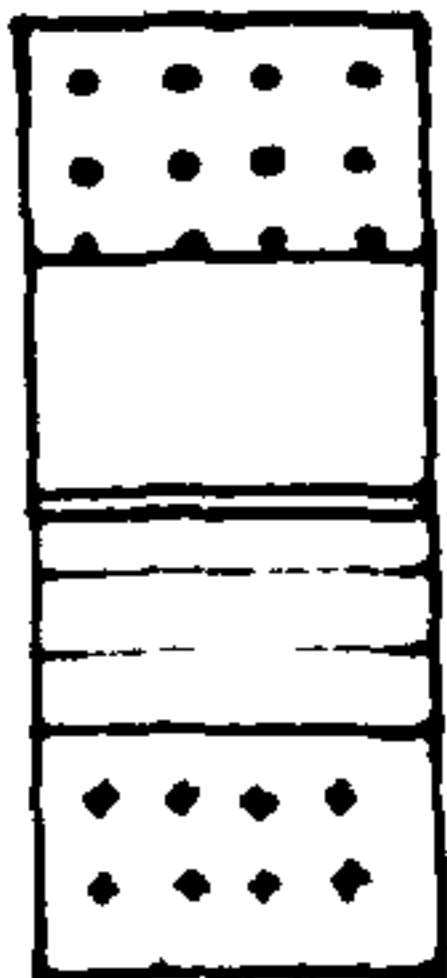
KEY

ELUVIAL TYPES



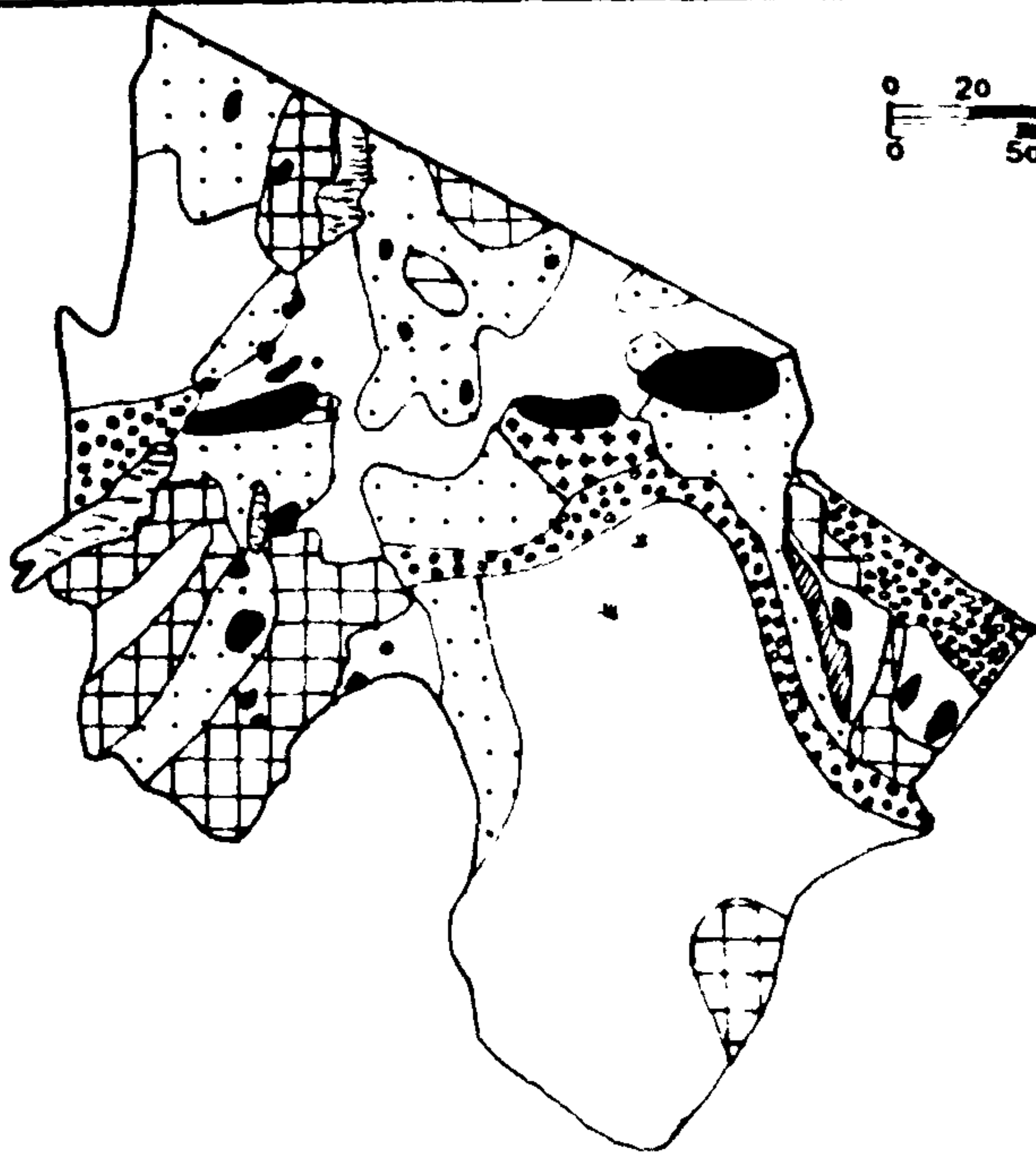
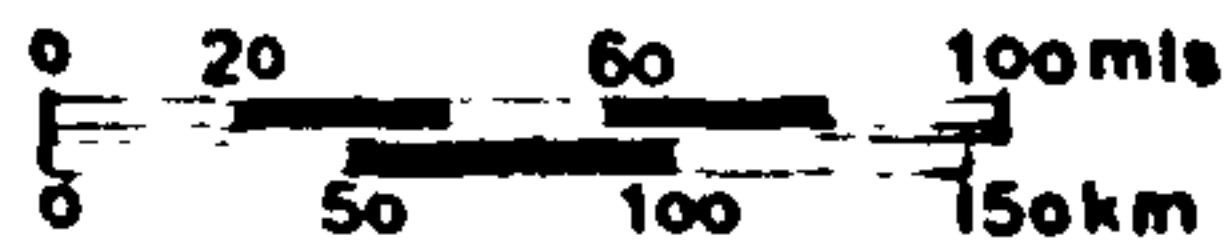
- Skeletal - immature soils
- Rich Clays
- Highly Leached old soils
- Dark Clays

ILLUVIAL SOILS

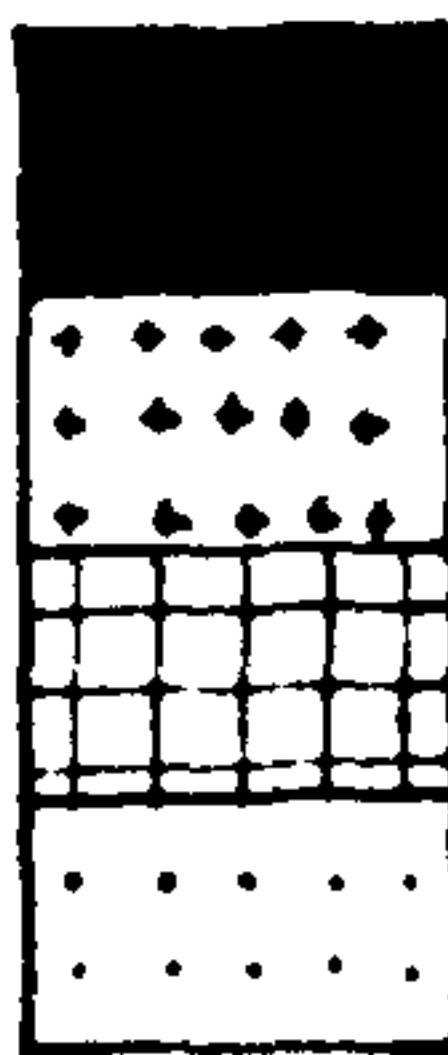


- Saline skeletal soils
 - Arid skeletal soils - dry
- CATENAS
- Red earths occuring in humid areas
 - Red earths predominant

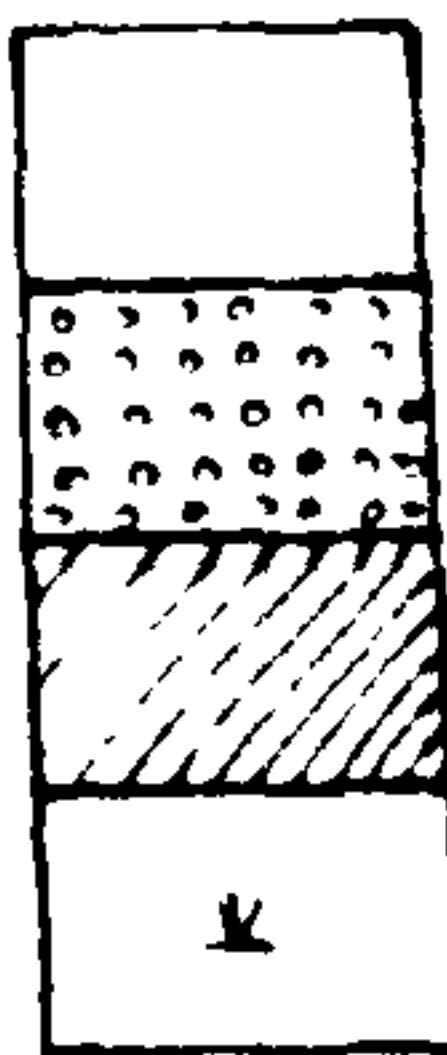
VEGETATION



KEY



- Forest
- Woodland Predominant
- Bushland Predominant
- Wooded or bushed grassland



- Grassland
- Transitional to Desert
- Semi Desert
- Permanent Swamp

and Natron. Few climatically induced semi-desert areas occur. A notable example is the Mkomazi Plains between the Pare and the Western Usambara Mountains. The vegetation normally consists of stunted shrubs, especially 'acacia' and 'commiphora' species or saltbush (*Suaeda monoica*), and scattered tussocks of grass, for example 'Sporobolus robusta'.

This brief account serves only to illustrate the wide range of variation in the region's vegetation types and shows the areas which are suitable for various agricultural activities - either farming or grazing. It also points out some of the areas which have limited potential for agricultural use because of the poor vegetation there is at the moment - e.g. the semi desert areas mentioned above. Given modern technology and money some of the areas can be improved, but for others very little can be done to bring them to any use.

D. RIVERS

The rivers in the region drain into two major drainage basins, the Indian Ocean and the interior basins. Only the Pangani drains directly to the Indian Ocean. Its various tributaries start from the Kilimanjaro Mt. slopes and are fed by the melting snows of the mountain and the heavy rains that occur in this area. The tributaries include, the river Mue, Wona, Nanga, Karanga and many others.

The streams draining into the interior basins include the Wembere into Lake Eyasi and a number of smaller streams flowing into Lake Manyara, Natron, Duluti and Jipe. The latter is fed by rivers flowing from Mt. Kilimanjaro and the Pare Mt. ranges.

In some of the drier areas, during the rains, rivers abound, but by the end of the dry season most of them have

vanished. Due to the lack of forest cover and also to a rainy season that lasts, on the whole, less than half the year, many of the rivers in the dry areas are not permanent.

The rivers in the region offer huge potential for development both for hydro-electric power and for irrigation. So far hydrology and development possibilities have been investigated mainly for the Pangani river and its tributaries on Mt. Kilimanjaro. Already the hydro-electric potential of this river has been harnessed for use in the coastal and Arusha/Moshi area. Its waters have also been used for irrigation through the Nyumba ya Mungu Dam in Pare. Numerous other projects of irrigation have been undertaken in the region. In addition, the waters flowing down the mountain are now piped for domestic use especially in the Moshi and Rombo districts.

Since water is required for most agricultural activities and for human life, we find that the areas where water is available in abundance, are the ones with the greatest population concentration engaged in farming - e.g. The Kilimanjaro area, Meru, Lower Pare and Mbulu. On the other hand, in the dry areas like most of Masailand, very little arable farming is taking place. There are several areas which could be improved by irrigation but money is the greatest obstacle.

1.4 CLIMATE: RAINFALL AND TEMPERATURE

A. RAINFALL

Water is a key factor in the development of this region and, clearly, therefore, rainfall, together with evaporation, are the most important climatic elements. The seasonal rainfall distribution in particular, greatly influences

agricultural practices. Much is not understood about rainfall over East Africa, let alone this region, and lack of data, particularly in the upper air, precludes the making of a complete physical interpretation.

Ignoring the effects of highland areas, the seasonal pattern is as follows: During January and February the region faces its dry months receiving only five percent of its annual total rainfall most of which falls in the highland area. From March to April the amount of rain starts to rise gradually to the period of the "Long Rains" which last from April to July. This is followed by a dry spell which lasts until October when the period of "Short Rains" commences until November. Thus, the region receives rain in two periods. The amount of rainfall varies between 600mm to 1400mm.

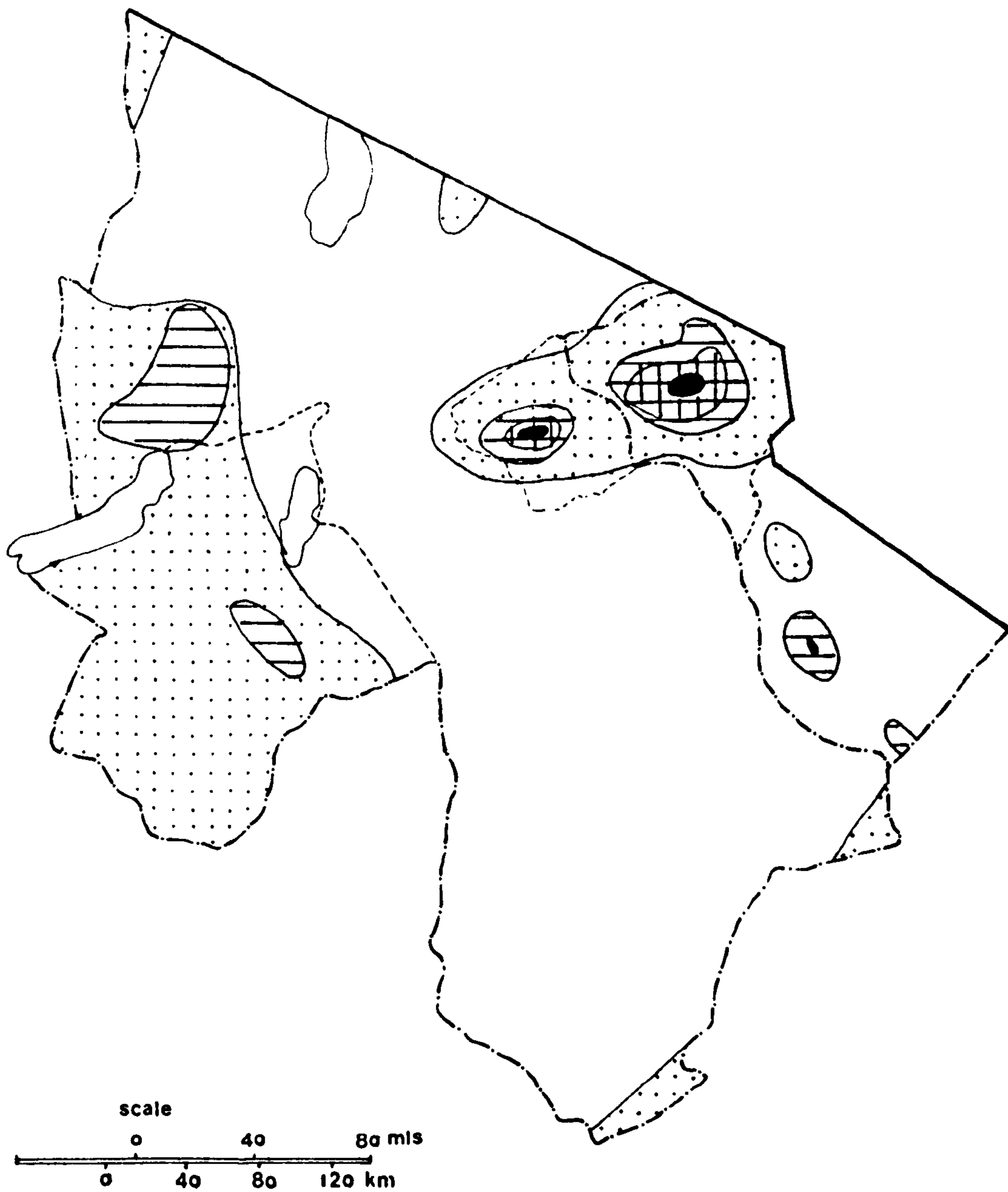
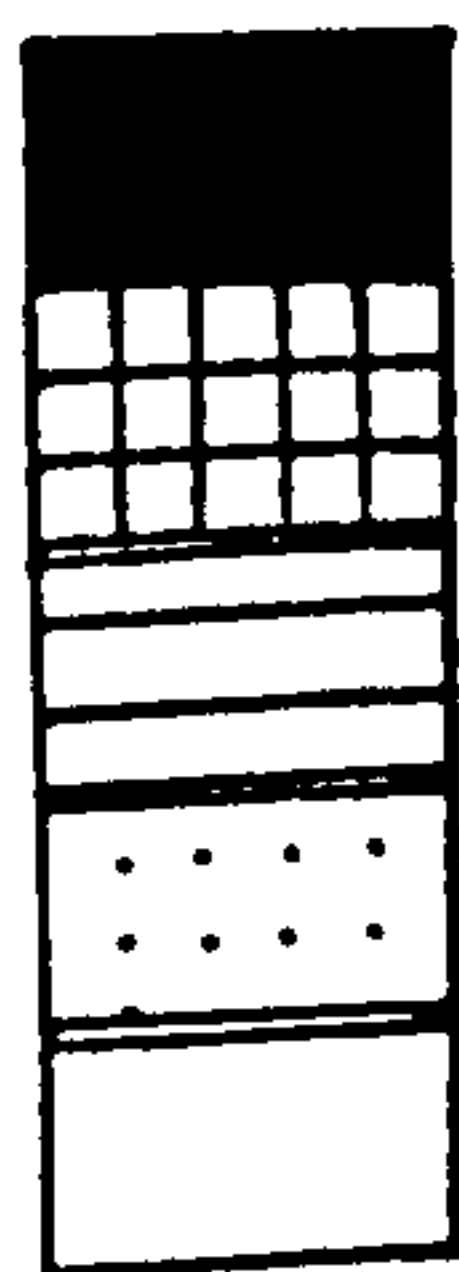
The areas which receive adequate rainfall are in three areas: the area around Mts. Kilimanjaro and Meru; Pare Range Mts. and the Mbulu highlands, with a mean annual rainfall of between 800-1400 mm. These are the same areas with the highest concentration of agricultural activity and settlements. On the other hand, the remaining vast areas receive a mean annual rainfall of between 600-800 mm with the Masai area receiving annual rainfall below 600 mm. (See Rainfall Map).

B. TEMPERATURES

The temperature pattern in the region almost fluctuates with the rainfall. As such we find that the highest temperatures (max. 26-28°C in the case of Arusha and 30-33°C in the case of Moshi) are recorded in the period between November and February which is the dry season.

Mean Annual Rainfall

MAP 6

KEY

Over 1400 MM

1000 - 1400

800 - 1000

600 - 800

Below 600

During the wet season, April to July and October/November, temperatures are much lower - with a maximum of 21-25°C and a minimum of 13-17°C in Arusha and a maximum of 25-28°C and a minimum of 15-17°C in the case of Moshi. Diurnal variation in temperatures generally, is small.

Again, the areas in the highlands and near the lakes have ideal temperatures for agriculture and other activities.

SUMMARY

THE PHYSICAL GEOGRAPHY OF THE REGION.

To conclude, it is thus apparent that topography (soils and vegetation) and climate (temperature and rainfall) have combined to influence the present pattern of development of the region. Three zones of development emerge:-

The Highland Zone around Mts. Meru and Kilimanjaro has good volcanic soils, adequate rainfall and plenty of water. It is intensively farmed and settled with land shortage and population overcrowding being the current problems. Among the crops suited and grown in this area include bananas, maize and beans (staple food crops), and coffee, a cash crop.

The second zone is the Mbulu Highland area including also the area around Oldeani. This area too, is endowed with moderate climate, moderate rainfall, relatively rich soils and good vegetation. Crops grown here are maize, wheat and coffee. At the moment the area is moderately settled and has still got a lot of agricultural potential since some of the land is still unused.

Lastly, comes the remaining area, which is almost two-thirds of the total area of the region. This is the Masai Steppe area, the Mkomazi Plains and the Serengeti (part of). This zone has poor soils, poor vegetation cover and low

rainfall. Its only suitable use is grazing both for the Masai domestic cattle and the wild animals which are in the national parks located there.

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Dar-Es-Salaam.
2. Calton, W.E. 'An experimental pedological map of
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conference, Leopoldville, 1954, pp. 237-40.
3. Scott, R.M. 'The soils of East Africa', pp. 67-76 in
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CHAPTER TWO

THE REGIONAL ECONOMY AND ITS PLACE IN THE NATION

2.1 The Regional Economic Base

The economy of the region rests on a narrow economic base, characterised by relatively slow growth especially in the dry, remote areas.

The economy is based on agricultural production, with much of the money coming from the sale of the main cash crops - coffee, sugar, wheat, sisal etc. and on manufacturing industries, - the majority of which are engaged in the processing of the region's agricultural products. For food, the region thrives mainly on bananas, maize, beans and meat, which are products produced in the region.

For purposes of analysis, the economic activities of the region have been divided into those industries producing for the export market (basic) and those producing for the local market (non-basic). Forestry, mining and related manufacturing activities are definitely basic industries. Agriculture is both basic and a non-basic industry. In addition, the service category of hotels, restaurants etc. has also been considered basic and representative of the tourist industry. Transportation, communications and utilities have also been considered as a non-basic activity. All other sectors have been considered as non-basic.

The region relies very heavily upon its basic industries - agriculture and agriculture-based industries, forestry and tourism. The importance of these to the region cannot be overestimated.

The development in these basic economic activities will of course influence and encourage development in the non-basic activities of the region. It is anticipated that, with a well-established and steadily growing basic sector, other economic activities should begin to develop at a faster rate. This is especially true of manufacturing activities and the service industries.

Although a continuing increase in the output of the basic industries is expected, the increase in employment will be much lower. If the region is to have a reasonable growth rate, alternative opportunities for employment must be found. These might include the encouragement of further processing of primary products within the region and the establishment of industries to support the export of basic industries.

2.2 Regional Income (G.D.P.) - 1967

In terms of per capita gross domestic product, this region is one of the wealthiest areas in Tanzania with the region having an average of 592/- per inhabitant (Kilimanjaro has 650/- and Arusha 534/-) (1967). This figure was only superceded by that of Tanga and Coast regions. On the whole, the earnings are well above the national average figure of about 478/-. This has been the case because of the high agricultural output of this region particularly from the Arusha and Moshi districts; high industrial output from the industries located in Moshi and Arusha and lastly from tourism which brings in about half of the total national tourist income. The distribution of income however, is very uneven, Arusha District - and, in particular, Arusha town - contributes a very high proportion. Arusha district probably has a per capita product approaching shs. 1,000, while Masai district

probably has a per capita product of less than shs. 300. This disparity in per capita product between districts is also true in the Kilimanjaro area where, Moshi and Rombo districts have a per capita product of shs. 740 compared to that of Pare district which is 360/-. (See table on GDP - 1963 & 1967).

On the whole, the estimated gross regional product for 1967, was 746 million shillings. This is 13.20% of the National Product. The only region which produced a higher income was understandably, Dar City with its GRP of 1,149 mil. shillings (1967). Although no current figures are available, it is obvious that the GRP has been rising gradually as more and more industries have been established in the region. In 1967, the highest contributor to the above GRP was Agriculture, 462 mil. shillings, followed by commerce 85 mil. shs., and services, 75 mil. shs. The lowest contributors were mining, public utilities and transport¹. (See Table 2 - Estimated Gross Regional Product - 1967 by Districts).

TABLE 1

GROSS DOMESTIC PRODUCT

District	M11./Shs.					
	Monetary Agriculture	Secondary & Tertiary Sector (Sub Total)	Rents	Total Monetary	Sub Total	Total GDP
shs./Inhabitant						
<hr/>						
Arusha Region						
ARUSHA	62.5	153.7	12.3	166.0	28.3	194.3
MASAI	12.4	13.8	1.1	14.9	14.2	29.1
MBULU	37.2	54.3	4.3	58.6	39.3	97.9
a) Region 1967	111.18	221.5	17.7	239.2	81.9	321.1
b) Region 1963	102.6	187.0	9.1	196.1	84.8	280.1
<hr/>						
Kilimanjaro Region						
KILI & ROMBO	170.8	383.1	22.6	305.9	68.1	273.8
PAKE	13.2	32.2	2.6	34.8	20.4	55.2
a) Region 1967	184.2	315.5	25.2	340.7	88.5	429.2
b) Region 1963	163.0	256.0	20.0	276.0	84.0	360.0
<hr/>						
NORTHERN REGION						
a) 1967	302.38	537.0	42.9	579.9	170.4	750.3
b) 1963	265.60	443.0	29.1	472.1	88.8	640.9
<hr/>						
TANZANIA						
a) 1967	1360	3800	300	4100	1580	5680
b) 1963	1200	2880	170	3050	1750	4800

Source: District Data, 1967, pg. 4, 9, 80, Ministry of Economic Affairs and Development Planning,
Government Printer, Dar City, 1967.

(a) Agriculture

The mainstay of the region is agriculture, with the major crops being coffee. In 1967, the region was among the top three in the national production of agricultural produce. Within the region, agriculture and its related services and activities accounted for 60.3% of the Gross Domestic Product. Over 60% of marketed agricultural product (excluding livestock) came from Arusha and Kilimanjaro districts, which are two of the most densely populated districts in the country and suffer from acute land shortage.

Although several minor crops are produced, agriculture is at present dominated by coffee, of which about 60% is produced from estates and the remainder by smallholders. The Kilimanjaro area (Moshi and Rombo districts) produces over 40% of the national output. Further expansion is not planned because of the international coffee market situation at the moment. Significant quantities of other cash and food crops are grown including: wheat, sugar, bananas, sisal etc. In the lower slopes of Mt. Kilimanjaro where conditions are drier, we find cotton and sisal estates predominating.

Arusha district resembles neighbouring Moshi district more closely than the other districts of Arusha adm. region, which because of the much lower rainfall, have different economies. Masai district, which has a population density of only four persons per square mile, is almost entirely dependent on livestock; and the quality and sales of animals are low, although improvements are being attempted by range management and the provision of water supplies. Mbulu and Hanang districts - where the water shortage is less acute,

have a denser population and much higher agricultural production (wheat and coffee).

b) Other Sectors

As far as Forestry is concerned, there are valuable reserves, in Kilimanjaro, Arusha and Rombo districts and are an important source of income. In 1967, the income from forestry in the region was 4.1 mil. shs. out of a total income of 750.3 mil. shs.

The region's game reserves contribute an important part of the regional income through money spent by tourists. Arusha, being the gateway to the Northern Tourist Circuit, handles thousands of tourists from various parts of the world who pass through the town on their way to and from the national parks in the region (Serengeti, Manyara, Arusha, Tarangire and Kilimanjaro). Tourist earnings in 1967 amounted to 26.2 mil. shs. out of Tanzania total of 60.9 mil. (43%).

Manufacturing and construction, which accounted for an average of 8% of the region's total 1967 GDP., include a wide range of local agricultural processing and consumer goods industries. Compared with other regions in Tanzania, the region is one of the top few with high manufacturing produce with Arusha's share of the nation's output standing at 6.3% whereas that of Kilimanjaro is 3.5%. This was only surpassed by Coast - 12.5%; Dar - 16.4%; and towns like Tabora and Tanga which had 5.7% and 5.5% respectively.

In this region, almost all industrial activity is in the two main towns: (a) Arusha town - which is rapidly becoming a major industrial, commercial and administrative and tourist centre for all of East Africa. Its growth rate is already higher than that of any other town in the country and it is

likely to increase in the future. b) The other centre is Moshi. Although smaller than Arusha and of slower growth, it is becoming a major urban centre. It is also important as a tourist centre.

Prospects for further industrial development in this region are promising because of the following reasons: The cool and moderate climate induces various industries to locate here; secondly, there is a lot of surplus labour; thirdly, raw materials are in abundance and fourthly, new infrastructure like the new Kilimanjaro International Airport will facilitate easier movement of goods.

The contribution of commerce to the GDP in the region is high, with Arusha having 13.5% (second only to agriculture) and Kilimanjaro 3.5%. Arusha's contribution ranks third in the whole country after Tanga and Dar es Salaam. Prospects for the future are good as more money flows into the region through tourism and as more people become more affluent.

Mining has very little significance in this region; The only mineral of importance in the region is meerschauum - used for making smoking pipes.

To sum up we therefore see that although the region has a narrow economic base, its contribution to the national income is very high and future prospects are encouraging. Agriculture, tourism and industry will continue being the main sectors of the economy and if future investment is directed to these sectors, then GDP will rise even higher. An urgent task is to reduce the district disparity in GDP revealed in this chapter.

REFERENCES

1. Tanzania 2 Five Year Plan, Vol. III, pg. 17, op. cit.

CHAPTER 3

REGIONAL LAND USE

In the region, there are basically two land uses: agricultural land use and non-agricultural land use which incorporates forests, urban use, rocky or swampy areas etc. These land uses are summarised in a map form (Map 7). This regional land use map is a basic document for regional planning since all forward planning must start from a knowledge of the existing land use pattern.

3.1 Agricultural land use is the greatest occupier of land in the region and this is divided into the following categories:-

Smallholder Cultivation

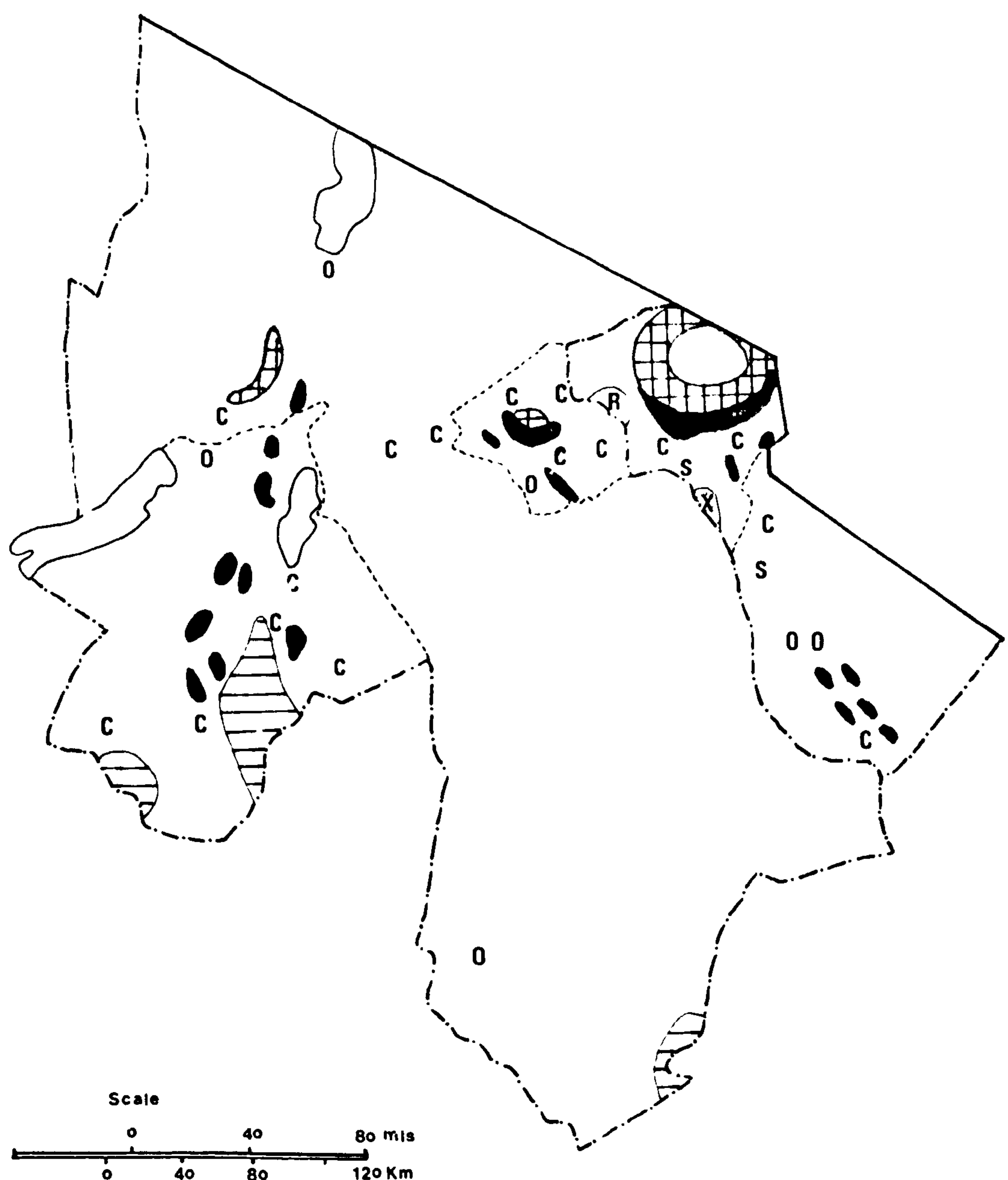
This is very predominant in the Kilimanjaro, Arusha, Pare and Mbulu areas; where farms vary from one to ten acres. Ownership of such farms is confined mostly to African peasant farmers who derive most of their livelihood from the land. The crops grown here include maize, beans, cassava, bananas, vegetables, coffee, wheat and an assortment of various other root crops - e.g. sweet potatoes etc.

Rough Grazing



Rough grazing land occupies most of Masailand and parts of Mbulu and Pare districts. This land is used for grazing because of its short grass, poor soils and lack of adequate rains. Large herds are kept by the Masai who still count their wealth by the size of their herd. Recently, the Masai have been coerced into participating in arable farming so that they can settle down in one place and form a thriving community. Although this experiment was slow to catch up, prospects for the future are encouraging especially as the

Regional Land Use

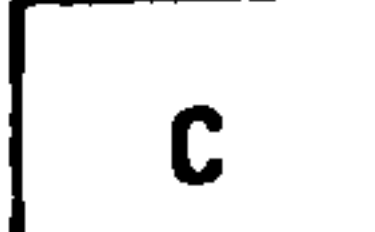


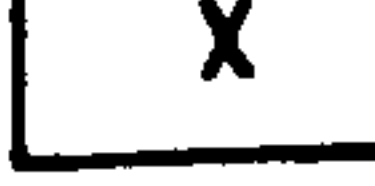
MAP 7.




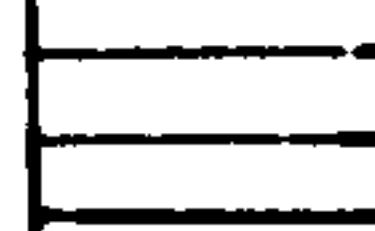

Agricultural land use

-  Smallholder cultivation
-  Rough grazing land

Large Scale Commercial Agriculture

-  Coffee
-  Sisal
-  NDC Ranches
-  Sugar

Non-Agricultural Land Use

-  High altitude forests
-  Other woods & forests
-  Other uses

Ujamaa Movement spreads into this area.

In addition, this rough grazing land is the home of the vast wildlife of the region protected in the national parks of Arusha, Kilimanjaro, Tarangire, Manyara, Ngorongoro, and Serengeti; not forgetting the Mkomazi game reserve.

Large Scale Agriculture

This land is concentrated mostly in the Arusha and Kilimanjaro area; and also in Mbulu. Among the crops grown on large scale cultivation are: coffee, sugar estates, and wheat estates (For individual acreage see table). There are also National Development Ranches occupying 32,600 hectares established in West Kilimanjaro. Overall, large scale agriculture occupies 13.8% of the land in Kilimanjaro admin. region, and 7.3% in Arusha. Until very recently, most of these farms were owned by foreigners, the majority of whom were Europeans, but now the government has started to buy these farms and divide them up into small farms run by the natives through the co-operative system.

3.2 Land not in Agricultural Use

Forestry

High altitude forest, occupies 8,750 hectares (3%) in Arusha district; 46,250 hectares (7% of District) in Mbulu district; 811,625 hectares or 22% of the Kilimanjaro district. The forest area around Mt. Kilimanjaro now forms part of the newly declared national park around the mountain.

Other Woods Forest

Such forests are concentrated in Mbulu district occupying 270,000 hectares or 17% of the District.

Other Land Uses

These include urban land use, rocky areas, swamps etc.

and occupy 5,120 hec (1.7% of district) in Arusha district encompassing Arusha town; 10,240 hec (0.2%) in Masai district and 12,500 hec (0.8%) in Mbulu district.

In the Kilimanjaro area, we find 77,560 ha. (14.8%) some of which is occupied by the towns of Moshi, Kahe and Taveta and part of the mountain which has no vegetation; and in the Pare district this land use takes only 2,500 hec (0.3) of the district occupied by the main town of Same and some of the rugged mountain terrain of the Pare Mt. Ranges.

The table below gives a summary of the regional land use and shows how development is concentrated on only a third of the region, with the remaining two-thirds of the country used as national parks or just plain rough grazing land and other smaller uses. (See separate table, page 33).

3.3 II A sub-division of the Region into Rural Economic Zones

Having looked at the general regional land use, an attempt is now made to divide the region into Rural Economic Zones based on work by L. Berry¹.

Because the district is the lowest clearly defined administrative unit, it has been used as primary division of the region and the various districts into not more than four rural economic zones.

This division has been made on a variety of criteria but mainly on population density, ecology and agricultural products. The criteria for the zones are not strictly comparable from district to district except for the qualitative description of population density. The terms used are Dense (over 60 per sq. km. 155 per sq. ml.); Scattered (15.60 per sq. ml.) and Sparse (7.5 per sq. km., 20 per sq. ml.).

TABLE 3

LAND USE BY DISTRICTS IN THE NORTHERN REGION

LAND IN AGRICULTURAL USE

REGION District	SMALLHOLDER CULTIVATION		ROUGH GRAZING LAND		LARGE SCALE AGRICULTURE							Total Large Scale Use	
					%	Coffee hecs.	Tea Est- ates hecs	Sugar Est- ates hecs	Sisal Est- ates hecs	Spice Est- ates hecs	Wheat Est- ates hecs	NDC Ranch hecs	%
ARUSHA													
Arusha	49230	16.7	210288	71.4		6250			14052	770		21072	7.2
Masai	17500	0.3	6159760	98.8									
Mbulu	74430	4.7	1228270	77.4						2000		2000	0.1
KILIMANJARO													
Kiliman- jaro	78218	14.9	197890	37.7		7500		5000	5000	4582	3280	54882	10.5
Pare	30000	3.8	738300	94.6					10000			10000	1.3

LAND NOT IN AGRICULTURAL USE					TOTAL LAND USE		
REGION District	HIGH ALTITUDE FOREST hecs	%	OTHER WOODS FOREST hecs	%	OTHER URBAN ROCKY AREAS, SWAMPS hecs.	%	ACRES
ARUSHA							
Arusha	8750	3.0			5120	1.7	733205
Masai	46250	0.7			10240	0.2	15522037
Mbulu			270000	17.9	12500	0.8	3952128
KILIMANJARO							
Kiliman- jaro	116250	22.2			77560	14.8	1306752
Pare			2500	0.3			1944192

3.4 A Division of the Region into District Economic Zones (Rural)

In this attempt at differentiating between types of rural economy in the region, 'rural economy' is taken to refer specifically to the major economic sectors of the rural areas, namely crop and livestock farming. Furthermore, only the marketed (export and domestic) products of these activities have been entered into the analysis. There are many reasons for this, the most obvious being the lack of reliable statistics relating to the value of production in the subsistence sectors. In fact, availability of a reasonable degree of reliability has largely determined the criteria used in this classification². This produces the classification as follows:

1. High Income/High Population Density

In the region, this is composed of Kilimanjaro, Arusha - Meru areas. It is the rich zone of the region, in which coffee, grown on small and medium size units, is the leading export crop. In quantity as well as value Kilimanjaro's crop is three times greater than Arusha's. Sugar is also an important product of the former but less so of the latter. Both districts show certain similarities in the variety of minor export crops and in those earmarked for the domestic market. Included among the former are sisal, pyrethrum and beans, and among the latter maize, bananas, wheat, millet and vegetables.

2. Medium Income/Medium Population Density - Mbulu District.

Productive highland district, though considerably less wealthy than the first group. The main export crops here are coffee and pyrethrum. Other crops include wheat and sisal and seed beans. Wheat is the predominant domestic crop,

the production of which is only slightly less than that of coffee. This helps to explain why domestic crop sales are as high as 50% of Mbulu's total crop income.

Pare District

This is another medium income/medium population density area, with main export crops being coffee and sisal. The domestic crops are similar to those in zone one.

3. Medium Income/Low Population Density - Masai District.

This district stands out as the only area in Tanzania among the medium income group in which livestock (cattle) sales contribute over 20% of district agricultural income. Of crops marketed 55% of the value comes from export products including seed beans, coffee and cotton. The remaining 45% is obtained from locally sold food crops which are therefore very important to the district economy. Among these are: wheat, maize, beans, bananas, millet, vegetables and onions.

The advantage of the above classification and the map is that it identifies the relative importance of the commercial or market element in the district agricultural economies and variations in agricultural incomes, and relates these to population distribution and densities to obtain more realistic income indices. Moreover, by correlating this map with others showing environmental conditions, especially rainfall distribution, transportation routes, distribution of towns, livestock densities and so on, further inferences may be drawn about variations in development potential from district to district.

REFERENCES

1. Len Berry, "A Preliminary Sub-Division of Districts into Rural Economic Zones : A Map with a Key". Bureau of Research and Land Use Planning Unit. Research Notes, No. 4, Dar es Salaam University.
2. The Main components of the classification system are:
 - A. Agricultural Income per capita (vertical lines) and
 - B. Population Density per sq. mile (Horizontal lines).Each divided into 3 orders high; Medium and Low.

CHAPTER 4

AGRICULTURE AND ANIMAL HUSBANDRY IN THE REGION

4.0 Introduction

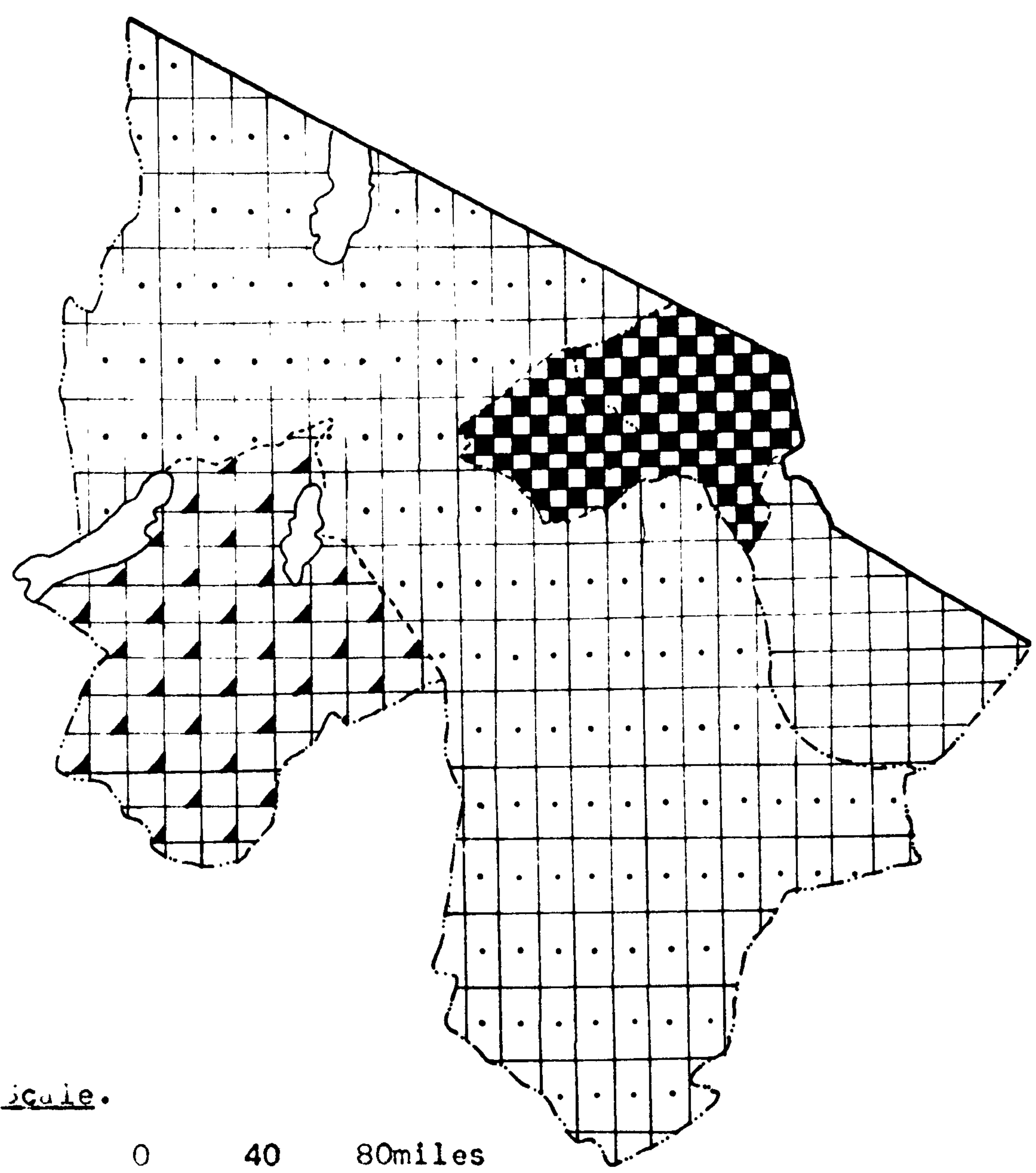
Agriculture is undisputably the backbone of Tanzania's economic construction and its product, the nucleus of life. This activity at the moment involves 94% of the population and accounts for just over 80% of Tanzania's foreign exchange earnings. Its contribution to the Gross National Product (GNP) is estimated to be 38%¹.

As in most developing countries, Tanzania's agriculture is predominantly peasant dominated, especially in the food crop sub-sector. Estate or large farm production embraces the production of sisal, sugar and tea and some coffee and wheat. Smallholder peasant production covers cotton, pyrethrum, coffee, oilseeds and most of the food crops such as maize, paddy and millet. Tanzania's land-holdings were under two hectares, fifty percent being under one hectare.

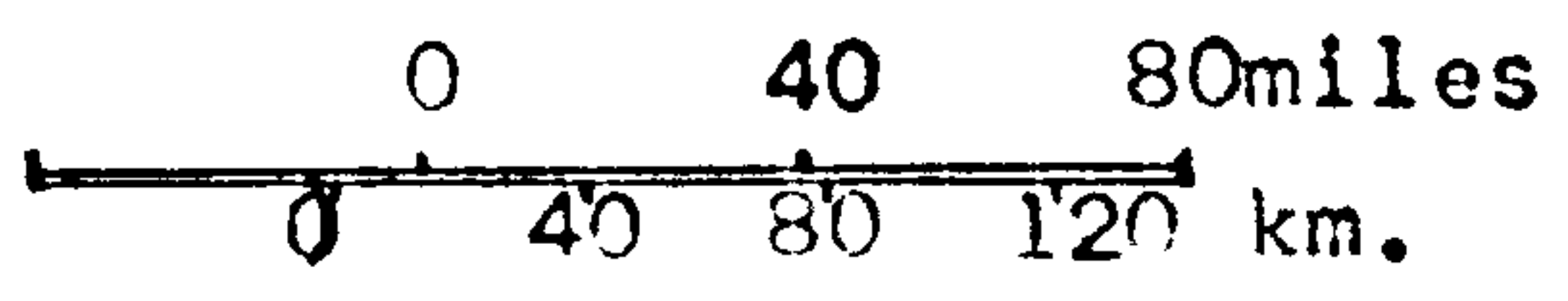
There is no doubt that agriculture in Tanzania is predominantly characterised by subsistence production on small scattered plots utilising poor husbandry practices and almost no agricultural inputs. Large scale modernised production is limited to a few cash crops, such as sisal, coffee and tea. Historically from the pre-independence period and only until recently after independence greater emphasis was placed on the production of cash crops. Only limited investment, research and extension resources has been directed towards food production. The emphasis on the production of raw materials for metropolitan industries and tropical cash crops, especially in the large farm sector, has been at the expense of development of food production by the small peasant producer.

TYPES OF RURAL ECONOMY









MAP 8 .



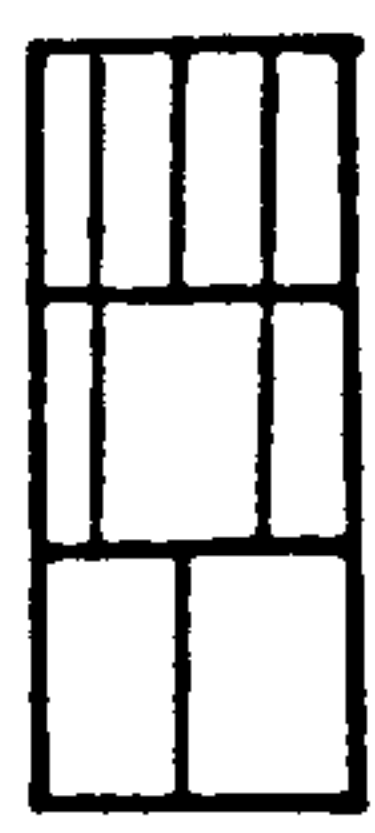
Scale.



TYPES OF RURAL ECONOMY.

	HIGH INCOME/HIGH POP. DENSITY.
	MEDIUM INCOME/MEDIUM POP. DENSITY. (Mbulu d)
	MEDIUM INCOME/MEDIUM POP. DENSITY (Pare d).
	MEDIUM INCOME/ LOW POP. DENSITY (Masai d.)
	POP. DENSITY (per sqMl)
	Over 90
	36-39
	under 35

shs (EA)
AGR'L INCOME.(per capita)



Over 120
71-120
under 70

% of NATIONAL AGR'L WAGE LABOUR FORCE.



5-10
2-4



LIVESTOCK SALES AS A % OF
26-45. OF AGR'L INCOME (District)

However, the Arusha Declaration of 1967 tried to remedy this by redirecting the emphasis of Tanzania's development towards agriculture and stressed that government investment should favour improvements in rural areas rather than industrialisation in the towns, with special emphasis on processing of cotton, sisal and coffee rather than exporting raw commodities.

Agriculture in the Northern Region is very important, for it is the highest contributor to the GNP and employs the bulk of the people in this region. The main cash crops are coffee, sisal, cotton and wheat, supplemented by some food crops such as maize, millet, bananas etc.

A modern agricultural economy is the foundation upon which all plans for infrastructural development and urban growth in this region must be built. In addition, the development of agriculture in the region will determine more closely the evaluation of agro-ecological conditions, the economic state, the intensive production and the possible adjustment to the market requirements. An examination of the agricultural potential of the region is therefore essential.

This chapter briefly describes the present agricultural land use of the region; main crops grown; the place of agriculture in the economy of the region; agricultural services and the concept of the physical development of the agricultural land in the region.

4.1 Agricultural Land Use

In physical planning for agriculture the key and most essential element is the available arable land. This is the most important element and it is very significant. Another important element is the labour force needed in agriculture.

However, the element of labour force is almost equally or even at a higher degree present in other activities. The concept of the production orientation of agriculture in any physical plan prepared for the long range must be taken as an assumed category of the optimum production, due to the complex factors influencing the agriculture of the nation and that of the whole world (national priorities, subversions, investments, tax immunities, complicated set of national and international market).

Exploitation of the agricultural land

As in the case of Tanzania as a whole, the agriculture practiced in this region is small-scale production based on small scattered plots utilising fairly elementary husbandry practices. As table 4 shows, 88.5% of the total region land area of 95,300 sq. km. is used for agriculture of one type or another, with the rest of the land being used for forests. Out of this area, 5% is under smallholder cultivation mostly centred in the Kilimanjaro, and Meru area; 2.6% is large scale farming area (W. Kilimanjaro, Moru and Mbulu District); +81.9% under rough grazing covering the whole of Masai land and parts of Mbulu, Pare and Kilimanjaro Districts².

Most of the rough grazing land is mainly dry grassland or wooded grassland found mainly on the vast Masailand and Mbulu plains. These areas are unsuitable for other agricultural use because they receive low rainfall. Apart from grazing domestic animals, vast tracts of this land is land demarcated for game reserves and national parks - totalling about 6,615 sq. miles.

Table 4. AGRICULTURAL LAND USE

Ad. Region	Small holder Cult'n Sq. Km.	% of region	Large Scale Agr. Sq. Km.	% of Reg.	Rough Graz. Sq. Km.	%	Total Agric. Sq. Km.	%	Total Area
Arusha R.	1,400	1.7	250	0.3	76300	92.9	77950	94.9	82100
Kil. Reg.	1,100	8.3	650	4.9	9350	70.9	11000	84.1	13200
Northern R.	2,500	5.0	900	2.6	85650	81.9	88950	88.5	95300
Tanzania	38,800	4.4	5850	0.7	442450	50.1	487100	55.2	883600

Source: Statistical Abstract, 1970 Op. cit. pp. 3, Table 4.

Then there is the medium potential land capable of producing coffee, cotton, millet and livestock. Such land is found in the lower Pare Plains, Mbulu and some parts of Arusha region.

The remainder, which is only 8%, is the only high potential land capable of producing coffee, maize, wheat and sugar. This area supports a lot of people. This land is mainly on the lower slopes of Mt. Kilimanjaro and Meru and on the slopes of the Pare Highlands and Mbulu. On this high potential land, on the lower altitudes, two crops per year can be obtained.

In respect of the high potential land, there are sociological difficulties hampering its maximum exploitation such as tribal disinclination to engage in arable farming, while in the other areas a maximum expenditure on infrastructural development such as all-weather roads, crop storage and marketing facilities and processing plants are necessary for the area's full potential to be developed. Tsetse fly infestation and a lack of market opportunities result in land not being fully utilised to its full advantage in certain parts of the region. Land overcrowding in the Arusha/Kilimanjaro Districts has caused many adult males to leave the region for urban employment. Within the next 30 years, the pressure of population upon the land in this area will become intolerable if action is not taken to encourage movement from this zone.

All areas, however, have unexploited potential which can be developed by the use of more fertiliser, better seeds and better farming techniques. Account of this must be taken when assessing the potential number of people who can be

directly supported by the farm economy. The income gradient between the urban and rural areas in the region will tend to cause a movement of population from the rural areas to the towns and the higher the average income of the urban dweller rises, the higher must be the farmer's income if this movement is not to become excessive. At first this increase in farm income will largely be met by increasing rural productivity but as Tanzania's economy develops average farm size will inevitably have to increase to enable the farmer to derive a standard of living comparable with that of his urban brother. Thus in the long run, it must be expected that the rural economy will directly support fewer people than it does now, but at a much higher standard of living.

4.2 Concept of Production Orientation: The Farming Pattern Topography and its effect on Agriculture

The existing production structure of the region is basically adjusted to the ecological conditions: Coffee, bananas and maize are the main crops grown on the fertile, well-watered slopes of Mt. Kilimanjaro. The relative importance of each crop depends on the altitude at which it is grown and, therefore, on the amount of rainfall. Below the forest belt it is mainly beans, maize and bananas that are grown; following this there is a broad belt, particularly important commercially, of coffee and banana farming, with banana predominating in densely populated areas. Maize is grown on the lower slopes, where there is less rain. Other commercial crops include cotton and sisal.

This pattern is repeated on the slopes of Mt. Meru with the Wameru practicing a nearly similar method of cultivation.

On the other hand, in Mbulu district, where the land is at a lower altitude but higher than the Masai Steppe, the land receives more rain and the soils are better. Here the main crops are maize, wheat and millet.

In the Masai Steppes the vast plains receive very much less rain, and thus the vegetation is poor and hence ideal only for grazing. Very little other agriculture is practiced here.

The Farming Pattern

a) Smallholder Cultivation

The farming pattern depends on the weather, soils and the way the people have been carrying on their activities. The following is a brief description of the method of the smallholder farming system practiced on the slopes of Mt. Meru and Kilimanjaro where we find the bulk of the people. On these fertile, and well-watered slopes we find coffee, bananas and maize as main crops grown here. In the course of five decades an important and particularly interesting farming system has developed in this coffee-banana belt. These are small farms of between 1 and 4 acres, on which coffee and bananas are grown in mixed stands. In addition, a few miles lower down the mountain these farmers cultivate a plot of maize. Most of the farmers keep some cattle and goats stabled throughout the year. With the increase in population, the previously communal grasslands has been broken up to be replaced by coffee and banana³.

The animals are fed with the leaves and stalks of bananas. Grass and hay is brought from the lower steppe, the women carrying bundles of it on their heads for miles. The goats

feed on the leaves of hedges surrounding each holding. The purpose of this system of animal husbandry is to obtain manure.

The various farm activities are integrated to a remarkable degree. Bananas supply food, the raw material of beer, some cash, fodder for cattle and mulching material. The manure for both coffee and bananas comes from the cattle, which also supply animal proteins. As an example an area in Machame in Moshi has been studied by Beck who produces a breakdown of the land use as given on the table below⁴.

Table 5. Organisation of Coffee/Banana Farm at M. Kilimanjaro.

Machame Central Area - 1961

Number of Farms	100	<u>Economic Returns. Shs/farm.</u>	
Size of Family	7.5	Coffee	723
		Bananas	337
Livestock units per F'ml.	0.2	Other crops	120
<u>Land use per Farm</u>		<u>Home consumption</u>	<u>700</u>
Total area cult'ed	3.2 acres	Total gross returns	1880
		Expenses (without wages)	457
Thereof Coffee	2.7	Family Income	1323
Bananas	2.5	Wages for non-family labour	325
Beans	1.2	Non-agric'l Income	465
Maize	1.8		
Other crops	0.2	Family Income	1463
Mixed cropping of coffee and bananas on	2.2 acres		
Coffee trees pre farm	845		

Source: Beck, op. cit., 1963.

As everywhere in Tanzania, correct methods of farming on the coffee-banana farms of the Wachagga and Maru could lead to a cheap and marked rise in production. The crop yield, could improve with better farming methods, use of insecticides and mineral fertilisers which are now finding greater use today in this area.

Worthy of note, too, are the beginnings of a rational milk production. The price of coffee has resulted in a greater demand for milk. Some farmers are buying Jersey cows from the estates or from the Agricultural Dept.'s experimental farms in order to sell milk to their neighbours. The annual yield per exotic cow lies between 300-600 gallons. Some farmers now grow grass for the cows and buy bran or pyrethrum cake - All this is in an effort to increase milk production.

As for the other smallholder farmers in other areas in the region, farming activities are carried on in this small scale manner, though they are not as organised as in the case above. The problem is that some of the farmers grow just enough for their own use and in many seasons they do not get any surplus to sell for cash to buy other products e.g. consumer durable goods. Very little investment is put in the land and modern methods of farming or animal husbandry are in some places non-existent.

B. Large-Scale Agriculture

The practice of large scale farming in the region is confined to the cultivation of coffee, wheat, sugar and cotton in the suitable areas. This takes 0.3% of the total land area in Arusha admin. region containing mostly coffee, sisal and wheat. In Kilimanjaro, large-scale agriculture occupies 4.9% of the land, growing coffee around the mountain; sugar in Arusha Chini; sisal on the lower plains and wheat in West Kilimanjaro.

These farms are large, mechanised and employ people in the various activities of the farm. Because of mechanisation and great financial investment by the owners, crop production is great and so the financial returns are good too.

In the past the majority of these farms belonged to foreigners especially Dutch, British, Asians and Greeks but now the government has started to take them over and pass them to the natives who run them co-operatively. The effect of this practice on the mode of farming, output and income from these farms is too early to assess and only time will tell.

C. Ujamaa Farms

Tanzania's strategy for the modernisation and uplifting of her agricultural sector is based on the amalgamation of individual peasant holdings into communally owned large-scale co-operative farms - 'Ujamaa Farms'. To facilitate this programme and the provision of social services the scattered small-scale farmers are being moved into villages. In this region only a small percentage of the people have actually moved into Ujamaa villages although in Tanzania it is estimated that there are now 6 million people or nearly 45% of the rural population living in these villages. It is now official policy to "villagise" the entire rural population as soon as practicable (Government Target 1976).

The need for large-scale production is being met by establishing various forms of State Farms, for instance sisal, sugar and wheat, operated by parastatal organisations. These parastatal organisations can undertake joint ventures with Overseas investors, be they individuals, private companies, or corporations, such as the Commonwealth Development Corporation.

The Ujamaa strategy is based on the concept of a large farm owned not by an individual, but by those who till the land. In this way the peasant farmers in an ujamaa village are able to learn modern agricultural methods by practical

involvement. In this way the limited agricultural extension advice can reach a large percentage of the farming community. Besides being just an agricultural production unit the ujamaa village is a village-based agro-economic enterprise that uplifts the peasants from purely subsistence production to commercial production.

At present, most of the villages are in the area between Moshi and Arusha towns and a few are in Mbulu and Masailand. Agricultural production from these villages has taken a long time to build up but this is expected to rise in the future as more villages are established and as more modern methods are adopted.

The establishment of ujamaa villages and State farms is being carried out in a way that they can be complimentary to one another. The state farms in the region are mostly in W. Kilimanjaro and Mbulu. These farms are now being programmed to have excess mechanisation capacity to hire out to ujamaa villages at economic or subsidised rates. At the same time state farms are in a position to provide extension and management advice to ujamaa villages. Both systems are progressive socialist methods of production and are in accordance with Tanzania's declared policy of socialism and self-reliance.

4.3 THE MAIN CROPS OF THE REGION

The main crops grown in the region fall into two main classes: cash crops, including coffee, cotton, wheat, sisal, sugar etc., and food crops - maize, bananas, beans, vegetables etc.

4.3.1 CASH CROPS

a) Coffee

For a long time coffee has been, and will be, a major

crop in much of this region. It is mostly grown in the Arusha/Kilimanjaro districts and also in some parts of Pare and Mbulu districts. It is grown both on estates and smallholdings. It requires intensive cultivation and is therefore very suitable for smallholder cultivation.

It is the second major export of the country and first in terms of gross output value. The type of coffee grown here is "Arabica" which requires lower temperatures than the "Robusta" grown mostly in the Central Lake Regions.

Originally coffee was an exclusively estate crop but now about 60% is produced on estates in Arusha and 40% in Kilimanjaro; the remainder by smallholders. As seen earlier, the coffee farms are interplanted with such crops like bananas and beans. Yields on the smallholdings are low compared with those on the estates in spite of work done by the Agricultural Extension Service. Up to the present increased production has come from increased area rather than larger yields, but improved husbandry techniques are now becoming effective.

It is increasingly common for the processing to be done at the pulperies and the curing to be done at the curing works located in Moshi town handled by the main co-operative union which is responsible for buying the coffee from the farmers and sell it abroad.

Production of coffee and hence the value have been fluctuating over a period of ten years. The output of coffee in 1966, for example was 36,483 tons (59.4% of total Tanzania output) and in 1969 this had come down to 23,663 tons. Since then production started to increase slowly and in 1970 this

had reached 33,422 tons. Kilimanjaro produces twice as much coffee as Arusha. Even here production has been fluctuating from 23,838 in 1966 down to 19,980 in 1972 and up to 22,850 tons in 1974⁶.

The value of coffee unfortunately has been going down over the years. In 1966, coffee earned 140,400,000 Shs. for the region, but by 1967, this had fallen to 78,100,000 Shs. due to a drop in the world prices and a drop in production too. In the Kilimanjaro region the value in 1966 was 100 mil. shs. but this fell to 54.09 mil. in 1970. However, the situation improved slightly in 1971 when the coffee output rose to 82.62 mil. shs. Since then the value has been rising slowly as coffee prices in the world market have picked up again.

Due to the decline in coffee prices, some farmers whose sole cash crop is coffee have suffered a decline in incomes and now have started to diversify - grow other crops instead of coffee. The majority of them now keep good and high grade cattle for milk⁷.

The international market position with its quotas for each country has meant that no further new areas will be opened for coffee in the region. The emphasis must be on improving quality with the use of fungicides, insecticides and better storage and processing facilities.

Another great threat to the income of the coffee growers has been the outbreak of Coffee Berry Disease (CBD), which since 1961 has reached epidemic proportions in many areas. It is evident that if steps to control the disease are not taken quickly the farmers will continue to suffer a decreasing crop yield. Among the insecticides now being used include: sumithion, dieldrin and methylene to get rid of the coffee ailments such as leaf minor and thrips.

b) Sisal

Sisal is grown mostly in Arusha district where it occupies an area of 14,052 hectares, then in Pare 10,000 hectares and in Kilimanjaro district where it occupies 5,000 hectares. The total output of sisal from this region (19,188 tons in 1967) is only about 8.8% of the total Tanzania production which comes mostly along the Tanga railway line and the area near Morogoro.

It is a crop requiring low rainfall and shallow calcareous soils and hence it is found mostly in the low plains of the region.

Until recently the cultivation of sisal was based on the plantation system. Estates were essentially capitalistic enterprises whose ownership was almost entirely in foreign hands. Greeks commanded about a third of the production, British and Asians a quarter, while the Swiss and Dutch controlled about six percent.

In 1967, through nationalisation of estates, the government finally attained majority control in the industry.

Like coffee, production output has been going down from 19,188 tons in 1966 to 15,195 tons in 1970. But the total value has increased marginally from 17,300,000 shs. in 1966 to 17,500,000 shs. in the following year (1967). In the Kilimanjaro region, for example, the drop in output and value has been the greatest - from 988 mil. shs. in 1968 to a mere 8.19 mil. shs. in 1972.

Now that sisal is under strong competition from synthetic fibres, the future prosperity of the industry will be dependent on a new flexibility in the industry. New alternative end-uses of sisal are being explored, and the production of paper pulp

from sisal is a possibility. Costs will have to be maintained at par with, or lower than synthetics, and internal agreements towards rationalising output and stabilising prices have been formulated.

c) Cotton

During recent years cotton has become Tanzania's most important cash crop and its leading export commodity. However, only a small proportion (0.7%) of the national total is grown in the region - mostly in the Pare lowlands. Cotton output in the region has been falling from 15,013 bales to 4,674 bales (1966-1970). Also its contribution to the economy fell from 1.8 mil. to 1.5 mil. shs. in the same period.

Most of the cotton is exclusively a smallholder crop with farms ranging from 2.4 and 3.6 hectares. Yields are estimated to range between 340 and 790 kg. per hectare of seed cotton, depending upon the differences in soil, weather and cultivation practices. Much of the cotton is directly sent to the textile industries in Moshi and Arusha and if there is any surplus it goes to the other textile factories in Tanzania or sold abroad.

Several problems face this crop - disease and insect pests cause significant damage; the great requirement for labour limits acreage, few farmers have as yet incorporated artificial fertilisers or heavy manuring into the cotton farming systems; poor transportation network etc. These must be solved if this crop is to increase its output in this region.

d) Sugar

Sugar cane is a labour intensive crop which has a very high water requirement, so that yields can be increased considerably by irrigation.

Most of the sugar produced in this region comes from Tanzania's oldest sugar estates at Arusha Chini which occupies about 5,000 hectares and produces about a third of the country's sugar. The rest comes from Karangi estate in Arusha. Outside the region, sugar is produced in the Kilombero valley in the south.

The production of sugar has been rising as more and more acreage is cultivated. In 1966 the region produced 37,432 tons of sugar worth 46.8 mil. shs. and by 1969, this had risen to 45,861 tons worth over 52 mil. shs. Production rose further to 49,800 tons in 1974. In the Kilimanjaro sub-region sugar earned 38.78 mil. shs. for the region⁸.

Smallholder schemes for sugar cane have been introduced but the yields are very much lower than on the large estates, which have yields of 200 tons per hectare and a conversion rate to refined sugar of 10-1, higher than the world average⁹.

Prospects for the future of this crop are good since there is still room for expansion of the existing estates and there is a possibility of opening new estates. All effort must be made to increase production in order to boost Tanzania's export of this product since it fetches good price in the world market especially of late.

Apart from sugar, we also get jaggery from sugar cane and the production of this has gone up from 1,308 tons in 1966 to 3,321 tons in 1970 - which is about 35% of the national output. This brought into the region over 3.1 mil shs. (1968).

e) Pyrethrum

This is a crop which until recently was cultivated exclusively by European farmers on large estates, but which

has now become an important cash crop for many African small-holder farmers. The crop is cultivated in specific ecological zones and these are areas well above 1,000 metres of sea level altitude.

In this region it is found in West Kilimanjaro, Arusha and some parts of Mbulu and Hanang districts. It is a crop which requires a lot of labour for picking as the flowers have to be gathered every two to three weeks. However, it does not require any special techniques of farming and can be grown profitably on small farms since it yields a year after planting and continues to yield for four years. Pyrethrum does not require much investment except for land clearing or buying of plants.

Expansion of this crop is limited by the small size of the market and it is therefore grown under licence. A total of 1,081,400 kg. was produced in 1967/8 (out of Tanzania's total of 6 mil. kg). At present a lot of effort is being made in Arusha to expand the growing and production of this crop. In the Arusha/Hanang area, there are 13,000 acres of potential land for growing this crop. The aim is to expand this cultivated area to produce 3,000 tons by 1979/80 and this will give an income of more than 12 mil. shs.¹⁰.

The competition in the future against pyrethrum is pretty high because of the introduction of new insecticides in the market.

f) Other Minor Cash Crops

These include the production of wattle, sunflour, castor seed etc. The production of wattle is concentrated almost exclusively in the areas around Kilimanjaro. Unfortunately production has been on the decline - from 440 tons in 1966

to 167 tons in 1970. This fall has been caused by a fall in acreage as more people encroach on such land to grow food crops, and this trend is likely to go on in future.

On the other hand, the production of sunflour has increased from 80 tons in 1966 to 180 tons in 1970. Much of this is grown in Arusha where prospects are high for future expansion.

Castor seed, most of which is grown in Arusha, has also been falling in production from 1,555 tons in 1966 to 813 tons in 1970. Production of this crop can increase if people are encouraged to grow it because the conditions in this region are ideal for its growth.

4.3.2 FOOD CROPS

a) Maize, Wheat and Other Grains

It is extremely difficult to obtain an accurate and detailed picture of the pattern of grain production in the region. Maize the most important grain crop, is a staple food crop over much of the region, with millet being more important in the drier areas. The problem of dealing with this crop, which is eaten by the producer and his family presents sketchy figures. The figures used here refer only to that part of the grain output which is marketed.

In 1966, the estimated maize crop marketed amounted to 32,808 tons (value = 9.5 mil. shs.) and this rose to 55,356 tons in 1970. In 1972 Kilimanjaro region produced 11,280 tons which is below the previous annual production of between 14,000 and 16,000 tons. This fall in output was caused by a poor harvest caused by the lack of rain in the area. In most cases it is possible for a farmer who has maize surplus to his own food needs to sell this privately for a price far above the official

price paid by the co-operative.

Whatever the case about the tonnage, it is clear that maize is a very important crop in the region in addition to bananas. It is grown virtually everywhere in the region, particularly in the lower slopes of the highlands and in Mbulu. The acreage has gone up as more and more people have embarked on increasing the family output. In Arusha region itself the acreage under maize in 1972/73 was 100,000. This was to be raised by an addition of 14,500 acres in 1973/74 and 20,500 acres in 1974/75¹¹, in order to produce enough food for the people and for export. Similar expansion has taken place in the Kilimanjaro and Pare areas too. More efforts are being made to produce more output through using hybrid maize and so future prospects for this crop in the region are favourable. There are vast areas in the Mbulu and Hanang Districts where Maize can be cultivated very successfully and it is in such areas future expansion will take place.

Wheat Production

It is possible to be much more confident about the quality of data on wheat production, since this is concentrated in a few areas and output generally comes from a relatively small number of large farms.

This region produces well over 90% of the wheat grown in Tanzania. In 1967 the total output was 32,371 tons which rose to 41,362 in 1970 with a value of over 16 mil. shs. (1967). Much of this wheat is grown in the fertile areas of the region in West Kilimanjaro and in Mbulu where there are still vast areas where potential expansion is possible.

In the area close to Arusha town most of the wheat production is on large estates of 400 hectares or more, but

here there is little room for expansion. Similarly the Kitete/oldeani area made up of small- and medium-size hand cultivated farms has little extra land. However, the Lolkirale area, s.w. of Arusha, has some 800 hectares available for future use, and there is also potential in the Makuyuni and Loliondo areas where there are 243 hectares available. The major expansion will be at Basuto in Mbulu district. The wheat state farm in Mbulu was started in 1967, and 140 ha. were seeded in 1968, in 1969 there were 800 ha., and a further 2,400 to 3,200 hectares have good potential. There is another area of 6,000 hectares to the North-East. At present transport is a problem in Mbulu district, but high priority is being given to the construction of access roads.

The second area under wheat is in W. Kilimanjaro where we find about 4,582 hectares under wheat at the moment with a lot of other potential land for cultivating this crop.

On the whole, this region has a lot of potential for producing more wheat especially in the Mbulu area. This will go a long way in meeting Tanzania's ambition of being self-sufficient in wheat consumption by the end of this year.

Paddy (Rice)

Very little rice is grown in this region. Much of it is grown along the river Pangani and in the irrigated area around the Nyumba Ya Mungu dam in Moshi. Output has more than trebled since 1966. Production during this year was 1,500 tons and by 1970 this had risen to 6,495 tons. There are other potential areas for the production of this crop provided irrigation schemes are carried out, especially in the Mbulu area.

Other Grains : Millet, Sorghum

Among the other grain crops grown in the region is millet whose production has been growing from 1,500 tons in 1966 to 2,200 tons in 1970. This crop is grown in the lower plains and does not require much water. In the Kilimanjaro area it is used both for food and for beer brewing.

Another grain of lesser importance in the region is sorghum which grows mostly in the dry areas of Arusha and some parts of Kilimanjaro. Its production is very low - only about a 1,000 tons per year.

b) Bananas

Bananas are grown extensively both in the Kilimanjaro, Arusha and Pare districts and form the staple food especially of the Chaggas and Merus. It is mostly grown along with coffee and sometimes on its own. On average a coffee-banana farm is about 5.2 acres in the Kilimanjaro/Meru area and the yields per farm about 309 bunches of which only 124 are sold. On average the income per farm is about 337 shs. only. (Beck, 1963, op cit). The banana output of the region has been growing tremendously of late. For example in the Kilimanjaro area where bananas are grown intensively as well as extensively, production rose from 72,800 tons in 1972 to 79,800 tons in 1974¹².

Most of the bananas are eaten by the growers or used for brewing beer. The remainder are sold either in local markets or in the towns with a bunch fetching between 2/75 - 3/50 shs., per bunch. Some of the surplus bananas in the past have been sold as far as Zambia and nearby Kenya. The potentialities of the outside markets need to be exploited and the marketing facilities (cold storage) instituted. It is also possible to dry the bananas and grind it into flour for domestic use as the Jamaicans do.

Although in the past years the banana industry has attracted attention at national level to exploit the potentialities of the crop as a raw material for brewing Konyagi (local brew), juice, jams etc., very little progress has taken place to achieve this. Hence, the region has tremendous potential in this crop especially when/if the above projects get off the ground.

c) Fruit and Vegetables

The soils and climate in the moister areas of this region are well suited to the intensive cultivation of fruits and vegetables both for home consumption and for sale either locally or in the region's towns. At present, the main fruits grown include plums, peaches, oranges, and tomatoes. Plums come mainly from the wetter parts of the highland zone in the Kilimanjaro area. Tomatoes do thrive well on the lower plains and in the area near the new Kilimanjaro International Airport - on the Sanya plains - and these have a ready market in the nearby towns of Arusha and Moshi. In the same areas where we find tomatoes, onions thrive well too. In 1967 the region produced well over 39% of the total national output with much of this coming from the area around Arusha and Mbulu. Apart from local consumption, onion output in 1970 was 8,363 tons. The value of the onion output in the same year was 3.0 mil. shs.

The vegetables grown in the region include cabbages, spinach, carrots etc. Cabbages are grown virtually everywhere in the highland zone in Arusha and Kilimanjaro and the other vegetables like carrots are grown in the vicinity of the main towns where they find a ready market for them. Production has been rising from 4,174 tons in 1966 to 8,800 tons in 1970. There is tremendous potential for growing all sorts of veg-

etables in this region because of the various climatic zones there are and so, some encouragement has to be given to the people of this region to grow more vegetables both for their own consumption to supplement the starchy foods they are used to, and for sale elsewhere to get money to buy other commodities. The people moving from the congested highland zone in the Kilimanjaro area to the lower plains already produce quite a substantial amount of vegetables especially from the area near the new KIA. Some of the vegetables are sold outside Tanzania. Further expansion in this area is possible because there is plenty of land. The only handicap here is the lack of water, but this can be remedied by bringing water from the mountains by pipes.

The processing of fruit and vegetables, canning, freezing, drying, juicing and jam making are some of the industries already existing in the region but in a very low scale. If these industries are expanded this will lead to considerable industrial employment in addition to the direct farm employment. This would, however, require considerable organization to farmer education.

Certainly, this region should be self sufficient in its requirements for fruits and vegetables if the potentially fertile and suitable areas are opened up especially in the Arusha, Kilimanjaro and Mbulu areas.

d) Other Agricultural Crops

Seed Beans:

In the whole of Tanzania seed beans are found mainly in this region, though at the moment there are experiments to try to introduce these in other areas. Three-quarters of the output comes from Arusha - mostly from farms near the town; in Masai

District near Hanang and in Mbulu district. The total output from this area has gone up from 5,500 tons in 1966 to 9,554 tons in 1970; whereas output in the Kilimanjaro area only rose from 350 tons to 934 tons in the same period.

This area is suitable for growing this crop and future expansion is possible because there is spare land at the moment. Much of this crop is sold overseas and in 1967 it fetched 13 mil. shs.

Mixed Beans and Pulses

This area is also suitable for growing beans and pulses in large quantities especially in Arusha, Hanang and Mbulu Districts. Output has been rising as more and more farmers have started growing this crop. Tremendous potential still exists in the area west of Arusha and in Mbulu where this crop thrives very well. In 1966, the total output of beans was 9,800 tons fetching 4.6 mil. shs. However, since then output has been declining and by 1970 this had come to only 3,800 tons.

Potatoes (Both Round and Sweet)

Sweet and Irish potatoes form an essential part in the diet of the people in this region, especially for the Chaggas in Kilimanjaro. They are cultivated almost everywhere in the region, but marketed output comes especially from the area near Arusha, Moshi, Mbulu and in Hanang Districts. They require moist climate and good soils. The output of sweet potatoes has been fluctuating in both regions over the past few years with the highest production being 4,660 tons in 1969. In 1966 sweet potatoes sold amounted to 1,700 tons with a value of 0.3 mil. shs. but, by 1970, the amount sold came to 2,000 tons.

On the other hand, the production of Irish potatoes has been increasing steadily but also fluctuating as new areas were being cultivated, especially in the Hanang and Mbulu areas. Output sold in 1966 came to 6,300 tons (worth 1.9 mil. shs.) and in 1970 output had reached 7,700 tons.

<u>TABLE 6</u>	<u>SUMMARY</u>	<u>MARKETED AGRICULTURAL PRODUCE - 1970</u>			<u>Tons</u>
<u>Crop</u>		<u>Arusha Region</u>	<u>Kilimanjaro Region</u>	<u>Total</u>	
Coffee		9367	24055	33422	
Sisal		7000	8195	15195	
Cotton		1500	3174	4674	
Sugar		n.a.	35393	n.a.	
Pyrethrum		270	92	342	
Maize		42889	12467	55356	
Wheat		27051	14311	41362	
Rice		300	3495	3795	
Onions		8000	363	8383	
Vegetables		6700	2100	8800	
Seed beans		9554	934	10488	
Mixed Beans, Pulses		3400	1264	4664	
Sweet Potatoes		1000	1000	2000	
Irish Potatoes		700	7000	7700	

Source of Data: Statistical Abstract 1970 - op. cit.

TABLE 7 Contribution of Agriculture to the Regional Economy
1968 - 1972

<u>Price Index 1969 = 100%</u>						<u>Shillings Mil.</u>	
<u>KILIMANJARO REGION</u>						<u>ARUSHA REGION</u>	
<u>Important Crop</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1967-1971</u>	<u>1972</u>
Coffee	54.09	57.36	91.20	82.62	79.92	NO	22.0
Cotton A.R.	0.44	0.27	0.89	0.52	0.51	FIGURES	
Cotton B.R.	0.16	0.05	0.08	0.09	0.05	ARE	
Sisal	9.88	9.21	7.38	7.75	8.19	AVAILABLE	
Sugar	35.87	40.12	32.56	37.94	38.78		
Maize	3.54	4.58	3.74	0.91	3.38		1.0
Paddy	1.07	1.87	1.96	2.03	2.16		
Wheat	4.39	4.76	7.96	6.27	7.00		12.02
Pyrethrum	1.04	0.76	0.36	0.30	0.57		5.00
Beans	0.77	1.32	2.69	2.69	1.47		1.70
<hr/>							
TOTAL	111.25	120.3	148.82	141.12	142.03		

Source: Kilimanjaro Annual Plan &73/74.

It has thus been seen above that agriculture is very important in this region and keeps well over 90% of the people engaged in this activity. The most important cash crops being coffee, sisal, cotton, seed beans and wheat, and the important food crops being maize, bananas, millet, potatoes, and an assortment of vegetables. The areas where agricultural production is highest is the highland zone around Mts. Meru, Kilimanjaro and Parc. In addition, the area around the Mbulu Highlands and Hanang, apart from growing a variety of crops now, still has a lot of further potential for growing more crops since much of this land is at present not fully exploited.

More production is possible in the highland zone provided better methods of production are adopted - these include: better husbandry, use of fertilisers, manure, good rotation etc. Crop diversification is called for in the Kilimanjaro/ Meru area where the main cash crop - coffee - is facing not only a drop in prices but also plant diseases.

On the whole the expansion of the food crops have been affected by a number of factors which need elimination. These constraints include: a) Major reliance on the hoe as the main agricultural implement. It is estimated that of the total area under production, the hoe covers well over 80%. Tractor and ox-plough cultivation is responsible for only 20% and this is mainly in the European- or government - owned farms. The expansion of acreage using hand tools is limited to the physical capability of the people. This capability is unable to meet the food demands of the additional 37,000 people per year within the subsistence sector and thus in the non-agricultural sector.

b) Lack of investment in the food crop sector caused by an undue emphasis on the production of commercial cash crops by financial agencies where the risks are less and the collection of loans easier. Both internal and external financial institutions have shown more willingness to provide funds for cash crops development projects as opposed to food crop programmes.

c) Infrastructure, in terms of research, extension, marketing and technical training facilities have tended to be biased towards cash crops production at the expense of food crop production.

- d) Agriculture pricing policies in Tanzania have in the past tended to encourage the development of cash crops and only peripherally touched upon food crops.
- e) Another major constraint in the region in the field of implementation of some of the projects that have been contemplated is the shortages of capital, technology and trained manpower. In order to achieve a rapid expansion in food production there must be more agricultural mechanisation centres to help peasant villagers in their co-operative farms; extension workers have to be educated in farm management and farmers must try to participate in all experimental activities. The solution to some of these problems will come in the next section, now let's look at the practice of animal husbandry in the region and its place in the economy.

4.5 LIVESTOCK FARMING

For the people who live in this region, especially in Arusha, Masai and Mbulu districts, livestock is of paramount importance. First of all are the Masai and other groups to whom cattle is not only a means of livelihood but also the cardinal yardstick against which a man's influence, power, wealth and indeed manliness are measured. Then there are those who do not look after cattle but look for meat, milk, etc. for life. The Chagga fall under this category. They do not keep more than an average of two cattle because of shortage of grazing land. Both these groups take the question of livestock very seriously or at least they should.

4.5.1 Cattle and other animal

The region is well-known for its vast numbers of animals, especially cattle kept by the Masai in the extensive, wide plains of the Masai Plains. The total number of cattle in the

region has gone up from 2,093,554 in 1965 (U.N. count) to 2,627,000 in 1971/72 cattle census count. Most of these are beef cattle with the number of dairy cattle fairly low. Pigs and horses are few in number but there are, locally, larger numbers of donkeys. The estimated population of the main economic animals are tabulated on the table below.

Table: 8 Livestock Population in the Region in 1965.

<u>Region</u>	<u>Sheep</u>	<u>Cattle</u>	<u>Goats</u>
Arusha	706000	1880000	843000
Kilimanjaro	77495	213554	141524
N. REGION	783495	2093554	984524

Source: U.N. FAO, Census of Livestock, 1965.

Table: 9 Cattle Population in the Region in 1971.

<u>Region</u>	<u>Official Estimate</u>	<u>Census</u>	<u>Total Off-take</u>	<u>%</u>
Arusha	2000100	2378000	147300	6.2
Kilimanjaro	290000	249000	114200	45.8
N. REGION	2290100	2627000		

Distribution. a) Main Cattle Areas

In general the pattern of distribution is not dissimilar to that of human population. The principal areas of cattle raising are the dry, open grasslands or wooded grasslands whose rainfall is marginal for cultivation, but which lack the bushy undergrowth which acts as a breeding ground for tsetse-fly. Thus, in this region the main area for cattle is Masai and some parts of Mbulu districts which fits the above description nicely.

It has enormous potential for increased livestock production. At present it has a large number of livestock but it produces fewer than expected for sale in the markets. Among the many reasons for this the low standards of animal husbandry and range management must be given prominence. Water resources need developing in the area and the remaining pockets of tsetse fly must be eradicated. Dips must be established for the control of tick-borne diseases. When these things are accomplished the introduction of better quality stock (such as improved Boran cattle) would help to produce heavier cattle and better milk yield. Some steps have been taken in this direction since the establishment of the Masailand Range Dev't. Comm'n. More will be said about this later.

b) Lands of Pastoralists - Cultivators.

Pastoralist Cultivators exist in areas such as Meru and some areas in Kilimanjaro district where the land is used for the combined production of food, cash crops and livestock. In the highland area cattle are stall-fed but this restricts the number of cattle a family can keep - ranging from 2-4 in the Kilimanjaro area. Some of the farmers are now embarking on keeping hybrid dairy cattle which gives more milk. On the lower plains cattle graze freely after a crop harvest and the number kept per family ranges from ten to 100. As with the Masais, the people who keep cattle here seldom sell them - they keep them as a sign of wealth.

c) The State Ranch System

In addition to the above, there are state ranches started by the government to breed and keep cattle. In 1971, the State Ranch System had a total of 83,000 animals in its ranches. Out

of this, the West Kilimanjaro Ranch in Arusha, had 80,000 acres carrying 6,778 cattle and 4,000 sheep. This is a breeding and fattening ranch which may be converted to a breeding ranch as the complex of state ranch develops. In Masai district there are ranches at Talomai, Komolonik, Loliondo, Manyara, Kibaya, Berera, Shamarai, Aldai and Endulení.

The state ranch system, is operated by the state under the auspices of the National Agricultural Company, and it is to be developed further to increase livestock development in Tanzania. Some of the state ranch cattle are sold directly to the market or sold to farmers who want to improve their breed since the cattle here are of higher standard.

Besides these, there are some areas in the region where livestock are plentiful, but the full potential in terms of land use, breeding, feeding and pasture management is a long way from being realised.

There are now in the region, and in Tanzania as a whole, increasing numbers of exotic cattle breeds. Boron bulls particularly are being used to upgrade local Zebu beef stock, while the Western Breeding Station in Tanzania has developed the Mpwapwa breed, as dual purpose cattle. In the cool uplands of Kilimanjaro and Meru dairy cattle of European stock, especially Jersey and Guernsey, are being imported, though supplies are normally less than demand.

Cattle husbandry varies from intensive stall-feeding, as in the Kilimanjaro area, through systematic grazing in the lower plains below, to semi-nomadic pastoralism in Masailand. In addition, of course, there is the State Ranch system for beef stock mentioned earlier.

Dairy Cattle

The region has been in the forefront in keeping improved dairy cattle especially in the wet areas in the Kilimanjaro, Meru and some parts in the Mbulu highlands. The origins of government interest in expanding the dairy industry especially in the Moshi area dates back to the 1960's when encouragement was given to the natives to rear these types of animals.

Efforts at assistance have centred around providing medium grade dairy animals and artificial insemination semen both for maintaining the genetic quality of grade cattle already on the mountain as well as upgrading local cattle. This is seen to be a proper intermediate step both for gradually introducing farmers to the special management demands posed for grade cattle as well as building up the genetic potential of the dairy herd as rapidly as possible.

By 1971, there were estimated to be about 5,284 medium grade cattle in Kilimanjaro on smallholdings and by 1972, this had risen to 5,316. Improvement of the local breed by artificial insemination of good A1 Bull semen increased from 771 cattle in 1970/71 to 2,686 cattle in 1972/3. Most of these were in the Moshi area. There are problems hindering progress - much because transport roads to reach farmers are very poor and in some places non-existent; secondly, there is shortage of A1 semen and thirdly, there is a general laziness of some farmers to call in inseminators.

In the Arusha sub-region, great steps have been taken to improve dairy cattle too. A new project launched to achieve this objective started with 68,700 farmers and the number of grade cows they started with was 1,963. Most of these are in

area around Mt. Maru, other areas in Arusha District and in Mbulu. Out of the grade cattle, 430 are milking cattle producing an average 20,000 litres a month. There are plans to bring in more grade cattle in the future to meet the farmers' demands.

Dairying and the processing of dairy products is an industry which has therefore high potential in the wetter parts of the Kilimanjaro and Arusha districts. However, at the moment, lack of all-weather feeder roads mentioned earlier is a major constraint to the development of a well organised dairying industry, for milk is a very highly perishable product which can tolerate no delay in delivery to the processing plant. If this constraint is removed, then the existing dairy processing industry located both in Arusha and Moshi will grow and therefore earn more money for the region.

The Cattle Industry

Despite the large cattle population the industry is not as yet fully developed as it might be. In many parts of the region, more so in Masailand, cattle are kept more as a symbol of wealth and prestige, rather than as an economic enterprise. Thus numbers tend to grow to the detriment of available pasture. Overgrazing leads to soil erosion and decreasing pastures, while there is no systemic culling of old, diseased or uneconomic animals.

The overall contribution of livestock to the economy is fairly high, although there is considerable potential for development. Some measure of current production is given by the market sales of animals.

The number of slaughtered cattle in the region on 1969/70 was 90,047; and in 1971/72 was 119,155, but in 1972/73 the number had fallen to 91,015 showing a fall of 23.62% from the previous year¹⁵. Due to the drought which affected Tanzania in the last two years the number slaughtered has come down slightly.

Average prices for the sale of slaughter cattle for 1970 was 251/- per head and this, to date, has risen to 327/- per head showing a rise of 30.2%. Prices have been rising because the demand, especially in urban areas both in this region and in other parts of Tanzania has gone up.

Much of the meat finds its way to the export market after canning through the meat canning and processing plant at Dar es Salaam and some is utilised for domestic urban and rural consumption. Beef consumption, especially among the Masai and the Chaggas has been a key element in the nutrition of the rural people. It has provided valuable protein in diets which lack alternative sources of protein but it has been evident for some time that domestic beef consumption is very unevenly distributed.

Beef Consumption: Urban and Rural

Domestic urban demand for beef both in this region and in Tanzania in general, has been expanding rapidly over the years mainly because of the rapid population growth and secondly because of the cheap price meat has been over the past few years because of price control. The average town consumption for 1971 was 23.5 kilos per person per year whereas in 1967, the average consumption was 18.3 kilos per capita, showing a rise of 6.5% per year. In this region, in 1967 the average consumption was 25 kilos per capita and in 1971 had fallen to 23 kg. per capita (Williams MacKenzie ERB. pp. 60 op. cit.)¹⁶.

Comparing domestic consumption rate between rural and urban areas it is found that in both cases there is much consumption of beef in the towns than in the rural areas.

There is no doubt that urban demands on beef supplies will remain strong over the next decade so some more effort should be made to increase the herd size, may be by better husbandry; control of diseases like rinderpest; east coast fever etc. Concentration on greater marketed off-take from cattle can produce a stimulus to cattle utilisation of existing resources in the provision of protein for the rural areas. Top priority should be given for beef cattle in the plains. Improved range management, land-tenure reform, disease control, improvement in water supply and an increase in sales are required, along the lines already being followed In Masailand (State Ranch System).

Other Livestock Products

Livestock products other than meat, skins and hides, are relatively insignificant. There are factories in Arusha and Moshi which process milk for local consumption. Its associated products include butter, ghee and cream. In 1966, for example, the region produced 5,287 lbs. of ghee, 1,338 lbs. butter and 2,059 tons cream. The output has certainly gone up as the total no. of animals has increased and also because of the introduction of high grade milk-producing cattle in this region. This is an industry with tremendous potential and should therefore be encouraged to grow bigger and faster.

GOATS AND SHEEP

Goats and sheep add to the supply of meat and cash to the farmers in this region. They are found in the same areas as cattle, though their number is very much lower. Goats rank

second in Kilimanjaro District, where expansion in the numbers is required both for meat and milk because of their high rate of return in terms of food input. In Arusha, both goats and sheep come second to cattle in the provision of meat both in the rural and urban areas.

In the Kilimanjaro area the registered goat stock was 142,000 goats in 1965 and in 1967 it was 101,000 at a density of 19.8 head per sq. m. Well over half of these goats come from the Pare District where there is more open land for grazing.

In Arusha District, the goat head size in 1965 was 36,000 and by 1967 this had risen to 40,000 - out of which 11,000 were sold bringing in 460,000 shs. The area with the highest amount of goats, however, is Masai district which in 1965 had a record goat stock of 507,000 and in 1967 478,000 with no sales recorded. In Mbulu there were 3000,000 goats in 1965 and 397,000 in 1967 with only 11,100 sold fetching 344,000 shs. into the district. The total number of goats has certainly increased in this area and with proper management and good husbandry, this region will benefit a lot from the sale of goats to other areas.

As far as sheep stock is concerned the same pattern also persists, with the highest number being reared in Masai district, then Mbulu, Arusha and Pare districts. The number of sheep in Kilimanjaro is smaller than in the other districts because of the shortage of grazing land.

The number of sheep in Masai district in 1965 was 493,000 and in 1967 this had risen to 522,000. In Mbulu the stock size was 178,000 in 1965, rising to 188,000 in 1967 with only 2,300 sold bringing in 67,000 shs. In Arusha district the stock size was 35,000 heads in 1965 and 36,000 heads in 1967, with 10,100 sold fetching 460,000 shs. For the Kilimanjaro and Pare

districts the stock size in 1965 was 77,000 and in 1967 was 61,000 with only 1,900 sold bringing in 63,000 shs.

Overall, it is thus seen that the number of sheep has been going up and presumably the income too. This helps to supplement the meagre income the farmers get in their involvement with arable farming. For some tribes like the Masai this is only income they depend on apart from the income from the sale of cattle and goats.

Other products from goats and sheep are skins which in 1967 amounted to 4,363 for goats and 1,524 for sheep in the Kilimanjaro area. There were obviously more skins sold in Arusha and Masai/Mbulu areas though there are no figures for these.

The possibility of more meat from goats and sheep are quite substantial in the future. These animals are consumed in the rural areas to a greater extent than they are through inspected slaughter and market distribution. Present sheep and goat off-take is 6% for Arusha and 10% for Kilimanjaro.

It would be advisable to explore more fully the advantage of further developing goat and hair sheep production in the pastoral areas. An attempt to raise these animals in areas where few exist at present should be attempted.

Pigs

At present pig farming is not being carried out to a large extent in this region and their number is therefore very small - numbering only 4,000 in 1967. Most of these were in the Mbulu district and the Kilimanjaro area. However, the keeping of pigs offers good potential, particularly in areas where land is in short supply as in the Kilimanjaro/Meru area. These are

the areas attention should be focussed on in the future development of this activity. The production of pork locally will help in meeting the demand arising out of the tourist industry in the region and the needs of urban dwellers. Pigs slaughtered in 1972/73 numbered only 967.

Poultry

Another source of protein in the region is poultry. Several birds are kept in the smallholder farms and only a few big farms keep poultry on a big scale. So far a number of attempts have been made to raise the number of chicken and hence the production of eggs to meet demands arising from the increasing tourist trade in the region and also local demand.

For the greater part of the rural areas it is better to improve poultry rearing on mixed farms, with careful vaccination versus the main fowl disease. Hens pick up all sorts of natural food, from wild grain to worms and insects. This would mean that poultry could be kept with little or no expenditure on feed.

The agricultural extension service has tried to rear chicks raised at Msinga and at Same number about 13,000 per year and these are sold to local farmers in the district or elsewhere. It is expected that in 1975/76 the number of reared chicks will reach 15,400 (Kilimanjaro Annual Plan, 1974/75, pg. 105, op. cit)¹⁷ It is hoped that this service will be extended to the other parts of the region, especially in Mbulu and Arusha; and if possible farmers will be encouraged to open up big farms so that this venture can become a financial success for them.

4.6 AGRICULTURAL SERVICES

The major agencies responsible for crop and livestock production in the various areas of the region are the Agricultural and Veterinary Dept., assisted by the extension and advisory staff of the Co-operative Dept. The work very closely, is concerned with the promotion of new crops and varieties; improved husbandry; the extension of the use of modern inputs; the control of pests and conservation and a variety of other matters. The Department's influence is felt through its Farmers Training Centres of which there are two in this region - Tengeru and Machame, and its field extension services which provide the major means of communication with farmers. The extension workers use field visits, demonstration plots, barazas (open air meetings), agricultural shows etc. to get their advice across.

The co-operative movement adds to the extension and advisory services in agriculture in the districts where it is strong, e.g. in Kilimanjaro through K.N.C.U. and in Arusha through A.R.C.U., and there are other agencies that also play a role. The salesmen of commercial firms selling agricultural inputs do a certain amount of extension work, particularly where the use of fertilizers and insecticides is developing. And in some districts, especially in Kilimanjaro, the missions are involved in programmes to promote agricultural development and they contribute to the extension work.

The emphasis to different aspects of agricultural development in the region varies but there are some common features throughout. There is a tendency to give support to the development of cash crops as a general rule, though there is a great deal of attention being given to maize and beans throughout the

region now. Agricultural diversification is also receiving some attention especially where the traditional crop is declining either in price or in output.

General Programmes in the Region

Among the crops included in a Crop Promotion programme are maize, coffee and pyrethrum. People are being encouraged to use hybrid maize which grows faster and matures early. As for coffee, no new acreage is expected because of the low prices being offered at the moment and the farmers are being encouraged to diversify to dairy cattle rearing. For pyrethrum there are attempts to use high yielding plants in order to get enough for the factory at Arusha.

In addition to participating in all of these special crop programmes the agricultural staff in the region are involved in a more general attempt to improve husbandry paying particular attention to early planting, better weeding and the application of manure, fertilisers and insecticides.

Farm mechanisation is also being encouraged especially in Mbulu, Arusha and lower Kilimanjaro. Difficulties in managing contractor services where plots are small, the demand sporadic, work seasonal, and maintenance a problem, still seems to be very great. The best one can expect at present is that the services be marginally profitable. It is expected that the movement of people into Ujamaa villages will foster the use of tractors since plots will be bigger and therefore easier to handle.

It may be possible to achieve more through encouraging the use of ox-equipment and other small-scale equipment/implements and machines in areas in which terrain is suitable and grazing

is not so scarce as to make the keeping of oxen uneconomic. There are some areas in which oxen could make an important contribution. In others they should not even be considered.

Credit is still emphasised as a general aid to agricultural development, despite discouraging experience with small-holder credit that goes back 20 years. The most important items for which loans are given at present are those connected with grade cattle, fencing; water supplies and dips are all frequently financed with official loans. Credit is also given for constructing water tanks and water pumps and for other purposes; oxen and ox-equipment; tractors; maize grinding mills; fertilisers and insecticides; etc. More attention should be paid to devising suitable criteria for selecting credit worthy farmers and encouraging innovation that make economic sense.

With all of these programmes in agriculture, farmers are obviously getting some very helpful support. But there are major omissions in the agricultural programme among which is the need for advice on programmes of marketing and storage, attention to soils and climate, about both of which very little is known at the local level, and advice on farm management. Districts rarely have sophisticated information on their soils and climate, both critical to agricultural planning, and farmers would benefit from access to soil testing services in many areas now. The marketing agencies complain about the high moisture content in cereal crops and other quality problems. In some areas, small scale farming is becoming complex and sophisticated farmers need advice on farm management problems.

The Field Extension Service

The farmer's main link with the Regional Agricultural Department and other statutory authorities involved in agri-

culture is through the field extension workers, and it is they who carry the department's policy into the field. They are responsible for advising the farmers on agricultural practices, giving them information on new crops and inputs, telling them how to get hold of improved seeds, fertilisers, insecticides etc., recommending them for loans and giving them advice on any of the farm problems that they ask about. To do this well, agricultural extension workers have to be thoroughly trained in a variety of fields and they have to be in touch with their superior officers and others connected with the rural development process in the region. These have to be trained nationally and more of them than at present.

4.7 Summary: THE CONCEPT OF THE PHYSICAL DEVELOPMENT OF THE AGRICULTURAL SECTOR IN THIS REGION

In conclusion it can be said that the substantial expansion of farms, where land is abundant, is likely to continue, agriculture is likely to be more intensive. Technical changes should ensure increased productivity and higher returns. The farmers will more likely produce for export for this is their main livelihood. Agriculture will provide employment for fewer people in the future, but it should be possible for those displaced to find employment in the expanding industrial and services sectors of the region.

Since the agricultural activity depends on the large surfaces of land it represents a component part of the region itself. The organisation of the agricultural space is important and can be considered from two aspects: a) the production and b) the landscape protection.

a) As in other cases in which some productive process is concerned, the agricultural land also needs some improvement, equipment and organisation. The organisation of the agricultural area in this region consists of the following:

- Melioration (drainage and irrigation) of some of the soils, especially in the plain below, for the purpose of improvement of the soils for an intensive production. Soil erosion prevention is necessary in the steep slopes in the highlands, especially in Pare, Kilimanjaro and some parts of Mbulu. Irrigation by the Nyumba ya Mungu dam can improve some of the soils and bring vast areas into production;
- Infrastructure development - (for example the construction of roads in the established economies and their connection to the external road network, particularly in Mbulu district and Masai, development of installations for supply of electric power, water etc.) in order to organise large scale production;
- Development of facilities and buildings in accordance with applied production, technology and capacities (stables, storage, silos etc.);
- Development and organisation of settlements for the housing of agricultural and other population. Here, the Ujamaa settlement schemes will help a lot;
- Use of better husbandry methods, as discussed before etc.

b) The agricultural land is a component part of the landscape and the natural resources. Therefore, the improvement, use and protection should represent a subject of overall social interest. Consequently, it will be necessary to undertake the following:-

- The valuable productive localities should be protected from other development and exploitation,
- The localities of the landscape and recreation value in the region should be protected from development which will spoil the environment and also by adequate measures and interventions to evaluate the space in the economic sense. The more vulnerable areas are those in the vicinity of the tourist routes, especially in Arusha and the slopes of Mt. Kilimanjaro.
- On the degraded and erosion inclined terrains, where no possibilities for the use of agro- technical measures exist, nor economic justification of all efforts for the intensification of the agriculture it is necessary to stop further degradation from erosion with active afforestation and other technical measures.

The approval of the above suggestions should provide measures which will guarantee the realisation of the main concepts of exploitation, protection and organisation of the agricultural soil and space.

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CHAPTER 5

DEMOGRAPHIC ANALYSIS

The general characteristics of any population are its size, distribution, composition and the quality and the rate at which it is growing. Two outstanding features of the population of this region, also common in other parts of the country, are its uneven distribution and rapid rate of growth.

An analysis of such population characteristics is important in regional planning, because these characteristics have implications for the stability and growth of the region and show areas where action is needed urgently.

5.1 Size

In the 1967 Census, the total population of this region was 1,263,097 occupying an area of 95,312 sq. km. and at a density of 28.4 persons per sq. km.¹ Mid-year population estimates since then brings the population in 1970 to 1,386,000 and in 1975 to 1,951,000². This is 10.3% of the total Tanzania population and occupies about 10.8% of the total land area. This population is not evenly spread resulting in concentration in some of the fertile areas. Population density varies from 1 person per sq. km. in Masailand to 279.1 persons per sq. km. in Vunjo where overcrowding is causing concern at the moment.

Table 10 Population Size: 1967 Census & Mid-Year Estimates. '000.

<u>Area</u>	<u>Census</u>	<u>Mid-Year Estimates</u>					
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1975</u>
Arusha R.	610.5	619.4	636.1	653.3	671.0	689.1	801.0
Kilimanjaro R.	652.7	669.9	688.0	706.5	725.6	745.2	850.0
N. Region Tot.	1263.2	1289.3	1324.1	1359.8	1396.6	1434.3	1651.0
Tanzania Tot.	112,311.9	12230.8	12561	12900	13248	13606	14838

Source: Statistical Abstract. op. cit. pg. 59, Table C15.

5.2 Population Distribution

The nature and significance of Distribution and Density

The pattern of distribution of a region's population over available land, and the factors leading to this pattern, are questions of great importance to all development planning. This is very important in a country like Tanzania whose main living is derived from the land.

The significance of distribution and density derives from the nature of population itself. First, population is a resource and an integral part of the nation's productive forces. Secondly, population demands services such as education, health, water supply and transport. To be effective these services need to be located where they can be administered, that is, law maintained, national ethic promulgated, elections held and so on. For all three aspects of population it is clearly necessary to know where people are and how many of them there are. This is particularly the case in the planning and implementation of development programmes.

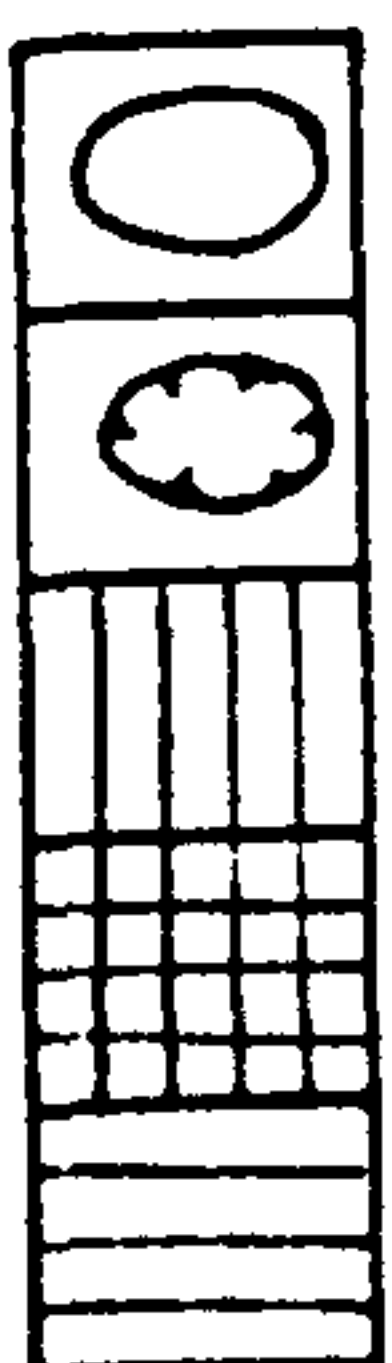
Distribution and Density of population are closely related in that density is the most commonly used numerical expression of geographical distribution. As such it reflects the areal variation in the factors such as soils, rainfall and disease. The tendency for population to cluster in a few, particularly well-endowed, areas poses problems in physical planning. Although such areas usually form core zones of development, they also give rise to marked regional inequalities in economic well-being. The planner is faced with the question of whether to stimulate further development in the high-density, high-potential areas or to create a more even distribution of development.

Factors influencing Population Distribution



Scale
0 40 80 mls
0 40 80 120 km

Key



Mean annual rainfall 1000 mm & over

Areas infested with tsetse fly

Forest reserve

Forest reserve & national park

National park : Game reserve

Density of population assumes significance in a further way. Within a given area and at a given level of technology resources may limit the size of the population which can be supported at an adequate standard of living. Where the population exceeds this limit problems of population pressure may arise in which case adjustments need to be made such as the resettlement of the excess population or the improvements in production methods which will increase the capacity of the resources. These inevitably involve policy decisions on the part of planners and administrators.

b) General Population Distribution in the Region

The distribution of the total population in the region and also among the various districts of the region is shown on the table below which also gives the area of each administrative unit, the proportion of the total national area and total national population in each, and the regional density. The distribution of population among the districts in the region is very much uneven with Kilimanjaro and Arusha districts having the bulk of the people and Masai District having the least number. Kilimanjaro administrative region with only 16% of the total Northern Region area has a population of about 51% of the total regional population with some areas already being terribly congested on the slopes of Mt. Kilimanjaro. The combined total population of the area in and around Mts. Meru and Kilimanjaro alone came to 657,899 (1967 census) and this is well over half the total regional population. The rest of the population is spread over the remaining areas in Mbulu and Masailand.

11 Table: AREA, POPULATION AND POPULATION DENSITY BY DISTRICTS 1967

Admin. Unit	Population		% of total Tz. Pop.	Area		% of Tz: Density Tot. Ar.	Den- psk
	M	F		ml ²	Km ²		
ARUSHA R	310226	300240	5	31700	82103	9.3	7.4
Arusha d	111040	103176		1150	2979		71.9
Masai d	52545	54347		24067	63067		1.7
Mbulu d	146641	142725		6200	16058		8.9
KILIMANJARO R	317729	334993	5.3	5100	13209	1.5	49.4
Moshi & Rombi	244743	253844		2100	5310		94.7
Pare d	72986	76649		3050	7900		18.9
Northern R	627955	635233	10.3	36800	95312	10.8	28.4
TANZANIA	5826413	6132240	100		883680	100	13.9

Source: Statistical Abstract 1970. op. cit. pg. 42.

This considerable variation in the pattern of population distribution (seen on map below) is attributable to various factors summarised below as: rainfall, soil fertility, altitude and topography; ecological factors, especially vegetation and the distribution of the tsetse fly; historical and political factors, including the establishment of game and forest reserves. Some of the past migration history of the major ethnic groups is especially significant.

Hence the fertile soils and ideal climate with abundant rain in and around the highland areas of Mts. Meru, Kilimanjaro and Mbulu, have been the major factors in encouraging people to settle in this area. On the other hand, the dry areas in Masai-land with its poor soils and climate plus the fact that some of the areas are infested with tsetse flies have accounted for the low distribution of population in this area.

The relationship of population and environment is, however,

one of reciprocal impact and response. Changing relations may have direct implications for economic development, it has for instance been argued that in certain circumstances increasing pressure on land is conducive for development through more intensive land use³. This is very true of the area around Kilimanjaro, which is very much developed since much government investment has poured in. On the other hand, very low densities, are in most cases detrimental to development because of the high per capita effort required in the extension of infrastructure and overall production. This is exemplified by the area in Masailand and parts of Mbulu where development has been slow because the area is remote and people's demands for certain services has been low.

The population here, as in most parts of Tanzania, is predominantly rural. There were only 59,305 (1967) residents in the towns of Moshi and Arusha out of a total regional population of 1,289,300 and this is only 2.3%. More Tanzanians are living in Urban areas than before, but the proportion is not increasing very quickly. With the new policy of Ujamaa, it is hoped that this proportion will not grow too fast in the future.

A large proportion of those living in towns is non-African, mostly composed of Asians and Europeans. A proportion of the Europeans live in the rural areas where they have their farms; the rest work in the towns or other service centres.

c) Inter-censal Changes in Population Distribution

The first full enumeration of the population of Tanganyika and Zanzibar took place in 1948. The number of inhabitants was not known with any certainty until that time and the trend in the population size was a matter of some debate. Since this date two other censuses have taken place, 1957 and 1967. From

these it is possible to build up a picture of the population change in the region. The estimates of population at these censal dates for this region are given on the tables below:

These changes are the net result of differences in fertility and mortality, the components of natural increase, and of the differences in the balance of in- and out-migration.

Table:12 POPULATION CHANGE IN TOWNS

<u>Town</u>	<u>Censal Year</u>		
	<u>1948</u>	<u>1957</u>	<u>1967</u>
Arusha	5320	10038	32452
Moshi	8048	13726	26864
Total urban pop. (main.)	13368	23764	59316

Table: 13

RECORDED POPULATION IN CENSAL YEARS AND THE INTER-CENSAL GROWTH
RATES BY DISTRICTS.

<u>Region & District</u>	<u>Population '000</u>			<u>Annual Growth Rates</u>	
	<u>1948</u>	<u>1957</u>	<u>1967</u>	<u>1948-57</u>	<u>1957-1967</u>
ARUSHA REGION	324.6	407.5	610.5	2.5	4.2
Arusha d.	111.2	148.7	214.2	3.3	3.7
Masai d.	62.3	70.7	106.9	1.4	4.3
Mbulu d.	151.1	188.1	289.4	2.5	4.4
KILIMANJARO REGION	353.5	473.9	652.7	3.3	3.3
Kilimanjaro d.	267.7	365.0	503.1	3.5	3.3
Pare d.	85.8	108.99	149.6	2.7	3.2
N. REGION TOTAL	678.1	881.4	1263.2	2.9	3.7
TANZANIA MAINLAND	7480.1	8788.5	11958.7	1.8	3.1
MAINLAND RURAL	7283.1	8424.4	11273.6	1.6	3.0
MAINLAND URBAN	197.3	364.1	610.5	7.0	6.5

Source: Population Census 1967. Analysis. BRALUP and Central Statistical Bureau.

For the Study Region, the increment from 1957 to 1967 was 381.8 thousand and is an intercensal increase of 30.2% which is very high. This is near the recorded national increment of 3.22 mil. (1957-67) which is an intercensal increase of 35.5%. With a continued geometric growth of 3% per annum such as this increase indicates, the population of Tanzania would double in the short period of 23 years.

This increase in the region, as well as in the national total is the result of changes in the vital rates of the population - The proportion of births and deaths - and to a lesser extent, variations in the amount of migration. The principal change has been a decrease in the level of mortality, in which in 1967, was estimated to stand at 13.6 per 1000 for this region compared with 22/1000 for the nation. Death rates too, have been falling from 19.1/1000 to 15.1/1000 (1957-1967) which is a lower figure than the national average which is 23 per 1000.

The expectation of life is now greater because health services are now more capable of dealing with the common diseases, and today more infants survive the early years of life to become youths and adults who in turn raise families.

According to observed trends in population distribution in the region, it is obvious that there is a tendency for the population to concentrate in a few already heavily populated districts, in this case, Kilimanjaro, Arusha and some parts of Mbulu. These are areas of high agricultural potential and are closely linked to the major urban areas in the region. In addition, a number of sparsely populated districts also show relative increases - particularly the rest of Mbulu and Masailand, some parts of which there has been an expansion of the cultivated area, as a result of government stimulus aimed at the opening of less developed areas.

5.3 Population Density

The 1967 pop. census density for this region was 24 persons per sq. km. on average with variations ranging from 1.7 psk. in Masailand to 94.7 psk. in Kilimanjaro. However, the regional average is above the national average of 13.5 psk. and hence, outlines the problem of population congestion in some parts of this area. The population density map shows that with an exception of Masailand, all the other districts in the region are above the national figure.

The pattern of distribution is complicated by the tendency for the population to be found in densely populated core areas from which densities decrease rapidly outwards. On the basis of Map (9) showing causes for population location and the density map/¹⁰ an approximate breakdown of the Region into population regions may be given as follows:

- i High Density Zones - These are the high rainfall areas of Kilimanjaro, Pare and Meru mts.
- ii Moderate to High Density Zones - The Plateau of Mbulu.
- iii Sparsely Populated zones - with occasional pockets of higher density, especially around major settlements - Masai district.

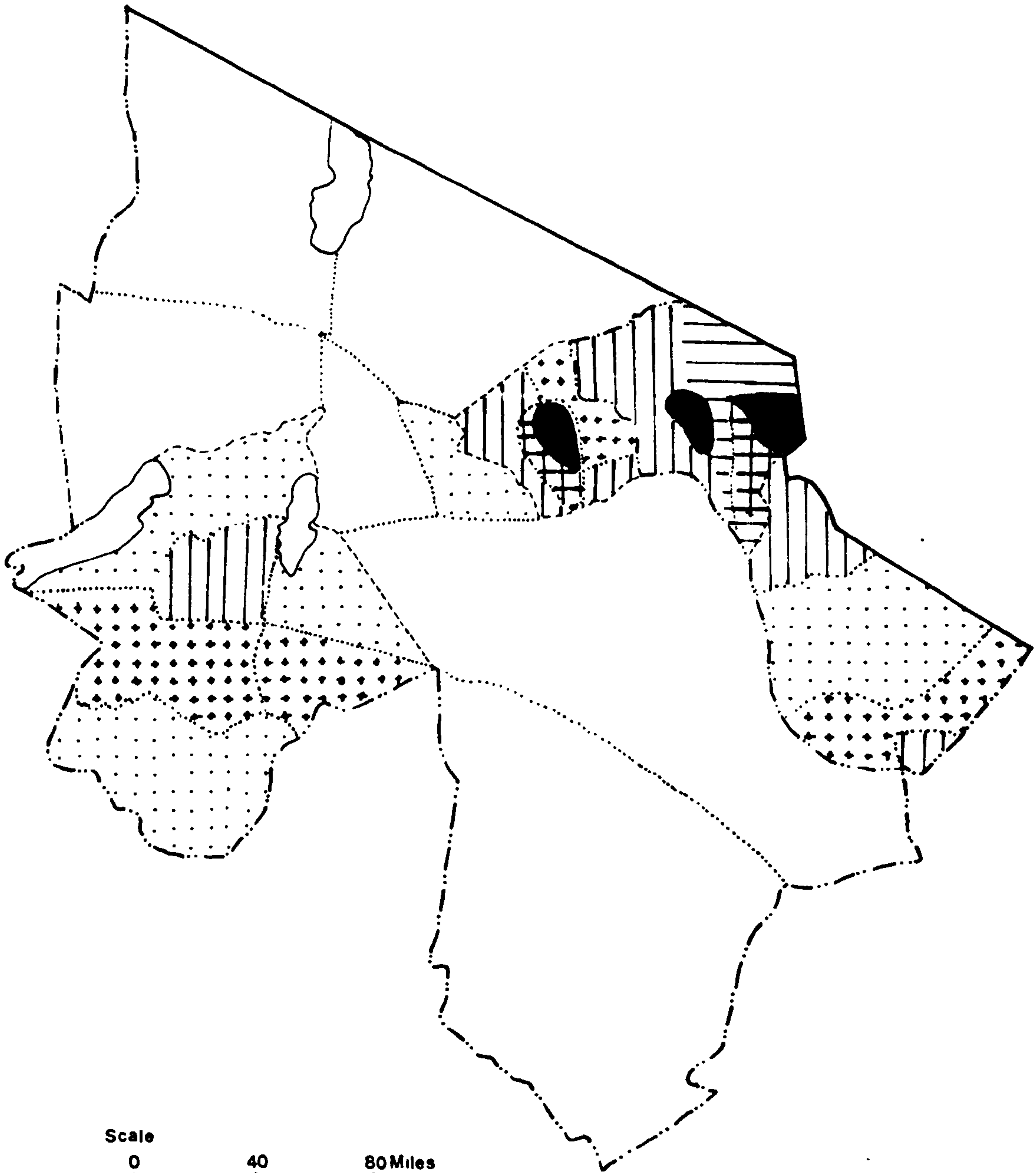
Each group of zones outlined has conditions peculiar to it in relation both to population characteristics and to the broader context of social and economic development. The approach adopted towards planning and implementation of development will therefore, tend to differ between the zones.

Changes in Population Density, 1948-67.

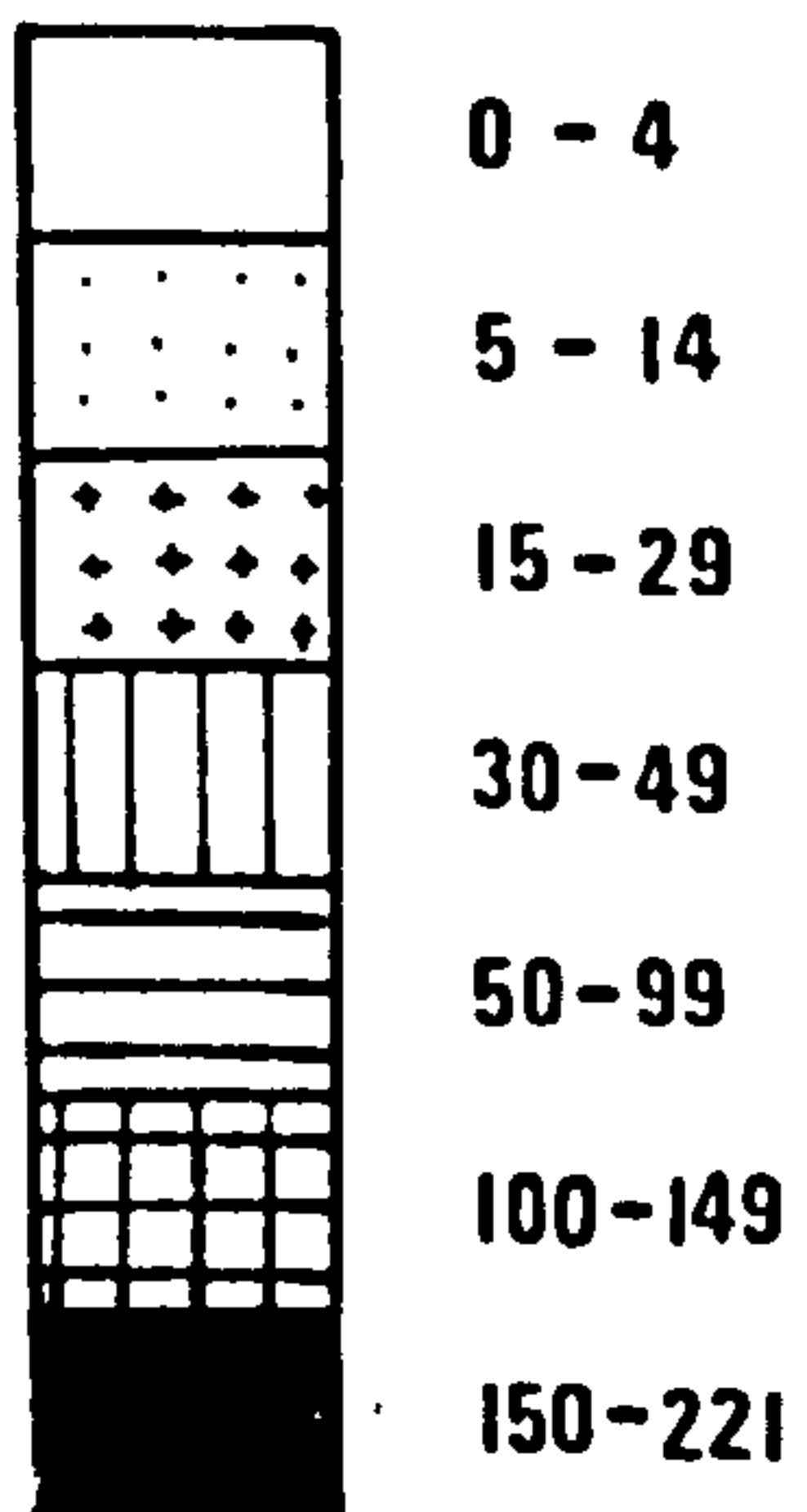
Population density assumes greater importance when considered in conjunction with other characteristics. Of particular importance is the factor of population growth.

Density may be regarded as a measure of the demographic pressure

POPULATION DENSITY



Density per Sq. Km.



on resources, but with population growth the density, and hence the pressure increases. On the other hand, high densities may induce only moderate rates of population growth as a result of out-migration which tends to relieve population pressure, at least to some degree. A further alternative arises in areas in which at present are not under pressure but which, because of high rates of growth, are likely to become so in the future.

All districts in the region have shown increases in density with Kilimanjaro recording the highest increase. The population density here changed from 182.4 per sq. mil. in 1957 to 244.3 psm. in 1967. Since then it has been growing gradually.

On the whole, the pattern which emerges is basically similar to that discussed above since the change in density is an alternative expression of the change in distribution. In general the greatest absolute increases have occurred in the areas which already carry high densities. Most notable of these are Arusha and the already mentioned area of Kilimanjaro. These areas have a high agricultural potential due to fertile soils, well established cash crops and proximity to a major urban market.

POPULATION AND RESOURCES

Besides acting as a quantitative expression of distribution, population density also gives a crude measure of the relationship between a population and its land resources. In this region this is particularly important since the great majority of the population derives its livelihood directly from the land. In some areas, especially the mt. highlands the problems of overcrowding is posing some concern. However, density alone is an inadequate measure of land shortage or surplus. The quality of land, hence the number of people which it will support per unit area varies significantly from one part of the country to another.

For instance, the density of population which can be supported adequately by one sq. km. of land on Kilimanjaro is much greater than that of the same amount of land in Masailand.

E.A. Ackerman⁴ and W. Allan⁵ have considered the problem of the population resource balance in some detail and have devised formulae for its expression. However, in the case of Ackerman many of the variables involved cannot be assigned a meaningful numerical value, while Allan's work is most applicable to a subsistence economy. A more direct approach is that of G.L. Cunningham whose calculations are based on assumptions about the agricultural economy in each district in Tanzania according to its dominant vegetation type (for more details see J.E. Moore⁶,).

The discussion which follows is similar to that of Cunningham in that it attempts to assess the population of each district of the region. Under current agricultural practices, the region is capable of supporting people at adequate levels of income. To this end a number of assumptions must be made. It must be stressed that the results are only tentative and the assumptions open to debate. The aim is not to give a definitive statement of the population carrying capacity of the region. Rather the intention is to show the problem of the population-resource balance as an issue in development planning policy making which is crucial in this region.

5.4 POPULATION-CARRYING CAPACITY IN THE RURAL AREAS OF THE REGION

The population carrying capacity of each district has been calculated⁶ on some assumptions on crop yields, crop prices and extended income levels. The income adopted is 2,500/- gross per standard household of five members, which compares with an estimated per capita national income from monetary agriculture in

1967 of 110/- and a GDP of 478/- per capita⁷.

By using the above procedure, a figure was derived from each district which expresses the total population which that district may be expected to support by agriculture at the given level of income and diet. This figure is then compared with the actual population recorded in 1967. The results are shown on Table 14 in which the value for each district is the ratio for each computed population capacity to its actual population. Values greater than 1.0 suggest under-population or surplus land, while values tending towards zero suggest population pressure or land shortage, if the income level is to be achieved.

It must be stressed that these values do not express an absolute limit either to population number or to income levels. As technology in agriculture improves so too will the productivity of each unit area of land so that the population and income level can rise beyond those given here⁸.

Table 15 summarises the pattern given in table 14. Districts have been classified according to their density in 1967 and their computed population land ratio.

Although these results must be treated circumspectly due to the nature of their derivation, they do help to identify groups of districts in the region with contrasting population problems as well as to suggest their limitations in so far as development is concerned.

The results from these tables go to show the same thing that the Kilimanjaro, Meru areas are overpopulated with shortage of land; the Mbulu area has a population-land balance and the Masai area is under-populated.

Table 14 AREA, CULTIVATION AND POPULATION CARRYING CAPACITY, 1967.

District	Zone	Total Area Less Urban Waste	Cultivable Less Forest Reserve	Crop %	Cropped Area Households	Grazed Area Households	Capacity Pop 1967	Ratio
ARUSHA	a	72920	45598	60	$\frac{27358}{8707}$	$\frac{18240}{1459}$	$\frac{\text{N.A.}}{76695}$	0.42
	b	218760	213296	20	$\frac{42659}{4665}$	$\frac{170637}{508}$	$\frac{181764}{\text{N.A.}}$	
MASAI		6296060	6181934	5	$\frac{309097}{42511}$	$\frac{5872837}{13983}$	$\frac{282470}{106892}$	2.64
MBULU	a	908200	577505	20	$\frac{175501}{37669}$	$\frac{702004}{3343}$	$\frac{\text{N.A.}}{\text{N.A.}}$	1.06
	b	269600	238905	30	$\frac{71672}{43319}$	$\frac{167233}{2090}$	$\frac{307760}{289366}$	
	c	415400	384705	10	$\frac{38471}{5255}$	$\frac{346233}{1030}$	-	
KILIMAN- JARO	a	328689	141884	60	$\frac{85130}{31286}$	$\frac{56754}{4560}$	$\frac{211745}{211745}$	0.44
	b	202311	199808	20	$\frac{39962}{6027}$	$\frac{159846}{476}$	$\frac{211745}{476223}$	
SAME/ PARE	a	157500	127173	50	$\frac{63587}{18362}$	$\frac{63587}{3160}$	$\frac{145400}{145400}$	0.97
	b	787500	44700	12	$\frac{53640}{6778}$	$\frac{393360}{780}$	$\frac{149635}{149635}$	

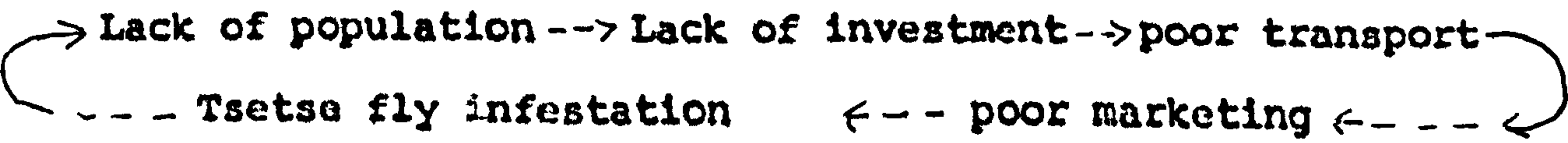
Source: Rural Carrying Capacity for the Districts of Tanzania. BRALUP Research Paper No. 18. Dar.

Table 15 NORTHERN REGION: POPULATION LAND RATIO AND RURAL POP.
DENSITY COMPARED.

<u>Over Pop'd - Ratio under</u> <u>0.80</u>	<u>Pop. Land Balance</u> <u>Ratio 0.80 - 1.49</u>	<u>Under Populated</u>
Density over 25.0 ps Km	Density under 25 pskm	Density under 10 pskm.
Arusha	Mbulu	Masai
Kilimanjaro	Same/Pare	

In the overpopulated areas of Kilimanjaro and Arusha Districts, land shortage is accompanied by soil exhaustion and erosion. Solutions open to such areas include resettlement of the surplus population, maybe in the lower plains or elsewhere; radical changes in the system of agriculture or alternative economic outlets such as industry.

The major problems in the underpopulated areas of Masailand are inadequate or unreliable water supply or infestation by tsetse fly in wide patches of the land. For the eradication of the latter bush clearance is necessary, but this can only be effective if there is sufficient population to prevent bush regeneration. The lack of transport and marketing facilities is also a problem in this area. This lack, however, tends to form part of a vicious circle since the lack of population deters the high level of capital investment required for the establishment of these and other facilities:



In the case of the Districts of Pare/Same and Mbulu whose population and land appear to balance out it must be remembered that the position is not static. Where population growth is

rapid as is the case in Pare district, areas with adequate land under present circumstances may experience overpopulation in the future unless the rate of development keeps pace with that of population growth.

There are therefore serious implications in the relationship between population in the region and the resources available to it especially in the highland zone. Where capital investment is restricted as in the case of most of Masai, parts of Mbulu and Pare, the allocation of funds in the future must depend on a set of priorities in which one of the important variables to be considered is the population itself.

To conclude it is therefore seen that:

- a) The population of the region is highly concentrated into a few, small core zones separated by extensive tracts of sparsely populated country,
- b) Little overall change has taken place in the general distribution between 1948 and 1967. There is, however, some tendency towards expansion of settlement outwards from the highland core zones into the surrounding sparsely populated lower plains.
- c) Population density has been increasing in the highland core zone. Changes in density, however, suggest an increasing tendency towards the concentration of population despite the expansion into sparsely populated areas noted above.
- d) The distribution of agricultural potential and actual levels of economic development in the region is closely correlated with the distribution of population.
- e) Although this region as a whole has surplus land under present agricultural conditions there are some areas, particularly the densely populated core zones of Kilimanjaro and Arusha, which

suffer problems of population pressure and this calls for solution.

5.5 POPULATION MORTALITY

According to the recorded death rates based on recorded deaths, low mortality has been recorded in this region because of its greater economic development and higher availability of medical and other social services.

Life expectancy at birth in the region, as in the rest of Tanzania, in the 1967 census was 53 years and infant mortality per thousand born was 93 with the number surviving to the age of five out of a thousand born being 849.

a) Crude Death Rates for the Region

Table 16

<u>Area</u>	<u>Crude DR 1967 '000</u>		<u>Recorded CDR</u>	
	<u>Recorded</u>	<u>Estimated</u>		
Kilimanjaro R	13.1	13.6	N. Province	<u>1957/58</u>
Arusha R.	20.9	13.6		<u>1967</u>
N. Region	17.0	13.6		
Tanzania Main-land	23.0	-		

b) Crude Birth Rates '000

Area/R	CBR	CBR recorded at district level		Differences in CBR between highest & lowest recorded rates.	No of Districts in Region
		Low	High		
Kilimanjaro	57	56	58	2	3
Arusha R.	56	50	67	17	4
N. Region	56.9	54	67.5	18.5	5
Tanzania	47	-	-	-	-

c) Mortality

Region	CDR	Life expectancy at birth - yrs.	Infant Mortality per 1000 born	Surviving to age of 5 per 1000 born
Kilimanjaro	13.6	53	93	849
Arusha	13.6			
*Main urban	14.6			

Source: Statistical Abstract. op. cit. (Situation improving)

On the other hand, the number of births remained high, especially in the highland zone. The crude birth rate was thought to be 46 per thousand in 1957 and that of 1967 census was 47/1000 for Tanzania. For this region, however, it was 56.5/1000. At district level it went up to 62.5/1000 indicating a fair rise in this period. The difference between birth rates and death rates indicates the natural increase of the population. The higher death rate in the Masai area is explained by the lower standard of living experienced in this area and also the lack of medical facilities - clinics, dispensaries and health centres.

On the whole mortality is going down in this region though there is still high mortality among children in the ages between 1 and 5, possibly connected with weaning. The future seems brighter as more medicine and general health improvement reaches the people.

5.6 FERTILITYAge-Specific Birth Rates and Total Fertility Rate

The total fertility rate - which is defined as the average number of children born alive to a woman who lives to the end of her reproductive life i.e. to age 50 - was 7.5 for the region - which was higher than the national average rate of 6.7 (1967).

In general, the fertility pattern of this region can be referred to as "broad" with a mean of the fertility schedule being

30.1 for Arusha and 30.4 for Kilimanjaro. This high fertility rate of the region is related to the advanced economic development existing here at the moment.

Estimated total Fertility Rates and Birth Rates for the Region

Based on the Female Crude Adult Ratio. Table 17

Region	Total Fertility Rates Females	Birth Rates Males	Birth Rates Females	Both Sexes
Arusha	7.1	47.9	46.5	47.2
Kilimanjaro	7.9	51.6	50.1	50.9
N. Region	7.5	49.5	48.8	49.0
Mainland Rural	6.7	48.1	46.7	47.4
Mainland Urban	4.4	33.7	32.7	33.2
Mainland Total	6.6	47.6	46.2	46.9

A sex ratio at birth of 1.03 was used.

5.7 SEX AND AGE DISTRIBUTION

The sex ratio for this region in 1967 was 99 (Tz. = 93), which is lower than that of either 1957 (102.5) or 1948 (103.5) censuses. A possible explanation for the lowering of the sex ratio has been greater migration of the young men from this area to the other regions and towns in search for jobs. Kilimanjaro district has the lowest sex ratio understandably because the youth here migrate to the urban areas due to lack of opportunities in the rural area.

AGE DISTRIBUTION BY DISTRICTS

The following table shows the child/adult ratios, the recorded and the graduated proportions of the population under 15 years for the region. If the graduated values are accepted as representing the true age distribution of the region's population, then Kilimanjaro region has the youngest population,

not only in the study Region but in Tanzania as a whole. This means that special facilities related to the younger population for example, schools, health services, special children's clinics etc. will receive priority in physical planning of the region. It also means that more jobs have to be provided to absorb this potential labour force.

Recorded Child/Adult Ratios, recorded and graduated Proportions under 15 years for the Region (Females) Table 18

Region	Child/Adult Ratio	Population Recorded	Under 15 years GRaduated
Arusha	0.466	45.9	47.0
Kilimanjaro	0.510	48.5	49.4
Study Region	0.488	47.2	48.2

Proportion of Females under 16 years according to the 1967 and 1957 censuses (recorded data) Table 19

<u>Region</u>	<u>1967</u>	<u>1957</u>
Arusha	47.6	44.5
Kilimanjaro	50.6	47.3
Study Region	49.1	48.9

The regional average figure shown above, indicates that this region has high fertility judging from the relatively high child/adult ratio and the high proportions under 16 according to the two censuses. The lower proportions under 16 in 1957 as compared with 1967 may represent genuine differences and may signify an increasing trend in fertility.

5.8 POPULATION GROWTH: RECORDED AND ESTIMATED GROWTH

The population in the region went up from 882,000 in 1957 to 1,263,000 in 1967 showing an average annual growth of about 3.5%. According to mid-year estimates, the population in the region in 1975 is 1,650,000⁹. As seen earlier the cause of this

growth is the low death rate, a fast birth rate and a gain in in-migration into the region's towns particularly Arusha.

The greatest growth has been in the highland zone around Mts. Meru and Kilimanjaro and Pare. The other districts have experienced moderate growth.

In addition to the population change for the region as a whole, there are significant differences in the amount of growth which the various parts of the region have experienced. Again, this results from differences in the rate of regional increases, for the number of births and deaths in different parts of the region vary according to customary practices, standards of living and the sex-age composition of the population. In here it is worth noting that the more progressive Chagga and Arusha are doing very much better than the Masai and the Mbulu. Again, another important determinant of population change is the amount of in- and out-migration. The urban areas of Moshi and Arusha, and areas of economic development where agricultural expansion is taking place or where non-agricultural employment is available are attracting migrants, while the remaining areas are the source of out-migration.

POPULATION GROWTH: RECORDED AND ESTIMATED GROWTH - 1967 Table 20

1967 Pop. as Compared with 1957 population as estimated & recorded

Region	Pop. 1967	Annual Increase Natural	Less Annual Increase '000	Less net gain or plus loss due to migr.	1957 Pop Est Recd '000 '000	Difference as % of Abs 1957 ol. Rec	
Arusha	610	3.3	170	+71	369 408	-39	-9.6
Kilim.	653	3.7	199	+11	465 474	-31	-6.1
N. Region	1263	3.5	369	+82	834 882	-35	-8.1

Conclusion - Population Composition

- A) The region has a high birth rate with Kilimanjaro having the highest rate in Tanzania. This is due to a number of factors. The fertility rates are high due to higher per capita income, high health conditions and due to patterns in marriage¹¹.
- B) Mortality rates are fairly low due to the good economic, and nutrition and health factors¹².

Future mortality rates will be even lower as the economic and social development of this region increases; and also due to the combined effect of the development of antibiotics and insecticides, the establishment of effective public health organisations and the invention of suitable low cost methods of sanitation.

- C) Due to the above two factors plus the effect of rising immigration into the region, the population growth will continue. If it rises at the current rate or rises to 4% in the '80's then the population might double in two decades.

Table 21 Estimates of Fertility, Mortality and Natural Increase

Districts	Birth Rate	Death Rate	Growth Rate
Arusha*	46	11	3.5
Kilimanjaro			
Masai	51	28	2.3
Mbulu	49	15	3.4
Kilimanjaro*	50	13	3.7
Same	52	15	3.7

*Including Town Population. Source: Henin and Egero. 1987 Pop. Analysis. BRALUP. Dar.

Table 22. Vital Rates Estimates : Regional 1967

Region	Birth Rate per 1000	Death Rate per 1000	Natural Growth per 1000	Natural Growth %
Arusha	47	14	33	3.3
Kilimanjaro	51	14	37	3.7
N. Region Av.	49	14	35	3.5
Mainland Total	47	23	24	2.4
Mainland Rural	47	23	24	2.5
Mainland Urban	33	17	18	1.8

5.9 POPULATION IN TOWNS

The population in the towns in this area will be discussed in full in the section dealing with urban development which will come later. Here, it can be noted that by 1967, the main centres of Moshi and Arusha had a population of 26,864 and 32,452 respectively whereas the other smaller towns were trailing behind with some having a population of 3,330; Arusha Chini (6,018); Himo (967) etc.

The population growth rate in the main centres is very great with Arusha having the greatest growth rate in Tanzania (12.4% in 1957 and 1967). Moshi recorded a growth of 7% between the same period.

With such a fast growth rate these towns will face a grave problem in the future especially in the supply of social services, employment, housing etc. Physical planning measures are called for to plan how to accommodate this population now and in the future.

5.10 MIGRATION

Knowledge about the movement of the population in the region is fundamental for the understanding of social change, economic development and political organisation. It is an important element in the history of the region and an essential component

in the planning of its future.

Migration, having a great number of aspects - social, economic, spatial etc. - and being a matter of cause as well as effect of societal processes is an issue of increasing importance today. It is particularly important and significant in manpower and regional planning in this area.

Immigration

Ethnic Groups

Of all non-Africans only the European population has a substantial proportion of its members born outside the country. Most of these settled to do farming in the area around Kilimanjaro and Arusha where the climate is favourable for them. Their numbers may decrease in the future as more and more of their farms are nationalised by the government. For the others immigration has declined to such an extent that the majority of the present community were born in Tanzania.

The Asian population, growing in number particularly during the colonial era, has since independence experienced emigration large enough to outbalance the natural increase from births and deaths.

The European population has been the most heterogeneous one and has been subjected to high turn over. The Germans at the beginning of the century were replaced by the British who have been there since then.

Tanzania Border Crossing Migration into the Northern Region

The total number of immigrants into the region from the neighbouring countries was 29,340 in 1967 out of which 19,716 came from Kenya alone¹³. This is due to the fact that this region shares a common boundary with Kenya, and so movement between the two areas is very common. In addition a percentage of the

above immigrants are workers in the East African Community Hq., based at Arusha and these come from Uganda as well as Kenya. The rest come as far away as Mozambique, Rwanda, Burundi, Malawi etc.

NUMBER OF IMMIGRANTS FROM NEIGHBOURING COUNTRIES Table 23

<u>Country</u>	<u>Movt. Into Arusha Region</u>	<u>Movt. Into Kilimanjaro R.</u>	<u>Study Region</u>
Kenya	7512	12204	19716
Uganda	287	672	959
Rwanda	299	1422	1721
Burundi	670	1364	2034
Congo (Zaire)	310	351	661
Zambia	321	635	956
Malawi	450	721	1171
Mozambique	227	1895	2122
Total	10076	19264	29340

Source: MIGRATION IN TANZANIA: BRALUP. Research Notes No. 11.3.

Dar es Salaam University, Dar.

Most of these neighbouring migrants come to the region partly looking for jobs (especially temporary work), partly individuals, families or groups having the intention to settle down more permanently in the region, partly refugees. The map below shows all regional streams into the Study region.

INTERNAL MIGRATION

Migration Streams Between the Region and Other Regions in the Country

Since the urban component in the regional outmoving streams, because of its size, is insignificant for the purposes of this study, the region-to-district streams are regarded as Rural-to-Rural migration, and the Region-to-Town streams as Rural-to-Urban

migration. One real rural-urban stream is contributed by the migrants moving from the rural areas of the region to the urban areas of e.g. Moshi, Arusha, Same, etc.

REGIONAL CHANGE

REGIONAL POPULATION BY BIRTHPLACE CATEGORY - PERCENTAGE Table 24

Admin. Region	Same Locality	Same Region	Other Reg-ions	Neigh. Count's	Other Count's	Total
Arusha	52	32	14	2	1	100
Kilimanjaro	76	14	6	3	-	100
N. Region	64	23	10	2.5	1	100
Mainland Total	58	30	9	3	-	100
Mainland Rural	59	30	8	3	-	100
Mainland Urban	34	27	30	5	4	100

Source: MIGRATION IN TANZANIA: op. cit. pg. 49.

Net Population Exchange Between this Region and other Regions in Tanzania.

The pattern of exchange between this region and other regions in the country is indicated in table 25a and (b) on page 105. The difference between men and women are immediately apparent from the tables. The men generally move more than the women and they cover longer distances. But in the movement within the regions the women dominate. The majority of the people who move into the region come from these regions: Dodoma, Singida, and Tanga. - all adjacent to this area. There is a lot of movement between Kilimanjaro and Arusha admin. regions, most of whom are Chaggas looking for jobs in Arusha town where opportunities are better than in Moshi.

Table (a) Net population exchange between regions.

	Aru	Coa	Dod	Iri	Kig	Kil	Mar	Mbe	Mof	Mtw	Mwa	Ruv	Shi	Sin
Arusha	-	-	13603	391	852	15771	89	2226	882	388	1345	805	-	16026
Kilimanjaro	-	-	634	175	733		983	2695		687	329	1202	-	4326
Total Loss	-	-	14237	566	1587	15771	1072	4885	882	1075	1674	2007	-	20352

Tab Tan WLa Zan Total Gain

Arusha	1200	4566	358	193	58695
Kilimanjaro	941	1330	495	127	14621
Total Loss	2141	5896	853	320	73316

*The table shows, horizontally each region's net gains; vertically each region's net losses.

Table (b) Regional in-, and net migration.

Region	Immigration			Outmigration			Net Migration	
	Male	Female	Total	Male	Female	Total	Male	Female
Arusha	52231	30804	83035	13443	11876	25319	38788	18928
Kiliman.	26868	14163	41031	33726	18313	52039	-6858	-4150
Total	79099	44967	124066	47169	30189	77358	45646	23078

Table 25a gives the net result of the regional exchange between each pair of regions. In general Arusha Adm. region has a greater net gain than Kilimanjaro. If attention is turned to overall net results of the interregional migration the region retains a lead in its population gains with most of the immigrants moving to the Arusha area.

Also, movement within the region shows that there are more people moving from the Kilimanjaro area into the urban area of Arusha in search for jobs since most of the people in and around Arusha (the Masai and Meru) are basically rural and do not prefer moving out of the region.

MIGRATION TO DISTRICTS

The following account breaks down further to show the movement of the regional population to the various districts of the region. However, with the figures available, only a restricted comparison between districts of the regional figures for the birthplace categories is given. These figures are given in the table below, in which the districts are listed according to the percentage for migrants born in other regions.

District Population by Birthplace Category, Percentage Table 26

Districts	Same Locality	Same Admin. Region	Other Regions	Other Countries	Total
Arusha	61	17	19	3	100
Masai	60	24	14	2	100
Mbulu	46	46	7	1	100
Pare	72	18	7	3	100
Kilimanjaro	80	12	5	3	100

There is relatively a great variation among the districts in the region regarding the impact of migration. The main reason for attraction to this region is jobs found mostly in Arusha town where records of migrants from other regions is highest. Kilimanjaro has a low total because of the lack of such job opportunities.

Most movements within this region, as in the rest of Tanzania, are short distance moves, taking place within the districts themselves.

MOVEMENT TO URBAN AREAS

Movement to urban areas is caused by a number of factors - both 'push' and 'pull'. In the majority of cases people move into the towns in search for a better living terms of a job paying good wages.

The growth of the urban population in Tanzania, recorded as around 6% annually in the period 1957-67, is a sign of considerable immigration. Since the natural increase can be assumed to be about 2%, the above growth figure means that $\frac{2}{3}$ of the urban growth is the result of migration.

In this region, of the total urban population about 30% are born in the town of residence (esp. Moshi and Arusha); 22% in the Same Region; 36% in other regions; 7% from the neighbouring countries and 4.5% from other countries.

Thus, the region/zone surrounding each town is far the most important source for recruitment and the neighbouring regions send around three times as many people relative to their population as do most distant regions. Measures to curb or contain this rapid rural-urban movement are called for either by making the rural areas more attractive by locating cottage industries there or by the new system of Ujamaa villages.

URBAN POPULATION BY BIRTHPLACE CATEGORY, PERCENTAGE Table 27

Town	Same Locality	Same Region	Other Regions	Neigh. Countries	Other Countries	Total
Arusha	30	13	46	6	5	100
Moshi	30	31	27	8	4	100
Dar es Salaam	33	24	35	4	4	100

AGE AND SEX OF MIGRANTS

Population movement largely consisting of labour migration, tends to be selective as regards sex and age. It is naturally dominated by men in the working ages. However, to the extent that they settle at their place of work, their move may lead to subsequent migration of women and children.

In this region, male dominance and the excess of young adults are particularly typical for the rural-urban migration. The rural-rural migration, usually in search of new land, involves more than the former, the whole family. For example a number of families have moved from the Kilimanjaro area to places like W. Meru and Mbulu in search for agricultural land. These families have settled there permanently except the occasional visits to their relatives still left in the mountain area.

The demographic impact of migration on the urban areas in the region is rather obvious, since these urban centres generally have positive "net migration", and receive migrant populations with surplus of males from the same region as well as other regions.

The effect of migration on the rural areas is more complicated to appreciate since the net results in an area of the region depends on firstly, the relative importance of different destinations of the out-migrants, (urban destinations reduces the number of men more than the number of women; rural destination

reduces the number of women than the number of men), and secondly the relative importance of the different categories of source areas for the immigrants, (movement within the same region provides more women than men, and movement to other regions provides more men than women).

As for age, it is seen that most of the migrants are adults, with the peak being about 40 with children.

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CHAPTER 6

EMPLOYMENT AND INCOMES IN THE REGION

Introduction

The economic base of this region is largely dependent on the very fertile and well-watered agricultural lands of the mountain zone as well as on industry and tourism based on the several national parks located in the region. This being the case, it is obvious that many of the workers earn their living from the land and also the service sector.

In this section an analysis of the region's employment and unemployment situation will be examined to identify the need for action. The examination covers the amount and trends of employment; its distribution; structure; urban and rural employment situation and problems; labour force and wages and lastly, the problem of school leavers in the region. Part I of the section covers General observations about employment and Part II will examine the problem of unemployment more closely in order to appreciate the problem confronting this area.

PART I

THE EMPLOYMENT SITUATION IN GENERAL

6.1 AMOUNT AND TRENDS

Employment opportunities in this region have risen slowly over the past few years, and though small, it provides the livelihood of many people in the region. The total employment in the region for 1966 was 51,509 and this went up to 57,468 (1971)¹ showing a percentage increase of 11%. Although current figures are not available, it is safe to assume that there has been gradual growth in employment since 1971 because several new industries have been established in the region since then - in line with the proposals contained in the ending Second Five

Year Plan. Although the regional employment total has been going up, there are regional and district fluctuations - for example some of the rural areas in Arusha have experienced a decline in jobs.

Table 28 TOTAL EMPLOYEES IN THE REGION 1966-71

Region	1966	1967	1968	1969	1970	1971	%Change
Arusha	27775	26150	26555	24843	26219	24167	-7.8
Kiliman,	25734	26620	26356	27893	27123	32301	+19.1
N. REGION	51509	52780	52911	52736	53342	57468	+11.3
<u>Annual Wage Bill. Mil. Shs.</u>							
N. REGION	142	155	150	161	164.1	-	

Index: 1967 = 100/-

Source: District Data op. cit.

Table 29 EMPLOYMENT DISTRIBUTION BY DISTRICTS, ARUSHA ADMIN. REGION 1967.

District Sector	Arusha Town	Arusha Rural	Arusha Dist.	Masai Dist.	Mbulu Dist.	Arusha Region	Urban in % of Region Emplt	in % of Wage Bill
Agricult.	1160	8130	9290	550	4040	13880	8.4	16.3
Mining	20	10	30	-	-	30	66.7	66.7
Manuf.	1930	340	2270	10	10	2290	79.1	84.9
Construct.	1390	220	1610	-	1280	2890	53.9	17.4
Elec. Water	450	-	450	-	-	450	100.0	100.0
Commerce	1720	100	1820	10	40	1870	96.1	92.1
Transport	710	20	730	-	10	740	62.2	93.5
Other Se's	1870	490	2360	290	1500	4150	45.1	60.1
Total	9250	9310	18560	860	6800	26300	35.4	49.9

Table 29b EMPLOYMENT DISTRIBUTION BY DISTRICTS: KILIMANJARO REGION 1967.

District	Moshi Town	Kilim. Rural	Kilim. Dist.	Same Dist.	Kilim. Region	Urban in % of Region Emplt Wage Bill '000	
Agric.	260	11500	11760	1260	13020	2	3.5
Mining	10	30	40	210	250	4	20.0
Manuf.	1470	450	1920	110	2030	72.4	79.1
Constr.	1380	47	1850	950	2800	49.3	44.7
Elec. Wat.	950	-	950	-	950	100.0	100.0
Commerce	1170	400	1570	100	1670	70.1	86.5
Transport	410	30	440	20	460	89.1	90.0
Other Se's	1810	320	2130	1320	5450	33.2	30.0
Total	7460	15200	22660	3970	26620	28.0	3.5

Source: Tanzania District Data: op. cit. pp. 1 and 25.

6.2 EMPLOYMENT DISTRIBUTION

Employment in the region is largely concentrated in the Arusha and Kilimanjaro Districts where the land is suitable for agriculture, and in the urban areas especially in Arusha and Moshi. In this zone, well over half of the total employment opportunities are located as the District figures in Table 29 show.

Overall in Arusha admin. region, we find 35.4% of the total jobs are located in the urban areas of Arusha, Mbulu and Babati and the rest is located in the rural areas mostly in coffee, wheat and other estates. On the other hand, in the Kilimanjaro region we find only 28% of the total jobs found in the urban areas of Moshi, Same, Himo and the other smaller towns.

The case of the latter is because of the dominance of Arusha town which is bigger and more prosperous than Moshi and secondly since it was designated the Hq. for the EAC the number of jobs have risen moderately. Rural employment dominate in the Kilimanjaro zone on account of most of its people engaged in intensive farming and others working in the European coffee estates in the region.

The number of jobs recorded in the Masai District is obviously very low because there are very few opportunities for paid employment. Much of the employment here is that associated with the tourist trade (work in hotels and lodges in the national parks in this zone) or in a few farms in the eastern area.

6.3 EMPLOYMENT BY INDUSTRIAL SECTOR

a) Employment in Agriculture

As in any subsistence economy area, the main employer in this region is agriculture, which employs just over half of the employees. This is followed by the service sector and then manufacturing. Most of the employment in agriculture (26,900 out of a total of 52,780 in 1967) has been in the cultivation of cash and food crops (Sisal, cotton, coffee, wheat, maize and other crops). Unfortunately, because of the decline in world prices of coffee and sisal, the expansion of the acreage of these crops has slowed down and this in turn has affected the job opportunities in this sector. Between 1966 and 1970 agricultural employment fell from 27,000 to 20,832 with Arusha's recorded loss being the greatest.

Since the life of this region is very much dependent on this sector serious steps are needed to foster employment in this sector or find other employment outlets for those who lose their jobs in agriculture.

b) Employment in the Manufacturing Sector

Industrial employment on the other hand, has risen slowly in the region as new industries were established in the regional towns of Moshi and Arusha. New industries established in the region since 1964 include the Philips radio assembly plant and a tyre manufacturing plant in Arusha and miscellaneous other industries in Moshi.

As seen earlier, the majority of the industries here are involved in agricultural processing, textiles, footwear, furniture manufacture etc. Employment in this sector went up by 1,200 between 1964 and 1967. By 1970 the number employed was 4,635, and today the number stands near the 6,000 mark with all the industrial expansion that has taken place.

Employment in mining is very small, and the little there is is associated with the meerscham pipe making industry and quarrying in Arusha.

c) Service Sector Employment

This sector of employment incorporates commerce, central and local government, construction, public utilities and miscellaneous other services. It employs 40% of the total wage employment in this region. Two-thirds of these are engaged by government and the others are employed in the remaining sectors. Total service employment in 1967 stood at 21,100.

Employment in all sectors has been rising especially in the Kilimanjaro area. As expected a lot of this employment is associated with the urban areas and in the rural administrative re-district headquarters.

6.4 EMPLOYMENT STRUCTURE

As far as the structure of employment is concerned we find that the main employer in the public sector is the service sector followed by construction, agriculture and transport. On the other hand, the private sector employs people in the commercial sector, manufacturing and agriculture (estates). Overall, employment in the public sector is slightly over half the total employment in the region and most of this employment is found in the urban areas.

RURAL/URBAN STRUCTURE

In general, the industrial distribution of the economically active population in rural and urban areas is not balanced. The rural economy is primarily agricultural based with 91% of the total active population participating in agricultural activities. In the urban areas the three groups of industries—service, commerce and manufacturing — account for 60% of employment while the contribution from the above three industries in the rural areas is only 4%. This characteristic of the urban-rural split is more significant of the rural society than of the urban society. Key economic activities such as services and communications are greatly under-developed in the region. This is characteristic of an agricultural based economy that is largely non-monetised.

In the urban areas, the pattern of industrial distribution for males and females is somewhat different: The highest proportion of males is found to be in services, followed by commerce, manufacturing and communication. For females, the principal field of employment is equally shared by agriculture and services (38% each). The high percentage on urban females in agriculture indicates that urbanisation has not changed the role of females as the major agricultural producers. Urbanisation in the region, seems to have greater impact on male distribution. Males drop their roles in rural agriculture and assume jobs in commerce, manufacturing and transport.

CITIZEN EMPLOYEES AND EMPLOYMENT STRUCTURE

Approximately 70% of the total employees in the region are citizens (1967 census), with the remaining composed of aliens, both Europeans, Asians and other migrants from the neighbouring E. African countries.

The majority of Europeans are engaged in the technical field - teaching, medicine, engineering etc., whereas the majority of the Asians engage themselves in commerce and industry. These aliens and foreigners mostly work in the urban areas, although a few - e.g. those engaged in medicine and teaching - do still work in the rural service centres (colleges and hospitals).

For the locals, the majority work in industry and in agriculture, especially in estates, either owned by the government or by private individuals (mostly Europeans).

SEX DIFFERENTIALS IN ECONOMIC ACTIVITY

The structure of employment is highly biased towards males with only very few women engaged in paid employment. Most of the women work at home in the fields, so initially they should not be classified as unemployed. For example, in 1969, 91% of the total employees in the region were men, leaving only 9% composed of females and youngsters. This imbalance causes some problems which will be discussed later in this chapter.

Taking the Tanzania average figures and applying them to this region we find that among the male population aged 15 and over, 86% were employed and 3% were unemployed. In the case of females this was only 71%. Among the population "not in labour force", the females outnumber the males by far.

TABLE 30 CITIZEN EMPLOYEES AND EMPLOYMENT STRUCTURE

Year	MALE		FEMALES		Young Persons*		Total		Regional Total Citz. N/C
	Arusha	Kilim.	Arusha	Kilim.	Arusha	Kilim.	Arusha	Kilim.	
1966	17263	17145	884	983	257	230	18404	18358	36762 14747
1967	18075	16923	964	1067	172	243	19211	18233	37444 1532
1968	17254	16338	1138	1367	153	148	18645	17853	36398 16513
1969	16087	15940	1376	1273	147	355	17610	17168	35778 16958

*Young persons includes all employees under the apparent age of 15 years.

6.5 REGIONAL LABOUR FORCE

Economically Active Population by Age-Group and Sex

The table below gives the numbers of active male and female population in different age groups for this region. The labour force participation rate varies only slightly between men and women. For Kilimanjaro, the active female population is slightly higher than that of men indicating an active outmigration of the menfolk to the towns in search of jobs and education.

TABLE 31 POPULATION BY SEX, AGE GROUP AND DISTRICT - 1967 Census

Region/ District	Below 15 yr	15-49 years	50 yr Above	Not Stat- ed	Below 15 yr	15-49 years	50y +	Not Stat- ed	Total
Arusha R	140977	138425	33393	205	136380	134551	26018	115	610064
Arusha d	47308	53771	11125	84	46970	45616	8807	66	213747
Masai d	22615	22495	8156	53	22347	25267	5819	6	106758
Mbulu d	71054	62159	14112	68	67063	63668	11392	43	289558
Kilim. R	163597	118722	36438	151	161876	134962	36811	101	652658
Kilim. d	120582	84210	26655	63	119668	98074	27278	60	476596
Pare d	38062	25485	8877	40	37499	30578	8888	26	149450
Moshi Twn	4953	9027	906	48	4709	6310	645	15	26613
N. REGION	304574	257147	69831	356	298256	269513	62829	216	126272
Tz. Main-land	2648122	2452524	724081	3110	2598,707	2811,230	701,085	2578	119514

Thus, it is apparent that since only 57,780 people were employed in the formal sector (1967) plus about 10,000 in the informal sector out of a labour force of 600,000 people, that the region has a surplus labour force which can be utilised if employment is available in the region. Without enough employment here, people will have to go to other areas in search for a living.

Regional Labour Force in Percentage²

The population sizes by economic activity for the region is presented on the table on page 121 basing the calculation on the known national average figures. Of the total regional population, 50% are found to be gainfully employed both in the formal and informal sectors; 2% unemployed; 6% engaged in household duties and 10% attending educational institutions regularly. 42% of the total population is not in the labour force, these include housewives, students and 'others'.

The total labour force participation rate in the region is 52%, just slightly higher than the national average of 48% (See Table 32).

POPULATION AGED 15 YEARS AND OVER ECONOMIC ACTIVITY

In many a country, the analysis of economic activity is restricted to the population aged 15 and over because of the comparatively lower participation in economic activities by children under 15. Although the exclusion of children under a specific age from the total population gives a refined measure of activity, this may exclude a considerable number of children in a predominantly agricultural economy as this region, who participate in the labour force however small their contribution may be. In Table 33, the economic activity of the population aged 15 and over is presented for the region based on the national average figures for 1967. The percentage of the labour force population aged 15 and over is 83%.

Table 32 POPULATION BY ECONOMIC ACTIVITY. PERCENTAGE OF LABOUR FORCE

<u>Economic Activity</u>	<u>Regional %</u>	<u>Tanzania %</u>
1. Employed	50	47
2. Unemployed	2	1
1-2. Labour force participation	52	48
3. Homemaker	6	6
4. Student	10	8
5. Others	26	37
3-5. Not in labour force	42	51
6. Not Stated	2	2

Source: 1967 Population Census.

Table 33 POPULATION AGED 15 AND OVER BY ECONOMIC ACTIVITY

<u>Economic Activity</u>	<u>Regional %</u>	<u>Tanzania%</u>
1. Employed	80	79
2. Unemployed	2	1
1-3. Labour force participation	82	80
3. Homemaker	10	10
4. Student	3	3
5. Others	4	6
3-5. Not in labour force	17	19
6. Not Stated	2	2
TOTAL	100	100

6.6 REGIONAL INCOMES AND WAGES

This section aims at analysing the regional personal wage incomes from employment both in the urban and in the rural areas. The pattern of incomes in the region is that: those employed in the urban areas earn more money than those employed in the rural areas; secondly, well over half of the labour force earn a

a salary of between 200/- and 500/- and thirdly, wages for men are higher than that for women.

An examination of the distribution of adult male citizen employees by wage group shows a spectrum of income levels, which range from 100/- or less per month at the bottom for a significant number of people, both in the rural and urban areas, all the way to a small group of persons at the top of the scale with wages above 1,000/- p.m., who comprise of owners of large and medium-sized agricultural enterprises, big farmers, independent professional people and holders of high level jobs in the formal sector. The minimum wage for workers up to 1970, was 150/- p.m. but this has gone up to 200/- (1972). This was later revised in 1974 to be 340/- for workers in towns and 240/- for workers in the rural areas.

As expected, most of the people earning high salaries have jobs in the urban areas with an exception of the few self-employed big farmers in the rural areas. In 1970 only 12% of the workers were earning more than 500/- per month; 30% were earning between 200 and 500/- p.m.; 41.5% were earning between 100-200/- p.m. and 16.5% were earning less than 100/- p.m.

The middle-income group includes a significant proportion of the employees in the non-agricultural formal sector, a sizeable proportion of smallholders and a small proportion of owners of small non-agricultural enterprises.

The identification of the low income group i.e. below 100/- p.m. is of paramount importance because it calls for the improvement of incomes and employment opportunities for house-

holds within this wage level. This low income group has to be helped if the standards of living in the region is to improve.

ANNUAL WAGE BILL

While employment has been declining in some sectors, the wage bill has been rising over the years. The structure of earnings differ between men and women, and also between citizens and non-citizens. Naturally more men are employed than women both in the towns and in the rural areas and therefore the wage bill is higher for the men than the women. Non-citizens, most of whom are Europeans, earn higher salaries by virtue of their training and expertise. The table below shows the total amount of the annual wage bill for 1970. It also shows that, apart from earnings from regular work (146.8 ml. shs.), earnings from casual work amounted to 16.7 mil. shs. Most of this amount came from the informal sector, a sector which tends to be forgotten about in most employment policies.

Table 34 TOTAL ANNUAL WAGE BILL - 1970 Million Shs.

Region	Male	Females	Young- sters	Total	Male	Female	Youn- gster	Total
Arusha	52.5	4.9	0.1	57.5	14.3	1.0	-	15.3
Kilim.	58.0	5.5	0.2	63.7	9.4	1.0	-	10.4
TOTAL	110.5	10.4	0.3	121.2	23.7	2.0	-	25.7
TZ. TOT.	1036.9	99.4	3.1	1139.5	215.2	15.9	-	231.2

It is useful at this point to say a few words about income and wage inequalities. The picture presented is that it is highly misleading to talk in terms of average rural and urban incomes. In both rural and urban areas there is a high degree of income inequality. As indicated above, wages in Tanzania

were raised lately, with the minimum wage for rural workers fixed at 140/- whereas that of urban workers is 340/- p.m. Thus the yearly income for rural workers is £84 compared to the urban rate of £204. In addition we find masses of workers in the informal sector who do not even go higher than £60. p.a. This rural/urban imbalance in incomes encourages people to seek jobs in towns since there is more pay (although expenditure is also relatively higher here) and hence fosters migration.

Owners of large farms, a sizeable number of better-off farmers (especially along the highland zone), many owners of non-agricultural enterprises as well as the highly skilled agricultural employees in the formal sector and the majority of rural non-agricultural employees in the formal sector can be described as relatively well-off, i.e. with incomes in excess of 500/- p.m. and over (£300 p.a. and over). On the other hand, nearly 25% of urban employees in the formal sector, and the majority of urban employees and self-employed persons in the informal sector, must be counted among the working poor. Most of these poor people live on the outskirts of the urban areas in very poor conditions.

PART TWO

6.7 DETAILED ANALYSIS OF THE SCOPE AND NATURE OF THE EMPLOYMENT PROBLEM.³

Before analysing the situation of employment in the region we try to see the scope and the nature of the unemployment facing the study area. There are in the first place three distinct types of problems underlying concern with the employment situation as has emerged earlier. The frustration of job seekers

unable to obtain the type of work they think is reasonable, or which their education has led them to expect; the low level - in fact the poverty level - of incomes obtained by man producers and their families as the return of their work, whether it is self or family employment or in wage employment; and the under-utilisation and low productivity of the labour force, both male and female, which reflects inefficiency in the way labour is trained, deployed or supported with the other resources in the region.

The analysis puts the greatest emphasis on the second of these problems, the poverty level of returns from work, because ultimately this is the most pervading and basic issue. However, it is also important to deal with the other two - For young persons, whether educated either with a frustrating round of job seeking or animated by recruitment at missing opportunities which they feel they deserve is hardly a good way for them to acquire the experience and work attitudes required for a productive life, nor does it augur well for social stability. As regards the third problem, increased labour utilisation and productivity is an increase in production leading to improved living standards, particularly among the poorer people.

The people of this region are affected by all of these problems, but different groups are affected by different employment problems in different ways and in different parts of the region: the problems differ between men and women, between school leavers, other young people and older persons, and between people in the semi-arid areas of the Masai Steppe and in the overpopulated districts and elsewhere.

There is not one cause of the employment problem but many. Most of these causes are, in one way or another, aspects of imbalances - the imbalance between the growth of the labour force, the urban population and education, and the overall growth of the economy, and the imbalance between people's aspirations and expectations of work and the structure of incomes and opportunities available in the region.

Both types of imbalance are related to basic trends and features of this region's and Tanzania's economy. Here the starting point is the country at large and its productive structure, inevitably still influenced by the colonial era. The Tanzanian economy is not one which is isolated: it is part of the world economy and so it fluctuates with world occurrences.

Some other imbalance has been that some part of the region due to favourable climate and soils have progressed further than others. Education too, has contributed to this imbalance and made clear its consequences in intensely personal terms. Those who succeed within the school system obtain the certificates and the good jobs - or did at first. But as education expanded fast, among a population itself fast expanding, thousands of citizens in this region, with their parents and other supporters, are beginning to find their certificates worthless, at least for obtaining jobs. First it was the primary school leavers, now those with school certificates, soon those with university arts degrees. This is the background to frustration among school leavers and their families.

What is the solution? If the problem is primarily lack of jobs, the solution must be in the provision of more jobs. But if the problem is primarily an imbalance in opportunities:

the solution must be to put right the imbalances: simply to provide jobs within the existing framework of imbalance may make the problems worse. More urban jobs for secondary school leavers at existing salaries are likely to give rise to a more than proportionate increase in the demand for them, and thus in secondary school enrolment and internal migration. Hence there will be emphasis on putting the imbalances, on equity in place of gross inequity, in earnings, education, land holdings, among districts and individuals, in other respects.

For most of the rural population, the actual question is not the availability of jobs, in the sense of paid work for others, but the availability of land, together with the knowledge and supporting services to farm it well and obtain a reasonable income. For those with land, there is usually no lack of things to do, in general, no involuntary "unemployment" (though there can be unemployment during drought for example).

But there are problems of employment, most notably a lack of opportunities for employment. Those with small plots (especially in the Kilimanjaro district due to sub-division), with land of inferior quality or in areas of little or unreliable rainfall (especially Masailand) are usually engaged in a continual struggle to keep above the margin of poverty, and even to get enough to eat. A related, though often separate problem, and for those with somewhat more land is the need for cash: cash for taxes, school fees (in case of private schools), for a mass of minor purchases and — for the better farmers at least — for the hybrid seeds, fertiliser and other things needed to raise their levels of output. A lack of crops for sale leads many families to seek a direct source of cash, perhaps from a relative

working for wages. Others, particularly the young and educated, migrate to the towns and seek jobs there, joining other urban wage earners most of whom still maintain close links with their rural base.

A) RURAL EMPLOYMENT AND ITS PROBLEMS

The estimated population of the region is currently 1,651,000 people in 1975⁴ and its annual growth rate is 3.7%. With this rapid rate of population growth - even allowing for migration - means that access to land, which is very much related to the pattern of rural employment and income earning ability, will become increasingly important.

As seen earlier, the majority of the population (90%) live in the rural areas where salaries are very low since they are employed in the sectors not associated with urban areas (commerce, manufacturing and industry). Because of their nature, wages are higher in towns and this acts as a catalyst in attracting more workers from the rural areas to the urban areas. Great concentration of farming and hence farming employment, is clustered on the fertile soils in the highland zone and some of the fertile plains in Mbulu where wheat is grown. The rest of the land is owned by numerous smallholder farmers and so there is very little paid employment, if any.

Table 35. RURAL EMPLOYMENT BY SECTOR. PERCENTAGE

Sector	Arusha Rural Region %age	Kilim. Rural Region %age	N. Region %	Wage Bill '000 shs.
Agriculture	92.6	98.0	94.8	83.7
Mining	33.3	96.0	64.7	33.3
Manufacturing	20.9	27.6	24.3	15.1
Construction	46.1	50.7	48.4	82.6
Elec. and Water	00.0	00.0	-	-
Commerce	3.9	29.9	16.9	7.9
Transport	37.8	10.9	24.3	6.5
Other services	54.9	66.8	60.9	39.4
TOTAL	646.0	72.0	62.3	268.4*

*Excluding self-employed etc.

From the above information and general observation, it is possible to piece together a general picture of incomes and employment in the smallholding sector. At the top, there is a group of farmers, mainly in the high potential areas of Arusha and Kilimanjaro districts, who have rapidly increased their incomes over the past decade. These are for the most part farmers who have benefited from settlement and irrigation schemes. Their cash incomes are derived from the sale of coffee, livestock and dairy produce. Such farmers tend to employ or hire workers on a full time or part time basis.

Below the smallholders with the largest incomes there is a substantial number of smallholders who have been able to commercialise their operations to some extent, but so far with limited effects on returns. They may hire seasonal labour paying them in kind, or under some arrangement for mutual labour.

Finally, we come to the majority of farming families, in the medium-potential areas, who at present lack the ability to raise the productivity of their land more than marginally. Their income from farming their own land is usually less than £60 a year on average including the value of food crops. This is a very great group indeed. It is inevitable that at this low level of agricultural production and income these families must either exist in extreme poverty or must obtain income from sources other than their own farms by seeking work in the rural areas or in the towns. Many will receive some help from household members working in towns. However, out of the rural families, there are at least some who do not have additional incomes, or who are squatters on land which they do not own, or who are completely land-less. This group comprises most

of people who are referred to as the "rural working poor"⁵ and account for a substantial part of the employment problem as it exists in this region today. Their case will be discussed later on in this chapter.

Seasonality of Labour Demand and Supply

There are, however, several factors which make it difficult for a person to take wage employment or for employers, particularly smallholders, to expand the number of people they can employ. The major factor in both sides is probably seasonality. In this monsoon climate, peak periods of labour demand are at times of planting, weeding and harvesting. This applies particularly to food crops, especially hybrid maize, or to cash crops - the harvesting of coffee. Thus the demand for hired labour, especially casual labour, is frequently at its peak just at the time when the need for potential wage earners to work their own family holdings at its highest. This difficulty tends to be most from an additional source of cash income. In the vast majority of these cases the male head of the household, perhaps with other adult male members of the family, seems to have migrated to urban areas in search of work. This leaves a depleted family labour force who at peak work times may not be able to cultivate and tend all the family land property, even if this is only a hectare or so.

There are various ways in which the seasonality of labour demand could be reduced. Development to increase the diversity of crops in the various parts of the region and to increase the percentage of cash crops or the intensive rearing of livestock is likely both to increase the demand for labour and to reduce the fluctuations over the year. The encouragement of activities

which yield a steady stream of income throughout the year, for example the production of milk now introduced in the Kilimanjaro and Meru areas are also conducive to the hiring of labour, since there is a regular fund from which wages can be paid.

There is reason to believe that the ebb and flow of urban job seekers to towns is related to the peak and slack periods of their local agricultural calendar. For example, in the Moshi areas, a lot of young unemployed men flock to the towns just after harvesting coffee in the months of Dec./Jan. They come back again to the rural areas during the harvesting of maize grown in the plains in the Months of June-August.

Nevertheless, the extent of wage employment opportunities in the rural areas should not be allowed to detract from the fact that many rural people are desperately searching for, or are in need of, ways of improving their standard of living, and their number could rise rapidly as the rural population expands unless action is taken to alleviate the problem. Moreover, for many people, especially the young and the more educated, the income to be earned from either self-employment or wage employment in this region's rural areas falls short of their aspirations. It is this group which provides most of those who migrate to the urban areas in search of work.

Labour Force Participation: The Role of Women

The division of labour between men and women in the rural areas creates further employment problems. The role of women is often governed by traditions set long ago, in different economic circumstances. With the change in economic activities from cattle to crops, (e.g. in the case of some areas in Masai),

or from existing crops or others with different patterns of labour requirements - and with the children at school and often the husband in town, the traditional allocation of work no longer fits the modern demands and supply of labour. The common, though not universal result is that women work extremely long hours much longer than the men in the same families⁶. Quite apart from personal weariness this often appears to leave many women with insufficient time to complete all their duties satisfactorily, particularly at peak seasons of the labour demand.

Thus, almost all women in this region, whether in the rural or urban areas are engaged fairly regularly in economic activities. Moreover, when they are not busy with economic activities, they are usually active in household activities. To lay great emphasis on the distribution between economic and non-economic activities seems somehow arbitrary when both of those kinds of activities are contributing to raising family living standards.

EMPLOYMENT AND MIGRATION

The process of rural urban migration now under way in this region, which also occurs in other parts of Tanzania, involves a rapid shift of people towards the towns of Moshi and Arusha in the region; other towns of Tanzania - Dar, Mwanza, Tanga etc., and to other towns outside Tanzania - especially Nairobi and Mombasa in Kenya, inspite of the fact that there is net migration to the region. As seen earlier, the movement in this region is very big and involves all sorts of people - young and adult; male and female; the educated and the illiterate and the landless and those with large holdings. Yet there are significant proportions: many of the migrants are

young; men migrate more frequently than women and there is likelihood of migration increasing very rapidly with the level of education attainment.

The desire for a job and inability to find work in the rural areas are the main reasons for migration. Other reasons include the lack of social amenities, lack of schools (esp. in the Moshi area) etc.

Only a minority of the male urban migrants are completely landless and without future prospects of acquiring land by gift or inheritance. The majority of the migrants are likely to have some land, at least in the long run, though in the case of the Chaggas, some of the plots are so small now that further subdivision is virtually ruled out, thus forcing some people to move. This may explain much of the reverse flow of migration after the age of 40 as well as the low rates of rural urban migration of women. Well over 65% of the married migrants leave their wives in the country.

Most of the migrants in this region tend to seek employment first in the town nearest to their rural residence, (particularly Moshi and Arusha), partly because they have less far to travel but also because they can thus be sure to find a number of kinsmen, friends and others who speak their own language and who will provide a place to stay and aid in seeking a job.

The greater tendency of the more educated to migrate is partly explained by the pull of higher earnings and better prospects for educated persons in the towns, at least in recent years. In this regard, the migration of the educated is a particular example of the general tendency of persons to migrate when the return they can expect from migration exceeds their costs.

The process of selective migration for jobs adds to rural problems by leaving behind the uneducated, the very young, the old and a disproportionate number of women. Again the main area suffering from this is the Kilimanjaro area. Women are left to operate households and smallholdings alone or with the aid of hired labour (where finance is available) and occasional visits from their husbands during periods of peak labour demand on their farms. The number of people living in split rural/urban households is very large especially again in Kilimanjaro/Meru areas. Only the educated can afford to move with their wives since in most cases they have enough, or just, to keep their families in town.

Most of the men who move alone send money to families in the rural areas. The majority of urban migrants retain strong connection with their area of rural origin, and expect to return there themselves after a long period of stay in town - perhaps as much as two decades. Many have not ruled out the possibility of farming their own land at some time.

But meanwhile, in the town rapid and selective migration creates a great deal of urban strain. This is the subject of the next section below. It is worthwhile to note here that, whatever the social costs of this migration, there can be little doubt that to the migrants themselves, it is seen as a private gain. In spite of all the struggles that they may go through to find work or just to survive, for those who succeed it is clearly worthwhile, and even for those who do not succeed it is usually worth trying.

B) URBAN EMPLOYMENT - EXISTING PROBLEMS

Urban employment in this region is confined to the main centres of Arusha and Moshi; followed by Same, Mbulu, Himo and Babati. The majority of people employed, as expected, are in the manufacturing sector, construction, commerce and services, and here again Arusha has more opportunities than Moshi. Table 36 below shows urban employment as a percentage of total regional employment. At once, it is seen that employment opportunities are greater here than in the rural areas in every sector except agriculture, mining and services.

Table 36. Urban/Rural Employment. Percentage by Sector 1967

<u>Sector</u>	<u>Urban Employment</u>		<u>NORTHERN REGION TOTAL</u>	
	<u>Arusha R.</u>	<u>Kilim. R.</u>	<u>Urban Employ'mt</u>	<u>Rural Empl.</u>
Agricult.	8.4	2.0	5.2	94.8
Mining	66.7	4.0	35.3	64.7
Manuf.	79.1	72.4	75.7	24.3
Construct.	53.9	49.3	51.6	48.4
Commerce	96.1	70.1	83.1	16.9
Elec & Wat.	100.0	100.0	100.0	000.0
Transport	62.2	89.1	75.7	24.3
Other Sec.	45.1	33.2	39.1	60.9
TOTAL	63.9	52.1	58.2	41.8

Employment Growth

Urban employment has been on the increase since the mid sixties rising from 16,709 in 1966 to 19,142 in 1969. It is estimated that by now the number of employed in towns in the region is near the 25,000 mark. This rise in employment has come from the number of new industries established in the

towns of Arusha and Moshi; the establishment of EAC Hqs. in Arusha; the opening of KIA and its subsidiaries etc. Table 37 shows the number of people employed in the main towns of Moshi and Arusha between 1966 and 1970.

Although there has been this expansion of employment, both in the public and private sector, job opportunities are still not enough for the existing labour force in the towns and the number of people unemployed still keeps rising with the population growth.

Table 37 Total Employees in the Major towns

Town	1966	1967	1968	1969	1970	1971
Arusha	8851	9254	9488	9971	n.a.	n.a.
Moshi	7858	7454	8543	9171	9195	9292
Total	16709	16708	18031	19142	n.a.	n.a.

Growth between 1966-69 = 12.7%.

From the figures above it is thus obvious that when compared with the total urban population in these 2 towns of Arusha and Moshi (which was 59316 in 1967), only about 30% are employed. However, the remainder of the population of working age is not necessarily unemployed. Some are housewives, students or other persons seeking employment only occasionally or not in the enumerated employment or are engaged in other activities providing economic goods and services to the urban population: They are members of the informal sector, frequently living in squatter settlements devoid of most essential services, such as running water, electricity, health services and schools. Informal economic activity - though often not recognised formally, and in some cases restricted and actively discouraged - is often economically efficient, productive and creative.

In such activity people practice a variety of modern trade and crafts, just as in the formal sector, but without the formal sector's protection from competition, or its favoured access to credit and sophisticated technology . This will be discussed later.

In addition to those employed in the formal and informal sectors there are the unemployed - those without sources of current income and seeking work or go about begging - a scene common near the tourist hotels or in the bus stations or along the main high street. There is no direct evidence that their numbers have been increasing, but this seems to be the general view, since there are a lot of primary school leavers who do not get a place in secondary school - especially in the Kilimanjaro area. The existence of the urban informal sector, with its sources of low income employment, prevents one from making any inferences about unemployment from the fact that the rate of adult rural-urban migration has exceeded the formal sector. The essence of the urban unemployment problem in this region lies in a combination of unemployment and low incomes - i.e. the number and conditions of the working poor - and there is little doubt that the working poor, as defined below in the I.L.O. report⁷, are, increasing relatively and absolutely in the urban areas of Moshi, Arusha, Same, Mbulu and others. In this sense, the urban employment problem has been growing more in recent years and will continue to do so unless drastic steps are taken.

The first step towards a solution of the employment problem in urban areas must be an attempt to estimate the proportion of the population in the three categories - formal sector employment, informal sector employment and the unemployed

The first has been enumerated (see table 37), so there is no estimation needed. By their nature, estimation of the latter two is very difficult. It, as it is believed, that the informal sector must play a major role in any strategy to solve the employment problem in this region, it is essential to estimate the size of this sector. An attempt therefore is made to build up an account of how the urban population is employed, with estimates of the number of persons in the informal sector and in the residual adult population; including the unemployed.

6.8 UNEMPLOYMENT AND EMPLOYMENT IN THE INFORMAL SECTOR

The Nature of the Informal Sector

The problem with employment in this region is that the statistics are incomplete, covering a major part of wage earning employment and some self-employment in the larger and more organised firms but omitting a range of wage earners and self employed persons, male as well as females, in what has been termed "the Informal Sector"⁸.

The popular view of informal sector activities is that they are primarily those of petty traders, street hawkers, shoeshine boys and other groups "underemployed" on the streets of the big towns. However, the evidence gathered in the study of employment in Kenya by the ILO suggests that: "The bulk of employment in the informal sector, far from being only marginally productive, is economically efficient and profit-making, though small in scale and limited by simple technologies, little capital and lack of links with other ('formal') sector"⁹. Within the latter part of the informal sector are employed a variety of carpenters, masons, tailors and other tradesmen, as well as cooks and taxi drivers, offering virtually the full range of basic skills needed to provide goods and services for

for a large though often poor section of the population.

Often people fail to realise the extent of economically efficient production in the informal sector because of the low incomes received by most workers in the sector. A common interpretation of the cause of these low incomes (in comparison to average wage levels in the formal sector) has been to presume that the problem lies within the informal sector; that it is stagnant; non-dynamic and a net for the unemployed and for the thinly veiled idleness into which those who cannot find formal wage jobs must fall. It is hardly surprising that this view should be widespread, for academic analysts have often encouraged and fostered such an interpretation. At any rate, it is important to emphasise that it is very necessary to improve the informal sector if employment in this sector is to be improved. The informal sector in the urban areas here has been operating under extremely debilitating restrictions as a consequence of a pejorative view of its nature. Thus there exists an imminent danger that this view could become self-fulfilling prophecy.

The informal activities in the region are not confined to employment on the periphery of the main towns, to particular occupations or even to economic activities. Rather, informal activities are the way of doing things characterised by:-

- a) Ease of entry
- b) reliance of indigenous resources
- c) small-scale operation
- d) labour intensive and adapted technology
- e) family ownership of enterprise

- f) skills acquired outside the formal school system; and
- g) unregulated and competitive markets.

The informal sector activities in the region's towns and elsewhere, are largely ignored, rarely supported, often regulated and sometimes actively discouraged by the government. For example, often these people are rounded up by the police and asked to go back to the rural areas without any particular job they can go to. A few of these are now joining Ujamaa villages where work is easier to come by.

The characteristics of formal sector activities are the obverse of these, namely:-

- a) difficult entry
- b) frequent reliance on overseas resources
- c) corporate ownership
- d) large-scale operation
- e) capital intensive and often imported technology
- f) formally acquired skills, often expatriate, and
- g) protected markets (through tariffs, quotas and trade licences)¹⁰

The present policy of ujamaa villages and the government effort so far of transferring of incomes from the top income groups to the working poor is hoped will result in new types of labour intensive investments in both urban and rural areas. This will not only generate demand for the products of the informal sector but also encourage innovations in labour intensive techniques in this sector

Estimation of Unemployment and Employment in the Informal Sector in Urban Areas

It is rather difficult to estimate the number employed in this sector especially for women. Many of the women are involved in informal activities which are difficult to cover

statistically, e.g. illegal beer brewing, prostitution and urban agriculture. Women are employed part time in several different activities. Even if one could enumerate all the women engaged in such activities, the remainder would include a large number of women who would not involve themselves in work other than household work, except under dramatically changed social conditions. Accordingly it is difficult to presume that all those not employed in the (region) formal and informal sectors are necessarily unemployed.

Unemployment and employment in this region's towns has been calculated by taking the total urban labour force which is 25,523 (1969); find out the percentage of those working in the formal sector, which is 57.62% or 16,710; then subtract the number of workers in the formal sector from the total labour force and we remain with 8,813, being workers either in the informal or unemployed sector.

Currently unemployment in Tanzania's towns is running at between 8-15%. So, by taking an average of 12% for this region, we find that the number of unemployed is about 1,057 and the remaining 6,756 or 30.38% are workers in the informal sector. These figures should be taken as showing in the region's towns to give the precise figures for the different sectors. At the moment this study can only rely on the above figures since there is not time or funds to carry out the above survey.

A general observation in the region shows that, generally, the incidence of unemployment falls more heavily on women than men and the younger age members of the adult population are the hardest hit. Again, from information available, within all age groups, it is the less educated who suffer most. The worst

of all possible circumstances from the point of view of seeking work is to be young and uneducated and female.

To sum up the problem of the unemployment in the region

We find that the problem of the working poor constitutes the major part of the employment problem due to the region's limited resources and poor income per head. From information available from the census and elsewhere, it can be concluded that the employment problem is serious and growing, especially in Arusha and Moshi towns where most of the unemployed have resorted into petty theft, stealing or street-begging. This unemployment among men and women is appalling and its extent and intensity is increasing. The current policy of encouraging the unemployed to join Ujamaa villages in the region may go a long way in trying to solve this problem, but a comprehensive solution is called for soon.

6.9 EMPLOYMENT PROBLEMS AMONG SCHOOL LEAVERS

Unemployment and job seeking affects a lot of the primary and secondary school leavers in this region since it has one of the highest enrolment of both primary and secondary school places in the country. Since 1967, the position has changed and become more difficult to find jobs, as is hardly surprising in view of the tremendous expansion in enrolments in self-help primary school and secondary schools. This situation is more marked in the Kilimanjaro area than elsewhere in the region due to the present high population giving rise to a high number of primary school children. For example, in 1972/73, the number of children in Kilimanjaro Region at the school starting age was 28,850, but only 11,685 could get places in the existing schools, the others had to wait for a chance in the coming year¹¹.

Table 38 shows both the primary school and the secondary school enrolment between 1966 and 1969. As seen primary school enrolment increased only marginally whereas total secondary school enrolment rose faster - from 4209 - 5935 (1969). This high increase came as a result of government expansion and private initiative. For example, in the Kilimanjaro region private secondary schools went up from three to six (1966-69) and the number of students rose from 840 (1966) to 933 (1969).

The result has been that the number of pupils leaving both primary and secondary school has been rising and employment opportunities have not caught up with it and thus, aggravating the employment situation especially in the case of the Kilimanjaro region.

Table 38 PRIMARY SCHOOL ENROLMENT 1966 - 1969

Region	Year	No of Schools	Enrol- ment of pupils	No of Schl.	Enrol of pl	No of School	Enrolment of pupils
Arusha	1966	162	32171	47	4124	209	36295
	1967	168	33022	50	4181	218	37281
	1968	132	33644	59	3637	191	37281
	1969	167	34759	34	2197	201	36956
Kilim.	1966	420	81367	28	4381	448	85748
	1967	408	79490	34	4582	442	84072
	1968	343	84041	23	2954	366	86995
	1969	344	81500	29	2793	373	85293

Table 17b SECONDARY SCHOOL ENROLMENT 1966-1969.

Arusha	1966	2	685	2	203	4	888
	1967	2	674	3	364	5	1038
	1968	2	730	3	513	5	1243
	1969	2	743	2	599	4	1342
Kilim.	1966	9	2781	3	540	12	3321
	1967	9	2938	6	913	15	3851
	1968	9	3307	6	862	15	4169
	1969	9	36660	5	933	14	4593

Source: Statistical Abstract. 1970 op. cit. pg. 203.

The school leaver problem, however, is not the result of only a simple excess of school leavers each year over the number of new jobs requiring school qualifications. True, this excess is large and has been growing very rapidly as seen in the Kilimanjaro area. But the particular reasons why school leavers are a problem, why they are frustrated and why an increasing proportion of them are seeking work is, not so much that opportunities do not exist but that the opportunities open are not attractive in relation to those obtained by persons with comparable qualifications only a few years ago.

Nevertheless, the school leavers are not fixed in their ideas and aspirations and there is a good deal of evidence in Tanzania and in this region that they soon adjust to the realities of the changing situation. Former primary school leavers are now taking jobs they shunned before. Will the school students do the same? Or have they reached the level of education which, for one reason or another, will make them permanently dissatisfied with anything less than a white-collar job.

There are three groups of young people who today tend to enter the locally based, small scale producing and trading occupations included in the informal sector. They are the school leavers who have completed primary school, the drop-outs and young people under the secure formal education.

Once they enter the informal sector, members of those three groups will have varying degrees of success according to their individual abilities.

People with secondary school education have a larger number of options open to them and many pupils repeat, particularly at the end of primary school, in a struggle to keep these options open. In this case again the Kilimanjaro district

stands out due to the high pupil ratio in the schools. In the districts where there is low enrolment like Masailand and Mbulu the number of school leavers is smaller and hence the problem of job seeking is less.

What is needed in the region is a policy to reduce the imbalance between the urban and rural areas and to this effect Tanzania has introduced a number of cottage industries in the rural areas to absorb these people. In addition, the movement of people into Ujamaa villages will mean that employment in agriculture and its associated services will increase and hence, help in the fight against unemployment.

SUMMARY: Scope and Nature of the Problem

The main problem in this region is that of employment rather than unemployment. By this is meant that in addition to people who are not earning incomes at all, there is another - and in this region more numerous - groups of people who are called the "working poor". These people are working, and possibly working very hard and strenuously, but their employment is not productive in the sense of earning them an income which is up to a modest minimum. Insufficient incomes, in turn, are closely related to inequalities to access to education and other facilities.

References

- 1 District Data. op. cit. pg. 1 and 25.
- 2 Discussion of Informal, under-and unemployment will follow in greater detail later.
- 3 For an excellent discussion of this problem in Kenya see: Employment Incomes and Equality in Kenya. ILO.
- 4 Henin and Egero, op. cit.
- 5 ILO Report on Kenya op. cit. Def. of working poor
6. ILO Report - Employment in Kenya op. cit.
- 7 ILO Report op, cit. pg. 5.
- 8 ILO op. cit. pg. 223 "The Development of the Informal Sector.
- 9 ILO op. cit. pg 223, Chapter 13.
- 10 ILO report op, cit. pg. 6.
- 11 Kilimanjaro Development Plan 1974/75. Kil. Region, March 1973, pg. 29.

Chapter 7

FORESTRY

Introduction

Forestry in this region is one of the major land uses and an important natural resource especially in the area north and west of Arusha and on the slopes of Mt. Kilimanjaro and Mbulu. The forestry here can be divided into high altitude permanent forests and other forests. Overall, high altitude forests are mostly protected partly by government and by local authorities. Their primary function is to promote the storage of rain water in the soil and allow its gradual release into rivers throughout the year, in dry as well as in rainy weather. These lie in the Kilimanjaro District, occupying 116,250 hectares or 36% of the district; and also in the highland country of the Ngorongoro Conservation area and Masai - occupying an area of 46,250 hectares. Such forests are also found on the slopes of Mt. Meru - occupying 8,750 hectares, and other forests lie in Mbulu district where they occupy 270,000 hectares or 17% of the district.

The unreserved forests and woodlands are freely accessible for fuel and building materials, except that charges are made for commercial exploitation. Most woods are conifers and these cover extensive areas. Hardwood plantation covers a small area. Both utility and fine timbers are grown in the forest reserves. There are a number of hardwood projects, namely Sanya Juu and Meru, but also hardwoods are also planted in softwood plantation areas. The most important species are teak (*tectona grandis*), loliondo (*olea welwitschii*) and *gevillea robusta*. *Grevillea* and *Olea* are prominent in Loliondo and Sanya Juu.

7.1 Forest Areas

A) The Mountain Rain Forests

These are as a rule productive, and may be classified

among forests of the type with a full crown. They are found at a height of between 1,800 m. and 2,600 m. on the slopes of mountains like Pare, as well as on the southern slopes of Mt Kilimanjaro. The most important tree species which are utilised on a large scale are *Podocarpus*, *Ocotea usambarensis* and *Cephalosphaera usambarensis*.

The vegetation on Mount Kilimanjaro is Moist Montane Forest, and also Altimontane Formations, including Ericaceous Heath or moorland. Most of the forest is government Forest Reserve, with the addition of a strip half a mile wide below the main forest block on the south side of the mountain, which belongs to the local authority, and is administered by them with the assistance of the Forest Division. The area above the tree-line is technically Forest reserve, but also a Natural Reserve. With the designation of the whole area around the mountain, last year, as a national park, the management of the forest will be shared between two departments.

Further down the mountain the only major forest is the Rau forest which will be covered below. In Arusha we find the Mt. Meru Forest Area. It covers 50 sq. miles (130 sq. km) with a vegetation type of Moist Montane and Dry Montane, also with Altimontane formations. Much of the forest on Mt. Maru is Central Government Forest Reserve, and most of the remainder, particularly the part inside the crater, is now a part of the Arusha National Park. Part of the forest is being redeveloped as soft-wood plantation.

Marang Forest

Located on the Rift wall, above Lake Manyara covering about 30 sq. miles (80 sq. km) with Moist Montane Forest.

This is Central Government forest in part, open to hazards such as grazing of both domestic and wild animals e.g. elephants, and other parts to agricultural development. Part of this forest may be included ultimately within the Manyara National Park.

b) The semi-dry woodlands - consist of mist forests, on the upper slopes of the mountains, where the rainfall is relatively low. They are chiefly located in the Pare mountains, on the north slopes of Mt. Kilimanjaro and on Mt. Meru. Economically important types of timber are *Juniperus procera* (the African pencil cedar), *Juniperus cassyoporea* and *Ocotea uambarangensis* (camphor wood)¹. Among the forests here are those on the Masai Mts., for example Hanang, Kitumbeine, Lolkisale, Longido etc.

The forest in this area is mainly near the Rift valley containing I Forest, including Moist Dry Montane Forest, with degenerate derived parts. Some of these mountains are Central Government Reserves, but are afforded no more than nominal protection at the moment. They are valuable links in the study of African flora, fauna and climate. They are threatened less by development than by disintegration from uncontrolled cutting, fire and grazing.

Lelatema Mts. Forest: Located south of Noshi, on the west of the Pangani river, covering 100 sq. miles (260 sq. km.) with Dry Montane Forest. This remote area is not under any form of formal control, and is not threatened except by uncontrolled fire. It is, however, an example of a mountain range lying wholly in the rain shadow of another, probably receiving no more than between 10 and 20 inches (25-50 cm.) annually.

c) The Ground Water Forests: and littoral forests are of great economic importance because of their accessibility and their valuable species like Khaya and Chlorophora. Some fine forest stand along the large rivers, in some parts of the Eastern Pare Mts., in the Rau Forest and on south-eastern Kilimanjaro.

Rau Forest is located near Moshi - about 10 sq. miles (25 sq. km.), with forest vegetation of a lowland ground-water type, containing a number of extremely interesting associates including *Oxystigma msoo* which is otherwise restricted to the Guinea and Congo forests.

It is central Government Reserve. A great deal of cutting and small-scale planting has been done over the years, and probably none of the forest is now in its "natural" condition. The main function of the forest is to supply poles and firewood to the adjoining Moshi township, the area being insufficient to warrant full-scale development as a timber producing forest.

7.2 The function of the Regional Forests

The aims of forestry in the region are two-fold: protection and production. Protective forests in the mountain areas of high rainfall play a vital part in water conservation. Forests reduce flooding and soil erosion and by helping to maintain a steady water flow in streams and rivers all the year round they provide domestic water supplies and promote the development of irrigation and industry. They help to preserve suitable climates for agricultural crops. Even more vital, as Tanzania develops, will be the role of forests in the export market and the local building industry. Already a considerable amount

of wood is exported in timber form, and there is a prospect of extra jobs and income from the export of wood pulp. As a result of the above aim of protection, protection forests as seen earlier, are found on water sheds in wet, steep uplands such as Mts. M ru and Kilimanjaro.

In addition natural protective forests aid in the conservation of wildlife with concomitant benefits to the tourist industry in the region. On the other hand, there is not empirical evidence that forests affect rainfall. They do affect ground water supplies by regulating the interception of rainfall and the infiltration of rainwater into the soil, as well as by storing large quantities of water in their tissues. The importance of these effects is, however, uncertain.

Many of the protective forests are natural communities of indigenous species, but since most of these forests are also used for production there is a tendency to replace natural vegetation by exotic species where the former is uneconomic. The indigenous softwoods, podo (*Podocarpus* spp) and pencil cedar (*Juniperus procera*), for example, regenerate unsatisfactorily and are gradually being replaced by imported species, especially pines. On the other hand, some hardwoods, notably muninga (*Pterocarpus angolensis*), mvule (*Chlorophora excelsa*) and camphor wood regenerate satisfactorily and are therefore maintained.

In production forestry the trees are systematically exploited for timber. The approach towards the forest is again dependent, in part, on the rate of regeneration and the economic productivity of indigenous species. Where these are

uneconomic, destructive felling is carried out and the areas are replanted with more suitable trees. Afforestation is also carried out to increase forest resources in previously unforested and unproductive areas.

The productive forests in the region can be divided into 4 main types, namely natural closed forests, miombo woodland, softwood plantations, and hardwood plantations.

Natural closed forests are largely restricted to the humid upland areas Kilimanjaro and Meru. The principal economic species are podo and camphor wood, but loliondo is produced on Mt. Meru. Mvule is locally important especially on the Pare Mt. Range. Other significant species include mtambara (*Cephalosphaera usambarensis*), muhuhu (*Brachylaena hutchinsii*) and black-wood (*Dalbergia melanoxylon*), all low montane forest trees.

The miombo woodland provides a fairly big area of forest reserve. Most of these forests are found in Mbulu. The principal economic timber in forest reserves is muninga (*Pterocarpus*). Some of these forests are unreserved forest providing a wide variety of species exploited for export, for building and construction and for fuel. In addition to muninga, mtunda (*Brachystegia spiciformis*) and mperamwitu (*Combretum schumanii*) are significant.

Wherever it is possible to combine tree planting with agricultural crops, forest reserves can be opened to cultivation under strict control. By this system a few families cultivate in various parts of the forest estate. They clear away the low grade vegetation, then plant crops for three years in succession. In the fourth year young trees are planted in the fields, and for three years or more, the families can

still crop between the rows of trees. They then move on to clear another section.

The soil, having been well fertilised by the trees, is excellent for growing a number of different crops, but the main ones are maize, beans and pyrethrum. In fact, the forest cultivation of pyrethrum in the area around Mts. Meru and Kilimanjaro, and by both the large-scale farmers and the African co-operatives, is supporting about 40% of the pyrethrum industry. In the selection of crops for cultivation in forest areas it is important that nothing is grown which would hinder or harm the growth of the tree. Wheat is not allowed because it cannot be harvested in narrow rows between trees. Permanent crops also cannot be allowed, for the crop cycle normally terminates after a total number of six years to leave the trees to grow on their own.

These forest families get first call when labour is required in the forests, and many have become skilled woodsmen. They learn good nursery practice, the planting and tending of trees, road making and fire fighting, and many have joined the permanent forest staff as saw mill operators, labourers, technicians and loggers.

7.3 Forest and Timber Production

The most important product of forests is timber, and this region contributes a substantial amount to the national total. Timber production in the region in 1967, was 18,509 cu. cm. of non-coniferous timber; 6,967 cu. cm. of coniferous timber, 9,361 cu. cm. of poles and 186,966 cu. cm. of fuel wood, Table 1. The Kilimanjaro area produced the highest amount of non-coniferous timber, and poles, whereas, Arusha produced more coniferous timber and fuel wood.

Table: 39 Timber Production by Circles in cu. cm. and cu. ft., 1967.

Area	Non-Coniferous		Coniferous		Poles		Fuel Wood	
	Cu. cm.	Cu. ft.	Cu. cm.	Cu. ft.	Cu. cm.	Cu. ft.	Cu. cm.	Cu. ft.
Arusha R	1989	71042	6923	247255	913	32596	28847	1030216
Kilim. R	16520	589995	44	1602	8448	301713	158119	5671089
N. REGION	18509	661037	6967	248857	9361	334309	186966	6702089

Source: G. Rotzer, Forestry and Sawmilling in Africa, p. 75 in Studies in Production and Trade in East Africa by Paul Zajadacz (Ed), Afrika Studien, no. 51.

In the same year there were plans to carry out soft wood projects to produce wood pulp in this area. It was expected that 7,600 hectares would be planted in the West Kilimanjaro area, Olmotonyi and South Meru. Projects in the last Five-Year Development Plan (2nd) included planting about 698 hectares of soft wood. Hence it is seen that every effort is being made to increase the acreage of forests in this region and to replace the exploited areas.

Up to date figures for forest production are available only for the Kilimanjaro/Pare area and these show that in 1972, the figures were as follows: Timber logs - 14,403 cu. cm.; firewood - 26,846 cu. cm.; hardwood logs 2,642 cu. cm, building poles 14,045 cu. cm. and charcoal 978 tons. In all cases it is shown that output is coming down most probably because forest replacement is not taking place as quickly as it should. In 1970 there was a big rise in the production of building poles reflecting a trend of expansion in the building industry in this area.

7.4 Timber Consumption

Out of the harvested timber part is consumed in the region; part exported to other parts of Tanzania and part sold either to the neighbouring countries or sold abroad.

The timber consumed in the region is used for construction and a range of other industries allied to timber. There is a plywood factory in Moshi using podo and Grevillea. The Kibo Match Factory at Moshi is testing the use of local timber, especially *Croton megalocarpus*². In addition, there are large numbers of small scale furniture works both in Moshi and Arusha.

Exports of timber to Kenya comes mainly from a single

sawmill on N.W. Kilimanjaro. This sawmill sells to Nairobi practically the whole of the production, amounting, in 1966 to about 2,600 fm. (Fm = Footmeter = 35.31 cu. ft.) of solid timber .

The local authorities and the Central Government is anxious to maintain as high a level of production of timber and other forest products as is consistent with a continuous yield from the forest reserves. The government encourages the investment of outside capital in forest industries by granting exclusive cutting licences over a number of years, provided that the promoters of the industries recognise their obligations to teach the skills of harvesting, processing and marketing of timber and other forest crops to local people. Logging operations can often be undertaken by local co-operatives or private companies and the formation of partnerships between these and the outside capital is encouraged. Besides exclusive cutting licences annual or biannual tenders are arranged for the yields of certain forest reserves and plantations.

In addition to administering the forest estate of the region, the Forest Division of the Ministry of Agriculture and Co-operatives is responsible for forest protection, particularly from fire, agricultural encroachment, animal pests and diseases. There is a Research Station at Moshi concerned with timber utilisation as well as advisory services. The Division also gives training courses to cover almost all levels of employment in the division. At Olmotonyi, near Arusha, The Forestry Training School caters for all technical staff of the division up to the most senior grade of forester.

With careful management and further government investment in both hardwoods and softwood planting plus building and logging units and sawmills, the income from forestry here could

benefit the region greatly.

7.5 Other Forest Products

The regional woodlands are valuable not only for their timber but also for most of the other forest products. Of this the most outstanding are honey and beeswax, both being exported in significant quantities. In fact, Tanzania is the worlds largest exporter of beeswax, which includes among its 200 uses, lipstick, polishes, soap and candles.

A bee-keeping project was started in 1970/71 in Moshi and in the following year the first phase of the building works and equipment was ready. Apiary establishment started taking shape hand in hand with building and installation of machinery. Success of the project has been low because of the preoccupation of most people with cash and subsistence crops. It is a seasonal occupation, and is mostly carried out by agriculturalists during the dry season.

By 1974 there were only six official apiaries in Arusha, with the rest in Moshi with a lot of bee colonies. More farmers should be encouraged to participate in this activity which can increase their yearly income. The bee Research Institute at Arusha is experimenting with the use of European bees which are not as fierce as the African bee, and hence much easier to handle

Wattle Extract Is another important product of the forests, and is used in the tanning of hides and skins. The black wattle grows in mountain areas in Kilimanjaro and Mbulu, sometimes as a crop cultivated by the local people and sometimes under L.A. management. The region produced 100,000 tons of wattle extract in 1967 worth 100,000 shs. (District Data: pg. 26).

Other Products include gum arabic, raffia and other fibres and sandalwood oil. Fuelwood - especially for charcoal and building poles, are plentiful and harvested everywhere. A few district Councils also establish Eucalyptus spp. plantations for building poles and fuel wood.

7.6 Management of the Forests

In order to reap the benefits of the woodlands in the region, good management is called for. The aim is management and sustained yield basic of indigenous tree species in the mountain rain forests, in the moist rain forests of the foothills and in the other woodlands. In the mountain rain forests on the slopes of Mt. Kilimanjaro and Meru, the object of management is to preserve the forests through natural regeneration. Attention is chiefly directed to the first class species *Ocotea Usambarensis* (E.A. camphor). The treatment is confined to poisoning of over-mature stems, to removal of the thick undergrowth, and to keeping a free space for the suckers, which soon spring up in large numbers around the tree stumps after felling.

The type of timber chiefly found in the damp forests is to guard against forest fires often caused by people searching for firewood in the forests, day recreationists or honey collectors. Culprits, if caught, should be punished by imposing heavy fines.

To sum up, we find therefore, that forestry is a very useful and important natural product in the region with a lot of potential. The management of existing forests, further planting and an increase in the output of timber are measures required to exploit this potential. More timber-based industries

can be introduced in both the urban and rural areas (e.g. furniture-making) and this will provide employment outlets for the existing potential labour force.

REFERENCES

- John E. Moore, Forestry in Tanzania. TANZANIA IN MAPS.
Pg. 70.
- 2 G. Rotzer. Forestry and Sawmilling in Africa,
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CHAPTER 8

FISHERIES

Fishing in this region has always been on a low key because there are no large lakes or rivers. The fishing industry is mostly centred on the Nyumba ya Mungu Dam which, since construction, has provided good potential for the development of a fishing industry. The reservoir has already attracted a large number of fishermen and supplies a significant proportion of the dried fish sold in Moshi, Arusha and even Dar. Most other fishing is done on lakes Jipe, Manyara, Eyasi and Natron; or on family farming ponds or dams and lastly in some streams or rivers in the region. Trout fishing is done in the upper stretches of streams flowing from the mountains and this provides one of the tourist attractions of the region.

8.1 Amount and Value of Fish Caught

According to the latest figures available (1972), the region had 1,000 fishermen in Arusha Admin. region and 2,419 in Kilimanjaro region. These caught 17,513 tons of fish worth a total value of 11,983,600 shs. An average income per fisherman was 5.1 tons valued at 3,200 shs. (Table 40). Some of the Lakes for example, lake Manyara, is presently under fished because the market is low here as most of the Masai do not eat fish.

Table 40 Amount and Value of Fish Caught 1972

	<u>Arusha R.</u>	<u>Kilim. R.</u>	<u>Total</u>
1 Number of Fishermen	1000	2419	3419
2 Amount Caught (Tons)	1659.2*	15854	17513
3 Value in Shillings	1115200	10868400	11983600

*Metric tons.

In the Arusha sub-region plans are under way to stock larger species of fish in all major fishing centres in the region to step-up production, which has dropped by over 50% in the past three years. Migration of fishermen, mainly non-citizens, from Jassotu and other fishing areas in the region in 1971/72 had contributed to the drastic drop in production.

According to statistics from the Ministry of Natural Resources, production of fish had dropped from 3,339.7 metric tons in 1970 to 1,659.2 tons in 1972. Subsequent revenue decreased from 1,745,500/- to 1,115,200/- in 1972.

The number of fishermen at Bassotu declined from 112 in 1971 to only 41 in 1972 while those at Babati dropped from 196 to 95. Most of fishermen moved to the Nyumba Ya Mungu Dam near Moshi and other neighbouring fishing areas. The majority (mostly non-citizens from Kenya) moved following the establishment of fishing ujamaa villages there. In addition, the adverse weather conditions had also contributed to the drop in production.

In order to boost production to meet increasing local demands, a survey was conducted in all major fishing centres in the region to see if larger species of fish could be stocked. Predominant species here include tilapia and clarias. Fishermen must be instructed on the use of modern vessels and fishing equipment in order to step up production.

Despite an increase in the number of vessels, production of fish from Lake Babati declined from 944.4 metric tons in 1970 to 468.1 in 1972. A drastic drop was also recorded at Mfulu wa N'gombe where only 516 tons of fish were netted last year compared to a catch of 1,490.9 tons in 1970.

8.2 Fishing at the Nyumba ya Mungu Dam

This is the main occupation fishing area in the study region. Most of the fishermen in the dam are foreigners from neighbouring countries, especially Kenya, although of late the number of local fishermen has been increasing slowly. Comparing the 1972 with the 1971 figures, the number of foreign fishermen went down by 39.15% and this had an effect on the number of boats and nets in the dam which also went down by 51.84% in the same period.

Amount and value of Fish from the Dam

As in the case of Arusha, the amount of fish caught here has been going down; for example it dropped from 28,402 tons in 1970 to only 15,854 tons in 1972 - almost a 50% drop. This fall in tonnage has been caused by a shortage of rain in the period 1970/71 and also because most citizens have not as yet embarked on the business fully using modern fishing methods. In terms of value, fish bring into their region an average of 10 mil. shs. a year since 1970¹.

Future prospects are good but this will need better organisation of catching, processing (freezing and packing) and marketing. At present, Upare Development Corporation does the marketing of fish from the dam. Cold storage facilities have been built at Langata/Kambi Dagaa.

REFERENCES

- 1 Source: Kilimanjaro Region Annual Plan 1974/75, op. cit.

CHAPTER 9

MINING

Mining is not at present an important contributor to the regional income. Most of the region has been geologically surveyed and no mineral resources of any significance have been found. However, there are various small-scale mining activities which offer some scope for expansion in the future. The most important minerals are as follows: meerschaum, gemstones, phosphates, salt and dawsonite.

Meerschaum which is used for the manufacture of pipes is found in great quantities in the region. The rock deposit was discovered on the border of Kenya near Lake Amboseli in 1953 and is being extensively exploited commercially by a company in which the National Corporation has considerable interest. The pipes which are made from this rock are reckoned to be the best in quality. In 1967, 200,000 pipes worth 3 mil. shs. were made which went to 65 countries¹. Today production has been stepped up to meet overseas demand for pipes. These are cut and made in the company's factory at Arusha town.

Gemstones (Ruby)

Gemstones are found in Masailand in small quantities. In the past these have been exported rough but with the development of the gemstone cutting industry in Arusha, gemstones will in future be cut here.

Phosphates.

This is rock phosphate found at Lake Manyara. This is a potential base for chemical industries. It is currently used in a fertiliser plant at Tanga.

Dawstone (a basic carbonate of sodium and aluminium) is present in the volcanic tufts of the Olduvai-Serengeti area.

This occurrence, which may be widespread is largely unproved at present, but could assume a great importance as a source of alumina for an aluminium industry if the planned large-scale hydro-electric development at Stiegler's gorge on the River Rufiji is ever built, though the long distance between the deposits and the source of power would create difficulties.

Salt. There are inexhaustible salt and soda ash deposits in Lake Natron which may not be explored over a long time since Tanzania has other deposits of salt and other salt comes from Lake Magadi in Kenya.

Other Mineral Workings.

These include small deposits of magnesite bentonite near Gelai, magnesite near Longido, and gypsum and mica from Pare.

There are also vast deposits of sand and gravel both for house building and road construction. Much of the sand is from rivers and gravel comes from various gravel pits scattered all over the region, especially near the main towns due to heavy demand for building.

The mineral deposits here though small do have prospects, especially as far as meerschauum is concerned. However, these are faced with several problems. Economic and geographic factors exert determining influences. World market prices for many minerals fluctuate. Existing established competitors prevent mineral exploitation, which in their absence would have gone ahead. For example the inexhaustible salt and soda ash deposits of Lake Natron might well have been developed if ICI had not already opened up the Magadi deposits in Kenya. Isolation of deposits from power sources or from transport routes pose further difficulties, for example the dawsonite deposits in Masailand have difficulty of access and electric power is

hundreds of miles away.

Some of these problems may be solved in the near future if the region persuades the government to effectively implement a policy of import substitution aimed at stimulating local production and if it pursues an active policy of research and exploration.

As far as planning is concerned, the main bone of contention is the scar mining can leave on the land during and after exploitation, especially as far as open quarrying is concerned. If effective steps of correct exploitation and landscaping are followed then there should be no problem, but this is often ignored.

REFERENCES

- 1 Source: Tanzania Today: University Press of Africa. pg. 170.
op. cit.

CHAPTER 10

UTILISATION OF WATER RESOURCES

10.1 For the economy of any region, water is a very useful commodity, not only for agriculture and animal life but also the availability of clean water for home use reduces the time spent hunting for water and encourages people to stay together. In addition the availability of clean water in the villages is important to raise rural and urban health, a factor which has plagued vast areas in the region - especially in the Masai area.

The aim of the Tanzania government is to supply a clean drinking water supply to as many people as possible both in the urban and the rural areas of the country. Map 11 shows a wide variety of inputs into rural water supplies in this region, most of which have been carried out by the Ministry of Water and Power. Most private installations - e.g. by schools, missions, or other establishments are not included.

The greatest concentration of effort in the region has been in the dry part of the region in Masai and Mbulu where rainfall is fairly low most of the year - hence causing problems of water supplies both for humans and the wildlife in the national parks located here, plus their related infrastructure - e.g. hotels and lodges.

The next area of concentration includes the Kilimanjaro/Meru and Pare zone where population concentration needs an increase of water supply for domestic consumption and for irrigation - particularly in the drier plains of the highland zone.

Around Mt. Meru and Mt. Kilimanjaro, the local people have for a long time used the surplus water from the high rain fall on the mountain and channelled it to lower ground for a variety of needs. The numerous streams on the slopes of these

mountains provide perennial supplies of water for domestic use and cultivation through a tradition system of furrow irrigation which is helped by gravity. Most of the people here do not know of any problems of water supply since almost every home is served by a furrow which may not be more than 200 yards away.

There is also good local supplies of underground water in the volcanic rocks, in both the Meru, Kilimanjaro and Pare areas, although around Meru mineral impurities are a problem. Modern water use has adopted and modified these traditional practices, often by using pipelines or improving furrows.

In Masai and parts of Mbulu due to the uncertainty of rain water resource development is therefore essential. In the past the emphasis has been on the provision of cheap earth-filled dams across the ephemeral streams of the area to hold wet-season water for human and animal consumption during the rest of the year. These have been successful in some areas, but in general problems have arisen because of high evaporation rates and soil erosion in the catchment areas and consequent silting up of the reservoirs, dams, boreholes and hafirs are common in this area and, despite these problems, they still provide the major source of dry-season water. Without such facilities, people in such dry areas may have to walk as much as 10 miles to the nearest water hole during the dry season; cattle have to be taken to the nearest permanent water, which means overgrazing and erosion of the land in the vicinity of these drinking places.

The shortage of water in these areas also affects the numerous herds of wildlife in the National Parks in the region,

which, during the dry season have to travel west out of their natural habitation areas in search of water and grass. This migration of animals is caused because the vegetation in these areas dries out completely during the dry season, which may last for months, and in some bad years a number of animals die in the migration process. The majority of hotels and wildlife lodges in the national parks get their water supplies from bore holes or from springs if there are any, and in some months even these boreholes dry up, hence presenting problems to the efficient running of these tourist facilities.

In a few places in this arid west, the stored wet-season water is also used for irrigation, but this is a secondary purpose and has seldom proved very successful.

Water development in the region, on the other hand, has been very intensive and very successful in the area around Kilimanjaro and Pare by utilising rainwater from the mountains. For example, piped clean drinking water has been provided for the people around Kilimanjaro since 1951. Up to 1960, 30,000 people had access to piped water - 16,000 in Moshi District, 12,300 in Rombo district and 3,00 in Pare District. Excluding the urban population however, only 34.5% of the rural population get piped water. 22% of these are in the Moshi district, 6.88% in Rombo district and 5.8% in Pare District¹.

Water development plans for the Kilimanjaro sub-region in 1972/73 were as follows: 1.3 mil. shs. was spent in various parts of Moshi District benefitting 25,050 people; In Rombo district 4.9 mil. shs. was spent serving 21,200 people.

One of the big projects in the area is the building of a pipeline in the Rombo district to supply water to the people

down in the plains - where the shortage of water has hindered the full exploitation of the fertile land here. The East Kilimanjaro Trunk Main is estimated to cost 4.5 mil. shs. and is being financed by a loan from Canada.

Other pipelines are being laid in various parts of the region. By 1972, piped water was serving 137,750 people in the Moshi District; 34,750 in Rombo District and 37,600 in the Pare District. Other projects to supply water in the region by pipes are estimated to cost about 12.7 mil. shs., particularly in the Kilimanjaro area, Pare, Usangi Chini and Mpirani-Gonja. As a result of all these projects, this area's water problems are very small and much of the potential agricultural land is now being fully exploited to provide enough food for the region. There is also a scheme to provide water for the new KIA and Lossa by pipeline.

10.2 The Use of Water for Irrigation Schemes

Water also is important for irrigation purposes and this region has undertaken a number of schemes in this direction. Some of the areas, although fertile, cannot be put into agricultural output.

The biggest venture in irrigation is the construction of the Nyumba ya Mungu Dam in Pare which has made it possible to open up vast areas for agriculture. This dam is on the Pangani river 30 miles south of Moshi. The dam is 140 ft. high and 1,300 ft. long and was completed in December 1966. Its prime purpose is to control the river floods and to make more water available for irrigation and power. Pilot irrigation schemes have been carried out and produce from these farms is increasing. The water released is also used by the Nyumba ya Mungu, the

the Hale and Pangani H.E.P. stations. Vast areas around the lake are now fully irrigated and the following crops are cultivated: maize, cotton, beans, castor seed and an assortment of vegetables. In addition the dam is also used for fishing.

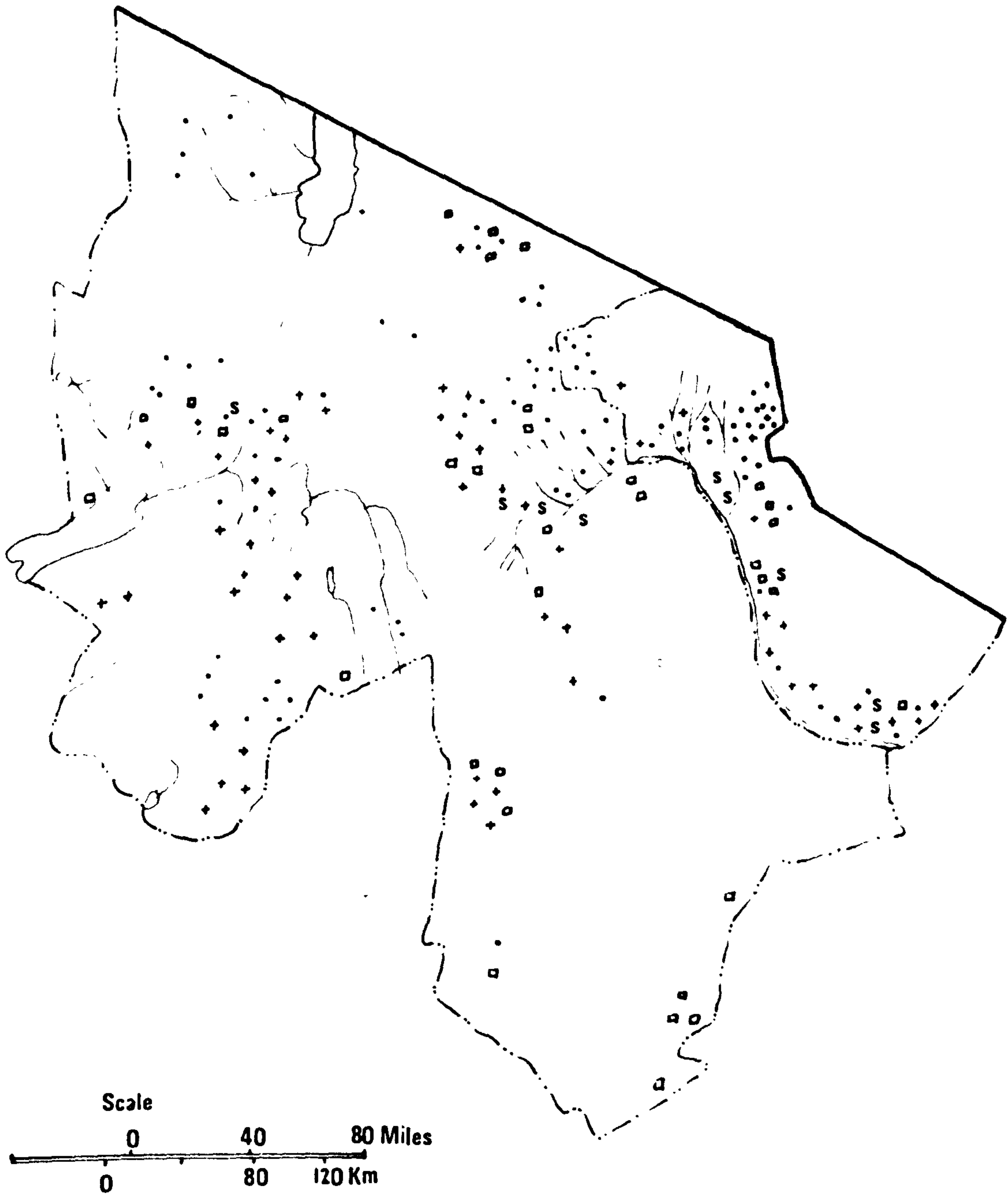
Also, other pilot irrigation schemes have been started in the vicinity of this area on the river Pangani. In co-operation with UNDP and FAO, the Ministry of Agriculture started two irrigation pilot schemes in the lower Moshi area - along the Pangani river and the progress of this scheme is good.


Village irrigation schemes - e.g. those in the fertile Chagga country around Mt. Kilimanjaro are to be encouraged and improved. Progress has been good because of the abundant water from the mountain. Water is used to irrigate maize, beans, coffee, onions and other vegetables.

Other irrigation schemes have been carried on in Monduli and in Oldeani where the land is suitable for growing wheat, maize and beans; further production is possible from these areas if irrigation can be extended to bigger areas.

Planned irrigation schemes in the region include the Pangani Irrigation Scheme (Merma area). The plan includes the irrigation of 8,000 hectares of land in this area and this is expected to cost about 10 mil. shs. Another scheme is the Naruru Irrigation Scheme - to cover 1,800 hectares and estimated to cost 2.2 mil. shs. Another project at Hedaru is expected to irrigate 6,680 hectares at a cost of 16.7 mil. shs. Lastly, there are numerous other small irrigation schemes in various parts of the region particularly in the Hanang, Mbulu and Monduli area to open up these areas for agriculture.

Utilization of Water Resources



+	Dams and Hafirs
•	Piped Supplies
◻	Pumped Supplies
s	Irrigation Schemes
	Rivers

10.3 Soil Erosion and River Flooding

There are plans at hand to control and prevent soil erosion and river flooding. The main affected area is the highland zone around mts. Mru, Kilimanjaro and Pare and in the Mbulu highlands. Farmers are known to lose vast acres of crops due to rivers breaking their banks, particularly during the heavy rains season - April to July. For example, the river floods in the Msaranga/Mandaka valley last year covered well over 1,200 hectares and affected 2,500 residents who work and live there. It has been estimated that every heavy rain causes floods which cost the residents a loss of over 1 mil. shs.² Studies of the situation have been carried out and currently the Ministry is trying to widen the narrow parts of the river and to building embankments.

Other areas where flooding is the problem is the area in Pare near the Pangani river and also some parts in the Hanang district caused by water flowing from the mountain.

Soil erosion is caused either by bad agricultural methods, bad cultivation methods, overgrazing of domestic animals etc. In the good agricultural areas the farmers should be taught how to farm the land well and how to plant to avoid soil irrigation. In the dry parts of Masai soil erosion can be minimised or stopped by restricting overgrazing of domestic animals, and in the national parks - by better wildlife management techniques to restrict the herd size may be by culling.

10.4 Urban Water Supply

The major towns in the region are supplied with adequate water supply both for domestic use and for use in industry and commerce. The total quantity supplied to consumers has been rising fast especially in Arusha due to the fast population and industrial growth.

In Arusha water supplied to customers rose from 139.5 mil. gallons in 1960 to 421.1 mil. gals. in 1970. In the same period Moshi town's supply went up from 213.1 mil. gals to 405.8 mil. gals. Today the supply has even gone higher than that of 1970 following growth in the two towns, particularly in Arusha where the new EAC has put some strain in the amount supplied. For the two towns, water supplies are in abundance, flowing from the nearby mountains.

Same gets most of its water from the Pangani River, and this meets all the towns present and future requirements. For the other towns, water is available from local rivers or lakes and sometimes boreholes.

Domestic water use is available in the big towns through the water mains, but in several parts of the towns people still depend on standing pipes situated a few yards from the house. Private connections to the water mains has been rising. For example, the number of private water connections went up from 1,500 to 2,725 in Moshi in the period 1960-70.1 In the same period, private water connections went up from 1,235 to 2,220 in the town of Arusha.

A long-range water resources plan is being prepared for Arusha. This study should provide answers to the long-term water resource problems of Arusha. Recommendations have been made in the Arusha Master Plan (pg. 42 Arusha Master Plan by PADCO op. cit) for the use of a water kiosk system as the basic standard in new residential areas over the next five years or more. Maybe the other towns could follow the same system

because of its low cost in provision. This system should extend to cover also those areas not provided with water at the moment because they happen to be slums or poorly developed areas.

Future demand for water is bound to grow, especially in the main urban areas following population growth and industrial investment. Many of the towns can meet this demand by getting water from local rivers or dams.

REFERENCES

- 1 Kilimanjaro Region Annual Plan 1974/75, op. cit.
- 2 Kilimanjaro Region Annual Plan 1974/75, pg. 72. op. cit.

Moshi Tanzania

CHAPTER 11

ELECTRICITY SUPPLY

The electricity consumed in the region comes from two sources: Hydro- and thermal. The bulk of the electricity comes from the Nyumba ya Mungu Dam at Moshi, and from Hale on the Pangani River. The rest comes from the Kikuletwa thermal plant.

The main generating body is the Tanganyika Electric Supply Company which is responsible to supply power to the whole country. At Hale there is a 21,00 kw. underground hydro-electric plant with its turbines sunk below ground to a depth of 250 ft. The power station is connected with the Pangani Falls Hydroelectric power station six miles down stream, which has a capacity of 17,500 kw.

The electricity installed capacity in the towns of Moshi and Arusha has more than trebled since the early 60's - from 5,159,000 kw. to 17,160,000 kw. between 1963 and 1969. Much of the increase came from the Nyumba ya Mungu Dam (1969). At the same time electricity sales have also doubled in the same period from 13.4 mil. kwh to 26.4 kwh (Table 4). Electricity generated in 1969 came to 14,877,00 kwh at Nyumba, 5,376,000 kwh at Kikuletwa, 2,480,000 Thermal and 10,389,000 Arusha.

The number of electricity consumers has gone up slightly especially in the urban area of Moshi. The main consumers in the region are the towns of Moshi, Arusha, Same and then the other smaller urban settlements. So far rural electrification is very limited - mostly to the Kilimanjaro area and to a few European settlers in and around the towns of Arusha and Moshi.

Apart from domestic consumption, the main consumers of the regional electricity include the main companies in the

towns - including the General Tyre Company and the Brewery at Arusha and the other food processing plants in both towns. The sugar factory at Arusha Chini also consumes a lot of power for the processing of sugar.

Other special users who do not have their own plants include the several schools in the rural areas, particularly secondary schools, technical and more important schools - e.g. Mweka Wildlife School, the various stations, hospitals, clinics and so forth.

At the moment the region has enough electricity supply to meet all its domestic as well as commercial and industrial needs now and in the foreseeable future. There is spare capacity at the Nyumba ya Mungu Dam to meet all demands in the region.

The majority of settlements or small towns remote from the main electricity generating stations depend on their own generated thermal electricity. Some of these centres include the national park hotels and lodges which are located in the wilds of Masailand where the cost of transmitting electricity to them is prohibitive at the moment. However, in the future, as more money is available to do this service, it will be able to connect them to the national grid system.

Rural electrification in the Kilimanjaro area has just started from the Machame area, next it will be Kibosho, Old Moshi, Kirua, Kilema and Marangu - all the way to Lombo. This has been possible because of the spare capacity electricity at the Nyumba ya Mungu Dam in Pare. This electric service will serve individual homes, cottage industries and particular institutions like hospitals, missions, schools etc. It is hoped that in future this service will be extended to Arusha District

rural area and to Pare. All these are areas of population concentration. The other areas with scattered populations will not expect this service for a long time because of the cost involved in trying to provide this service.

With the establishment of Ujamaa villages in the region, it is possible that these will be able to be supplied with electricity to help them in their activities - e.g. cotrage industries. In addition, electricity can be connected to private individuals since they will be lots of them clustered together.

It is therefore obvious that the abundant supply of electricity points to a better future in the region since this allows more industrialisation by providing cheap power and secondly, more citizens will be able to enjoy this service in the future.

Table 41. ELECTRICITY - SALES AND INSTALLED CAPACITY

Year	Sales '000kwh Arusha	Instal'd Capacity kWh Arusha	Sales '000kwh Moshi	Instal'd Capacity kWh Moshi
1963	6446	3700	7442	1459
1966	7809	3700	9773	2760
1969	15314	5200	11151	9960

Table 42. ELECTRICITY - NUMBER OF CONSUMERS AND SALES

Year	Consumers	Sales '000kwh	Consumers	Sales '000kwh
1963	2329	6046	2081	7442
1966	2403	7809	2120	9773
1969	2672	15314	2548	11151

Table 43. ELECTRICITY - TOTAL GENERATED - '000 kwh

Year	ARUSHA	MOSHI-Kikuletwa	Moshi-Thermal	Moshi-Nyumba ya Mungu
1966	9178	7736	3409	-
1967	10871	7910	2505	-
1968	15761	8619	2339	-
1969	10389	5371	248	14877

Source: Tanzania Statistical Abstract - 1970, pp. 123/4.

In table 3 note that the thermal electricity produced in both towns, especially Moshi, has gone down because it is cheaper to depend on the HEP from the Dam.

A number of ujamaa fishing villages have been established near the Nyumba ya Mungu dam the sole purpose being to exploit this potential resource. These include Legeza Mwendo; Lang'ata, Mikocheni; Ngurika and others.

CHAPTER 12

TOURISM DEVELOPMENT IN THE REGION

Introduction

12.0 TOURISM IN TANZANIA TODAY

In analysing the tourism situation and potential in this region, it is best first to examine very briefly the important role tourism plays in the country's economy in order to appreciate what is currently happening. This will provide a background against which a discussion of the tourist activity in the study region will be carried out since it is here that tourism flourishes best.

This will be followed by an analysis of the nature and scale of the tourist industry in the region - including the physical volumes of the tourist attractions, numbers, accommodation capacities; tourist infrastructure; internal and infrastructural organisation of tourism and then the implications of tourism for conservation of the environment and its economic, sociological and ecological effects.

Lastly, the advantages and disadvantages and problems facing tourism will be examined leading to an examination of the prospects for solving such problems and planning the successful integration of tourism with other land uses of the environment.

PART I

12.1 TOURISM IN TANZANIA TODAY

Tanzania is potentially one of the finest tourist centres in Africa. The country has the largest concentrations of game left in the whole continent, and the policy of the government is to conserve this wildlife as a major tourist attraction. The magnificent scenery, the friendliness of the Tanzanians, the warm and sunny climate, the beautiful beaches, and hunting

and fishing and a wealth of archaeological sites all help to make the country a tourist paradise. The natural resources are there. Tanzania's tourist problem has been how to utilise them. Fast and frequent air services at economic fares between Europe and East Africa have done much to change the pattern of tourism in Tanzania in recent years. The tourist industry, although already the fourth largest, is still in its early stages of development however, and there is tremendous scope for enterprise and capital. While hotel and game lodge accommodation is good in some areas, in others little has been done to attract tourists, and many potential attractions are as yet untapped because of a lack of suitable accommodation.

12.1.1 Tourist Attractions

It is no wonder that such a vast territory stretching between the Indian Ocean and the great lakes of Victoria and Tanganyika should offer an extremely rich and varied assortment of tourist attractions, ranging from the snow-capped Mt. Kilimanjaro and spacious volcano craters to the vast open plains, and from the arid bush to the rain forests and the warm emerald ocean with its white sand beaches fringed by palm groves. Some of the finest wildlife areas in the world are concentrated in the North and others are scattered all over the country in national parks and game reserves well stocked with animals, in most fascinating scenery. Big game hunting safaris under licence in controlled areas and game reserves, deep sea fishing at Mafia Island; under water fishing and goggling at the Indian Ocean; trout fishing; shopping for sculptured ebony and carved ivory; handbags of crocodile, leopard, lion, ostrich, elephant and zebra skins; gold and silver jewelry with locally-mined precious and semi-precious stones; Masai spears and shields

and inexpensive textile printed in striking patterns, do delight overseas visitors and so too is the friendliness and innate courtesy of the people. In addition to handicraft, the artistic talent of the population has best been expressed in the folk dances and songs which should also be encouraged.

The vastness of Tanzania's territory and its geographical situation, in addition to the scarcity of financial and manpower resources, require that a very careful scrutiny be made as to the possible lines of development. The tourist area of Tanzania is already established in trade in the north of the country with the famous game parks of Serengeti, Ngorongoro, Lake Manyara, Ngurdoto Crater, Momella Lakes; the towns of Arusha and Moshi with their several hotels etc.

These game parks here possess the greatest concentration of wildlife found anywhere in Africa and have justly become world famous. It is estimated that the Serengeti N.P. contains within its area of about 18,000 sq. metres some 350,000 wildebeest as well as large numbers of zebra and other plains game, and the seasonal migrations of these great herds attract visitors from all over the world. The Ngorongoro Crater, some 16 km. in diameter and almost 700 m. deep, also contains large numbers of wildebeest and zebra as well as rhinoceros, elephant and lion, and has been described as one of the few wonders of the world. Added to these are the attractions of the Lake Manyara N.P., a thin strip of land attractively situated between the lake and the foot of the Rift Valley scarp, and the Mt. Meru N.P. Also in this area is Africa's highest peak, Mt. Kilimanjaro at 19,340 ft. above sea level with permanent snow cover all year round.

The other game parks in the south half of the country are less developed because of the lack of accessibility. These

include the following N. Parks, Mikumi, Selous and Ruaha Game Reserve and also Katavi Plains and Ugalla river game reserves.

Less famous but equally attractive, are the finest beaches of the coast near Dar. Tanzania offers more than 900 miles of clean, white, sandy, uncrowded beaches fringing the warm Indian Ocean. Most of the coastal hotels are in Dar region, but recently some development has taken place on Mafia Island, where there is said to be excellent deep-sea fishing. Dar itself has a mellow, relaxed charm, quite different from the Europeanised bustle of Nairobi and has excellent hotels.

There are also a number of places of historic interest, such as the rock paintings of Kondoa, the pre-historic site of Olduvai, home of *Zinjanthropus Boisei*, "Nutcracker Man"; the old port of Zanzibar and the small town of Bagamoyo, which has many connections with 19th century explorers such as Livingstone, Speke, Burton, Stanley and Emin Pasha and also the once infamous slave port.

Zanzibar has not always had the easiest relations with the rest of the country since the amalgamation soon after Independence. At one time the authorities took a dim view of visitors, demanding all sorts of extra documentation and delays. However, everything seems to be alright now, and travel in the "Isle of spices" is straight forward, uncomplicated and encouraged.

It is not surprising therefore, that a considerable tourist industry in Tanzania had developed. Until quite recently, Tanzania's tourism has been closely linked with Kenya's and although much smaller, it has grown on the same ad hoc basis. Growth - in terms of the number of visitors coming in each year; in new hotels, facilities and in foreign exchange earned - has been marked in both countries. But Kenya with its superior

airports, roads, hotels and more pushful tourist operators, has become the centre of the industry for East Africa.

The picture has already started to change. Of late, the feeling has grown in Tanzania that the country must stop, touristically being Kenya's poor relation. The government has gradually, if cautiously, appreciated tourism's economic potential, and taking control to a considerably greater degree than the government has done in Kenya, is currently on the first phase of a considerable programme of expansion through its Ten Year Master Plan drawn up by A.D. Little¹.

12.1.2 VOLUME OF TOURISTS

TOURISM DEFINED - Tourists are somewhat difficult to define but generally may be those who travel on holiday for business reasons, to study, or to visit friends and relations². The International Union of Official Travel Organisations and the U.N. Conference on International Travel and Tourism, Rome - gives the following definitions which are generally accepted:

Visitors: Persons visiting a country other than that in which they usually reside, for any reason other than following an occupation remunerated from within the country visited.

Tourists: Temporary visitors staying 24 hrs. or more in the country visited for purposes of (a) Leisure (recreation, holiday, health, study or sport); and/or (b) business, family, mission or meeting.

Excursionists: Temporary visitors staying less than 24 hrs. in country visited. This includes cruise passengers.

In this study, we are concerned with "tourists" or those "visitors" who remain in Tanzania for more than 24 hrs. particularly "pleasure" or "holiday" tourists.

Volume of Tourists

Due to an absence of up to date complete figures on volumes of tourists, hotels, bednights and visitors etc. the only reliable figures of 1970/71 are used in the analysis throughout except where more recent figures are available.

Although still a long way behind Kenya in numbers of visitors, tourism in Tanzania is making headway. In 1971, the total number of visitors was 85,000 (Tanzania Tourist Corporation Annual Report 1970/71, pg. 14) and this number has been growing steadily ever since and in 1973/74, the estimated number of visitors has reached 127,000.

In 1973 foreign exchange earnings amounted to some 130 mil. shs. (£8 mil.)³, (Times Supplement, Tuesday, Dec. 10, 1974).

A sore point has been the fact that most visitors arrive from Europe and America by way of Nairobi, which means that hotels, tour operators and travel agents in Kenya are the main beneficiaries. To try to counter this, a new International Airport was opened 4 years ago near Kilimanjaro. It has so far proved a disappointment, since the airlines have declined to switch their operations from the convenience of Nairobi to the relative wilderness of northern Tanzania. Government officials admit that the infrastructure to support the new airport is inadequate. However, East African Airways now stops there on flights between Europe, Nairobi and Dar and other airlines are showing some interest in using it for charter operations. For the moment Dar remains the principal port of entry.

The financial and other benefits of tourism to Tanzania are numerous - every gallon of petrol purchased, every glass

of beer or minerals consumed, every curio sold and every night spent in a Tanzanian hotel creates work and brings in money which can be used for national development. Thus, the multiplier effect from tourism is very great.

In the past, on average, each visitor stayed for 6.6 days in the country and spent between 200-250/- per day on transport, accommodation and other small items such as curios⁴. (Tanzania in Maps. pg. 94). Thus, the country gets a lot of foreign exchange from tourism - e.g. in 1970 the net foreign earnings were 58mil. shs., and in 1971 it was 59 mil. shs.⁵ (TTC Table 14). Also in 1970 direct revenues from hunting mounted to 2.2 mil. shs. compared to 1.3 mil. shs. in 1961. For their part tourists are able to judge for themselves the development of the country, as well as taking away with them unparalleled memories of the country's beauty and warmth.

Table 44 No of Visitors, Bednights, Visitors to National Parks and Foreign Exchange Earnings Estimates.

Item	1968	1969	1970	1971	1972
Total visitors (incl depend.)	52474	63203	79020	85000	N.A.
Visitors in transit	10572	11914	9201*	N.A.	N.A.
Total Visitors excl. transit	42102	51289	69819	N.A.	N.A.
Total Bednights	467000	499500	599800	725377	N.A.
Tanzanian Bednights	205000	204100	220800	253572	N.A.
Visitor Bednights	262000	295400	379000	471805	N.A.
Visits to N.Parks (inc. non fee paying)	109818	143908	178926	212280	255023
Foreign Exchange Earnings (Gross shs.)	65 mil	80 m	96 m	98 m	N.A.
Foreign Exchange Earnings (net)	35 mil	48 m	58 m	59 m	N.A.
Tourist Income as a % of Foreign Exchange Earnings	3.6%	3.6%	3.8%	3.5%	

*Not strictly comparable with 1968 and 1969 figs., for the first time includes Kenyans and Ugandans in transit.

Source: Bureau of Statistics - Dar.

12.1.3 Hotel Bednights: Growth in Hotel Bednights & Trends 1971

Total bednights increased from 599,800 in 1970 to 725,400 which is 25% increase. This rate of growth represents a substantial growth over the 13.5% average annual growth in total bednights during the period 1968-69. Visitor bednights grew at an annual rate of 24% during 1971, which represents a satisfactory increase over the 20% annual growth experienced during 1968-1970.

Lar continued to be an area of rapid tourism growth. Total bednights increased by 28% during the year from 288,700 in 1970 to 369,000 in 1971. The increase in 1971 representing approximately 67,000 bednights, is attributable to European tourists staying at the beach hotels.

In the Arusha/Moshi areas, total bednights grew at a satisfactory rate of 19% during 1971 (from 77,600 in 1970 to 92,000), much improved from the 5% annual growth in total largely attributable to Tanzanian travellers. Visitor bednights grew at about 7% during the year, from 50,100 to 53,600.

The Northern Wildlife Areas recorded an 18% growth in total bednights from 123,300 in 1970 to 145,000. This represents a continuation of the growth trend recorded in the previous 2 years. Visitor bednights grew at an even higher rate, 22% from 116,500 in 1970 to 142,400 in 1971.

There was a shift from American to European tourists in the Northern Wildlife areas. American visitor bednights fell from 45,838 to 74,272.

In other areas of Tanzania, there was a 12% rate of growth in total bednights. The growth in 1971 is attributable to more internal travelling by Tanzanian residents.

12.1.4 Hotel Capacity and Occupancy Rates by Area (1970-71)

HOTEL OCCUPANCY RATES

There was a marked satisfactory rate of growth in total hotel bednights and visitor bednights, both of which are good indicators of expansion in the tourist industry. In the tourist areas, Ngorongoro, Serengeti and Lake Manyara areas enjoyed occupancy rates of over 60%. For tourist hotels on the Dar beaches, on Mt. Kilimanjaro, around Arusha National Park and around Tarangire N.P. bed occupancy rates were between 25-35%. To some extent, rapid expansion of capacity over the past 2 years is a major factor.

Nationality

Tourists from the U.S. accounted for close to 25% of the total tourists received by Tanzania in 1969 (11,629 out of 50,925 tourists) and nearly a third of all holiday tourists. As a nationality group, the number of U.S. tourists was also more than twice the number of overseas tourists from the U.K. Six nationality groups accounted for over 50% of the total tourist arrivals in 1969 (W. Germany, U.S., U.K., France, Italy and Switzerland) and nearly 60% of these tourists declared a "holiday" as the purpose of their visits.

12.1.5. NATIONAL PARKS AND TOURISM

In Tanzania, the importance of the National Parks is obvious in the context of the development of the tourism industry. When Tanzania achieved self-government in 1960, there was only one national park, Serengeti, but since then, several national parks have been developed covering a total area of 39,500 sq. km. and occupying 4.5% of the total land area of Tanzania mainland. The potentiality of these parks as tourist attractions is evident from the growing volume of tourists every

year. In order to provide an idea as to the popularity of the various parks, to assess the degree of capacity utilised by visitors and to get an indication of the visitors' movements around the year a survey is carried out every month by the Bureau of Statistics in Dar.

National Parks Visits

Visits to the national parks increased by 18.6% during 1971, from 179,000 in 1970 to 212,000, a moderate rate of growth though considerably lower than the 24% growth in 1970 and the 31% growth in 1969.

Table 45 Total Number of Visits to National Parks 1970-71

Nat. Park	Fee Pay- ing	Non-Fee Paying 1970	Total	1970			Annual % change 1970-71
				Fee Pay- ing	Non- fee pay- ing	Total	
Serengeti	35426	-	35426	50258	9	50267	+41.9
L. Manyara	48546	6228	54774	58141	2766	60907	+11.2
Arusha	12535	1142	13677	14208	1058	15266	+11.6
Ngorongoro	55422	1156	56578	66545	781	67326	+19.0
Mikumi	9677	4245	13922	9151	1570	10721	-23.0
Ruaha	734	231	965	812	462	1274	+32.0
Tarangire	2835	574	3409	6141	378	6519	+91.2
Total Visits	165305	13621	178926	205256	27024	212280	+18.6

*Source: Bureau of Statistics - Dar.

12.1.6 CONSERVATION

Since the tourist trade depends so heavily upon the presence of a rich wildlife, it is obviously of great importance to ensure that the animals are preserved. An important step was the creation of National Parks, and the area reserved for game has been gradually increased. There are also other conservation areas in the country. In brief therefore, there are 4 conservation areas:-

(i) National Parks: Wilderness area, in which game hunting is strictly prohibited and facilities are provided for tourist attraction. No human residence is allowed in the parks except staff quarters on the boundaries of the parks. The number of national parks in Tanzania include Serengeti declared N.P. in 1951; L. Manyara (1960); Ngorongoro (1960), Arusha (1960) renamed Ngurdoto N.P. in 1970; Mikumi (1964); Ruaha (1964); Tarangire (1969); Gombe Stream (Scientific Research - closed to tourists) (1968); Kilimanjaro N.P. (1974) and Mkomazi Game reserve in Pare.

(ii) Game Reserves: In these wildlife is conserved. Like the National Parks human dwellings are prohibited in the reserves. Some controlled hunting is allowed by special permission.

These include Selous, Rungwe River, Katavi Plain, and Biharamulo.

(iii) Game Controlled Areas: There is no control over human activities except for hunting which is only allowed by licence from the Game Division.

(iv) The Ngorongor Conservation Areas: Under the management of Ngorongoro Conservation Unit. Wildlife and human life is allowed to co-exist.

12.1.7 FUTURE TOURISM POTENTIAL - TANZANIA

The present contribution made by tourism to the economy represents only a small development of the huge potential, and there are now ambitious plans to greatly expand the industry. The government is anxious to promote plans to greatly expand the industry and promote tourism as much as they can and in a socialistic way. A Ten Year Master Plan for Tourism prepared by A.D. Little guides the development taking place today.

Among the policies recommended by this report for adoption are that:

- Tanzania should adopt a policy of cooperation with the other East African countries in promoting tourism;
- Tanzania should announce a long-range tourism policy (10 Year Master Plan) that not only describes the planned physical development of tourist facilities but also explains the role of private and public investment in tourism;
- Tanzania press for split charters to land at Kilimanjaro and Dar airports;
- Tanzania take immediate steps to establish a policy to preserve the unique game viewing experience in each of its national parks;
- Tanzania use 3-5% of her expected receipts from foreign tourists to finance an advertising and promotion programme which focusses on encouraging tour operators to package holidays which include a visit to Tanzania; and
- Tanzania establish a national hotel School . (Little, A.D., pg. 8).

Some of these recommendations have already been implemented - e.g. the opening of a national hotel school at Dar (New Africa Hotel).

The plan recognises that the 'Northern Circuit' taking in the Serengeti, Ngorongoro, Lake Manyara and the Arusha and Kilimanjaro national parks will continue to be the major tourist attractions. Large investments are being made to expand hotel accommodation in the Serengeti, at Ngorongoro and at Arusha. Of even more importance to the area is the KIA, when fully operational with all the supporting services - e.g. the new Mt. Meru hotel in Arusha - is expected to increase the

package tour traffic in the area.

It is also hoped to develop a 'Southern Circuit' which can also make a significant contribution to earnings from tourism. This circuit will be based on Dar, with its fine beaches, on Zanzibar, the Mikumi N.P. and the deep sea fishing off Mafia Island. It is also hoped to open up parts of the massive Selous Game Reserve, now mainly used for hunting safaris, to game-viewing tourists. In this southern area there are also a number of interesting historical sites, notably at Bagamoyo and Kilwa. An ambitious hotel building programme is planned to cater for this development. A number of new beach hotels are already built and others are under construction.

The plan has forecast that by 1978/79 more than 250,000 foreign tourists will visit Tanzania, and less than 10% of them will be travelling on business. This growth will bring the number of bednights to 1,826,000, that is an annual increase of 25% from when the plan was put forward (1970). More than 7,100 new beds must be provided to accommodate the foreign tourists expected during this plan period out of which 2,780 will be in the Northern Circuit.

As far as National Parks are concerned, by 1978/79 visits to these areas should increase to more than 800,000 per year, representing an average rate of increase of 22% per year during the plan period. At this rate special measures will have to be taken to avoid overcrowding in the national parks.

Tourism could become Tanzania's leading foreign exchange earner during the plan period. Its 1969/70 tourist expenditure amounted to about 61 mil. shs. By 1978/79, it is forecast that these expenditures will increase to almost 400 mil. shs.

per year from over 250,000 foreign tourists. After expending the foreign exchange required to support this level of activity, Tanzania will net almost 300 mil. shs. from its tourism industry ... more than she now receives from exports of coffee or cotton or diamonds.

Apart from this financial gains, there are other benefits amounting to 147 mil. shs., and employment in tourism is expected to rise from 2,800 employees (1969/70) to 19,400 in 1978/79 (Little pg. 30).

This tourist programme is expected to cost 700 mil shs. to carry out; the financing of which will be composed of the following: 29% Government, 8% government corporations (TTC and TNP); 21% private equity; 22% International loans and grants and 20% local loans.

Thus the future of tourism appears very promising, with large investments being made to tap the growing market. The government has to work very hard to remove some of the hurdles tourism is facing at the moment, e.g. lack of adequate accommodation, lack of infrastructure, low-key publicity etc. It is hoped that the 10 Year Master Plan (by Little) will guide future tourist development in the country.

Attention is now focussed on the Northern Circuit for a further detailed study since tourism here can play a very important role in the development of the region than it has hitherto done. The analysis will centre on the role of tourism in the Study Region - its economic, sociological, and ecological impact; its conflict with other land uses; the physical planning of tourism and why it is important and finally, the future of tourism in the region.

PART II

12.2 TOURISM IN THE NORTHERN REGION

Introduction

RESOURCES FOR TOURISM AND THEIR UTILISATION: THE ROLE OF PHYSICAL PLANNING AND DEVELOPMENT OF THE TOURIST INDUSTRY

In Part I of this Chapter, the conclusion was reached that tourism in Tanzania would continue to grow steadily and that the country would derive appreciable gains from this expansion of world travel. This being the case, it must be realised that adequate planning for tourism necessitates a consideration of tourism in the general context of land use, environment and physical planning, especially in this region with all its natural assets. It has emerged, from the experience of several countries, such as Spain, that as a general rule, and while tourism in those countries was still in its infancy, the authorities did not systematically examine their natural and other tourist assets, and did not draw up plans for building up tourism around them. Nor did they pay sufficient attention to the question of physical planning, by which the use of land for tourism and other purposes could be harmonised and uncontrolled development, disfigurement of the landscape and the undesirable consequences avoided. The reason was largely that the governments themselves were taken by surprise by the strength of forces operating the tourist market, had not expected such a rapid growth of demand, and as a result failed to take due account of tourism in their general economic policies and plans and this is not what we want to happen in this region. Such policies as were consciously applied to promote tourism were generally not conceived within the framework of a longer term physical or socio-economic master plan for this sector. Fortunately for this region, the A.D. Little plan is an attempt just to avoid the above mistake.

It should be remembered that, tourism is an unusual type of industry in that it produces nothing tangible: it depends upon a unique set of circumstances which may be present in a particular locality - natural, historical, or deliberately created - to which people are attracted for enjoyment. More than any other industry, it relies on the particular qualities of a certain physical environment; and the haphazard exploitation of this environment can lead to the extinction of the very quality that the tourists came for. Furthermore, tourism calls for various services and facilities, such as hostelry, catering, transportation, sports, recreation, entertainment, etc.; activities which must be performed with a minimum of interference to the activities of the local population and in harmony with the physical environment.

It is this aspect which lends such importance to the role of physical planning and development of the tourist industry. Since physical planning is concerned with the quality of the environment, its contribution lies in the fact that it can provide a process whereby the tourist objects - the monuments, the national park scenery and animals etc. - are preserved as part of this living and changing environment. It provides the essential framework within which tourists and local citizens alike can enjoy the advantages of a particular locality in perpetuity.

To date, physical planning is one aspect that has not been properly considered in relation to tourism development in the region inspite of having a national master plan for tourism. This is unfortunate because tourism is very largely founded upon the physical assets of unique geographical settings, natural assets requiring protection and controlled development.

Furthermore, tourism is developed by the expansion of tourist accommodations, transport networks and terminals, and other physical facilities, all of which cannot be planned or developed in a vacuum.

Tourist developments in the region and elsewhere, are too often conceived as economic questions, and tourist projects develop in isolation of physical planning considerations. While the importance of tourism in economic development of the region is recognised, the vital contribution of physical planning is frequently not understood and therefore not fully applied. Consequently, direct and indirect costs are often increased, the total effectiveness is reduced, the quality of the environment may be endangered, social problems arise, and ultimately, tourism investment may suffer with the decline of the physical environment and the emergence of social problems.

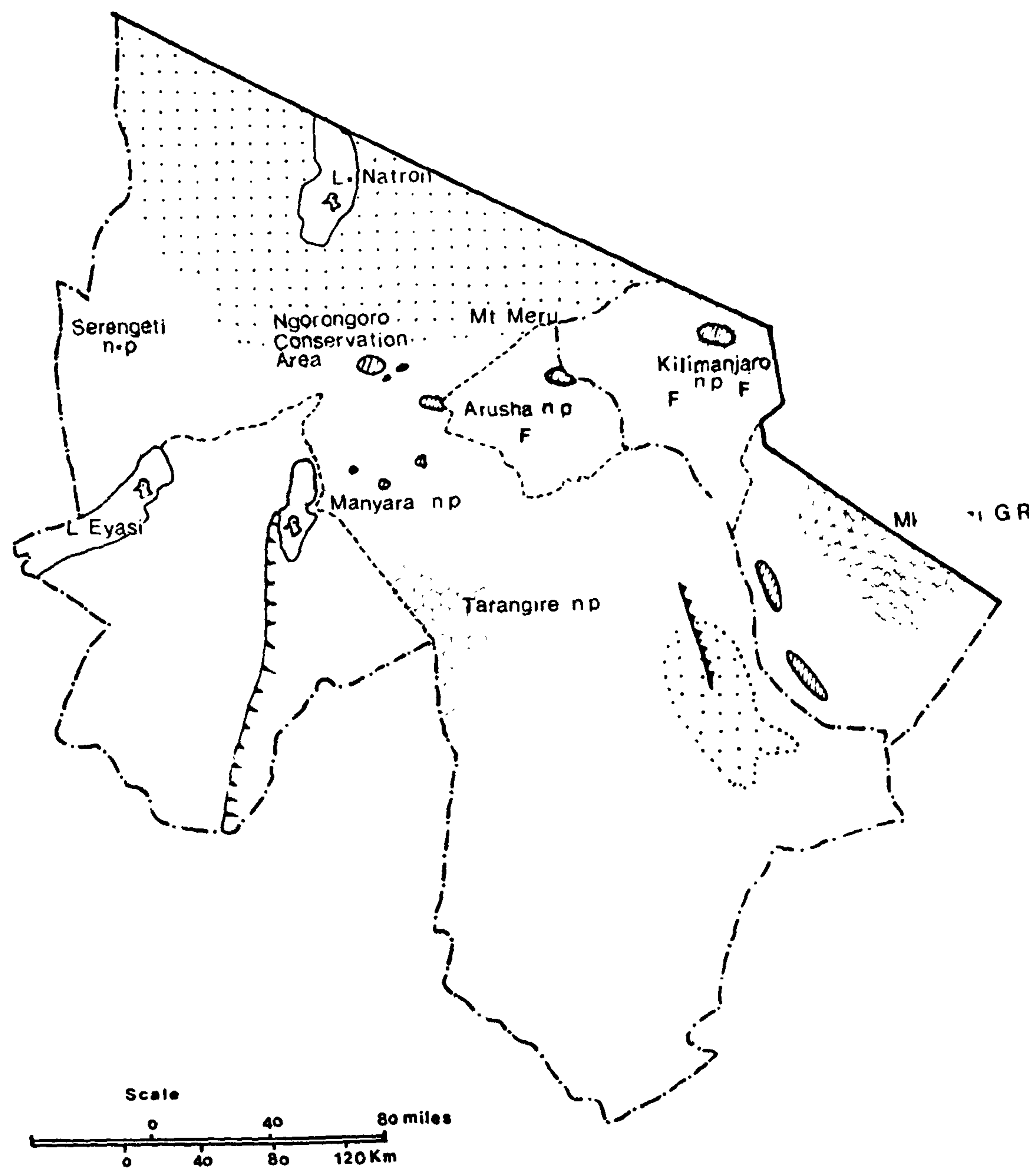
The question of physical planning as a means to assist in meeting the objectives of tourist development seems important enough to call for sustained action by all the agents concerned with tourism promotion in the region, particularly the government should show a lead here.

Having examined the role physical planning can play in tourism development, now attention is turned to examine the physical attractions of the region for tourism and how much planning has helped or directed their exploitation.

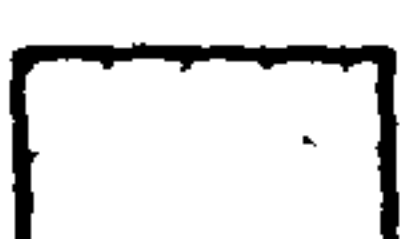


12.2.1. THE NORTHERN REGION: ITS NATURAL ASSETS AND OTHER TOURIST ATTRACTIONS.

The natural resources of a region that can be put to economic use are of two kinds: products, such as minerals, water, forests and fish, which can be bought, sold and transported and amenities or situations, such as water falls, natural

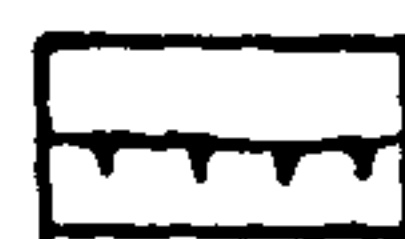



Natural Tourist Attractions



GAME AREAS

-  National Parks
-  Game Reserves
-  Controlled Hunting Areas

SCENERY

-  Cliffs and Escarpments
-  Mountains
-  Sport Fishing
-  Bird Watching

harbours, scenic mountains, sandy beaches which cannot be transported or sold, but which can be exploited for different purposes⁶.

It is the latter resources, including such natural factors as climate, which generally constitute the essential basis for tourism, but a country may in addition possess other tourist assets (not necessarily physical ones) such as those of historical, social, and cultural nature, like historical sites and monuments and other buildings of historical or archaeological interest. Indeed these may be regarded as virtually on a par with the natural endowments, in as much as they are part of a country's patrimony, though the buildings and sites may require restoration, embellishment and easy access before they become a major source of tourist revenue. Various aspects of a region's social and economic achievements, its general culture and its social organisation, can be an additional feature of interest to visitors, especially in developing countries. Generally, however, they are a complement to the natural resource endowment, and it is this endowment which must determine the general strategy for the development of tourism.

The vast study area with its varied topography and climate offers an extremely rich and splendid assortment of tourist attractions. The main tourist activity in Tanzania is centred here due to its abundance of wildlife. Some tours start and end here; others start here en route from Kenya.

It is in this area where we find some of the finest wildlife areas in the world concentrated in the famous national parks of Ngorongoro and Lake Manyara on one hand, and the less known parks of Arusha, Tarangire, Mkomazi and Kilimanjaro on

the other hand. The variety of wildlife includes elephant, hippo, lion, rhinoceros, leopard, cheetah, giraffes, wildebeest, zebra ... to name but a few.

Several thousand species of birds range in size from the ostrich down to the tiny tit. Thus, here the wildlife can be viewed, studied, photographed or filmed as the visitor wishes.

The visitor can also embark on a full scale safari to hunt elephant or lion. The services of experienced hunters can be obtained through Tanzania Wildlife Safaris. Trophies obtained are expertly treated and dispatched to the visitor's home.

The national parks are not only a source of joy for the many visitors from abroad; they are also, thanks to the tourists dollars and pounds, a valuable source of income to the region and Tanzania and they offer a unique opportunity for the first rate ecological research that is being done⁷.

For those who are specially interested there is pre-history to discover in the Olduvai Gorge - a site of the oldest remains of human kind.

Other attractions in the region include trout fishing in the numerous rivers flowing from the two mountain peaks of Kilimanjaro and Meru; mountaineering, especially on Kilimanjaro, and of course there are people to meet - comprising of several tribes descended from diverse racial stock. They are friendly and hospitable, rich in humour and laughter and possessing an innate courtesy that bids every visitor welcome to the region. No wonder, therefore, the region is such a wonderful paradise to the tourists. The area has tremendous potential for the future but this needs careful planning if we are to avoid the spoliation that has taken place elsewhere in the continent.

(1) NATIONAL PARKS AND GAME RESERVES IN THE REGION

Among the great tourist attractions in this region, as has been seen, is the presence of wild animals and the national parks which have been established to protect them. These national parks, with their teeming animals and beautiful scenery bring in thousands of visitors every year - both from abroad and from Tanzania. Today, the region has achieved tremendous success in preserving her wild animals. In 1960 Julian Huxley described the wildlife of this part of Africa as being "unique in abundance and variety and the wonder and envy of the rest of the world"⁸. Today, this natural beauty has been made available for all to see with good hotel and lodge accommodation and inexpensive transport to make a visitor feel comfortable.

The most important aspect of the development of the N. Region national parks is the great attention of their richly varied wildlife to tourists from abroad whose previous experience of African wild animals has been mainly confined to gazing at a few animals cooped up in a European or American zoo. Visitors to the national parks here are able to see wild animals of many different types and in vast numbers, moving freely, grazing slowly, or at times bouncing swiftly across the wide plains.

One wonders how the giraffe with his elongated neck and topheavy gait, will be able to unfold and extend his long neck down to the water. The smaller antelopes approach water in a hesitant and fearful manner, apprehensive of carnivores attacking them while bending down for water, of lurking crocodiles

dragging them into the water. Away from the water-holes the visitor can perceive hundreds of sleek, plump zebras accompanied by their comrades the wildebeest, with somewhat puzzled expressions and high fore quarters that do not seem to belong to the hind quarters. There are the amazing sights of warthogs, with small tails erect when running and curving tusks for all the world like great moustachios, or of lion cubs teasing each other or their mother, or the pathetic sight of a young animal abandoned and such early prey to a predator. Or there is the vicarious thrill of seeing on occasions a lion making its kill, and the aftermath with its ordered manner in which scavengers, jackals, hyaenas, vultures, and other birds of prey feast on the carcass.

There is also the appeal of the African landscape, sprawling in a seemingly endless fashion until the horizon curves away into the lazy distance or is suddenly ended by an abrupt hill or slope or escarpment. The great tawny plains, whose acacias reproduce in miniature, the horizontal lines of the major landforms, are often seen, by game viewers, in terms of wildlife in the dry season when the brown and golden grasses and the thorny, sparsely-leaved trees form such a contrast to the ordered green landscape of Western Europe. With this spectacular contrast of wildlife and landscapes the N. Region game parks - have so much to offer the visitor from Europe. And all this can be enjoyed from the safety of a car or a massively built hide, and the every comfort of a rest camp or lodge.

Below follows a short description of the region's parks and game reserves to see the different offers they can make to tourists.

a) Serengeti National Park

This region forms part of Tanzania's oldest and most popular wildlife sanctuary - the Serengeti N.P. which has perhaps the finest and most spectacular concentration of plains animals left anywhere in the world. It covers over 5,600 sq. mls. Its northern boundary adjoins the well-known Mara area. To the west the park stretches in a long corridor to within five miles of L. Victoria. On the eastern boundary lies Masailand, with the Ngorongoro Crater and Olduvai Gorge.

Little information is available on Serengeti in German times and it was not until the early 1920's that the first professional safaris started to open up the area. In 1929, a section of what is central Serengeti including Seronera was made a full Game Reserve, and it was about then the Serengeti first became world famous for its lions. In 1950, the whole of Serengeti was made a full Game Reserve, and it remained thus until the setting up of the National Parks Board in 1951, when it became the first national park in Tanzania.

The country within the park varies from the vast central Serengeti Plains, their savannah-type stretches dotted with flat topped acacia trees and interspersed with magnificent rock outcrops, to riverine bush, thick scrub and forest in the north and along the Mara river. Streams, rivers and small swamps and lakes add to the wide variety of scenery. Altitudes range from 3,000 to 6,000 ft., with Seronera Lodge lying at 5,000 ft.

Although chiefly famous for its lions, the Serengeti also contains less than 170 species of animals, including the most striking large forms like giraffe, buffalo, lion, cheetah etc., which number more than 1,500⁹. Recent censuses have recorded a population of more than a million animals, nearly a third of

them wildebeest; 500,000 gazelles, 180,000 zebra etc. One of the most remarkable and inspiring sights of all in Africa is the annual migration, usually in May or June, of wildebeest and zebra from the central plains to the permanent water of the western corridor. Immense herds gather in the plains and then move steadily westwards, six or seven abreast and sometimes several miles long. At the tail end of the procession come the cripples and those too old to keep up - with their inevitable following of lions and other carnivores. Thousands upon thousands of zebra and wildebeest pass through the central Itonjo Range, gradually spreading throughout the length of the corridor until many spill over the edges of the park boundaries. The park staff are constantly watching for any threat of poaching to ensure the continued preservation of these lovely animals.

Guides to the park are available at the official entrance to the park and at Seronera. Seronera offers accommodation in rondavels, hostel-type cubicles and safari tents. There are camp sites within two miles of the lodges and at Klein's camp, but to camp elsewhere in the park permission must be obtained.

b) Lake Manyara National Park

East Africa is well-known for its vast flamingo congregations on salt lakes, and one of the largest is at L. Manyara N.P., in the Rift Valley to the west of Mt. Kilimanjaro. At certain times of the year flamingoes gather in such huge numbers on the lake that they form a solid line of shimmering pink stretching for several miles. The bird life of Manyara is at least as spectacular as the animals, and more than 350 species within the park include egrets, ibises, storks and kingfishers. The variations in vegetation and the large areas of mud flats provide ideal feeding grounds for both resident and migratory species.

Lions at Manyara have a remarkable habit of spending most of the day spread out along the limbs of the acacia trees, 10-20 ft. above the ground. The park is famous for its buffalo, sometimes seen in herds of up to 400. During the dry season elephants come down to drink at the Endabash River almost throughout the day. At the hot springs at Maji Moto, kllip-springer stand on the rocky outcrops and reedbuck in the marshes.

Lake Manyara is a small park of only 325 sq. km., including two-thirds of the lake itself and all the land on the western shore as far up as the top of the Rift wall.

The earliest information on Lake Manyara can be traced back to a few German accounts written in the late 1900's, when travellers remarked on the herds of plains animals and the amount of big game. But it was not until about 1910 that Manyara aroused the interest of hunters, though after that the area was developed into one of the most popular hunting grounds in East Africa. Its proximity to Arusha, which is only 12.7 km. to the N.E., and its wealth of big game grew famous so quickly that it was made a game reserve in 1957 and three years later was converted to national park status. Six miles from the Park gate and magnificent views, the L. Manyara Hotel offers comfortable accommodation, an excellent cuisine and swimming pool and garage and service facilities.

c) The Arusha National Park

This includes Ngurdoto Crater, Momella Lakes and Mt. Meru National Parks which were recently merged into this one area. It is a topographical acknowledgement of an ecological fact. Together, they total an area of 117 sq. km., and lie at an altitude of about 1371.6 metres above sea level. There are no tsetse flies here, no mosquitoes and lions, probably because it

is too high for them. In most parks, one is confined to a car, but there are many areas for walks and picnics, usually for wildlife viewing binoculars are essential.

(i) One of the finest scenic attractions in the entire continent, the Ngurdoto Crater became a national park in 1961. It is also one of the most accessible of the National Parks, lying under Mt. Meru and about 10 miles north of the main road between Arusha and Moshi. Sir Julian Huxley describes this park as "a little gem among National Parks and is to some extent a connoisseur's park".

The crater floor of grass is about a mile and a half wide and a few hundred feet below the rim, which varies in height, and to preserve the peace of the grass floor no visitors are allowed to descend to it. Ecologists have decided that there should not be interference whatsoever.

On the outer slopes of the crater beautiful black and white colobus monkeys can be seen in the tall forest trees. Until recently these animals were frequently killed for their fur, used in making the tribal head dresses of the Chagga people of Kilimanjaro even more regrettably, they are now being sold to tourists. Sitting on the caldera rim one can look down and see rhino, elephant, buffalo, giraffe, baboon, several species of antelope and a great variety of birds.

(ii) Many visitors wish to photograph game at close quarters, and for this the addition of Momella, is a small area adjacent to the western side of the crater, is ideal. Momella became a national park in 1962, though in fact it has been preserved as a game sanctuary ever since German times by the previous owners of the freehold.

It is a lovely area and includes five large lakes, mirroring

snow-capped Mt. Kilimanjaro in their still waters. Along the shores of the lakes which vary in alkalinity, and therefore in colour, there is a wealth of bird life and a heavy concentration of rhino, elephant, buffalo, bushbuck, water buck and many other species. It is an ornithologists haven with about 400 species of birds recorded. Baboons and genets seem to be the main predators of the birds, taking large numbers of nestlings.

There is a lodge and three camping sites with water and firewood available. The Hotel Tanzanite and Mt. Meru Hotel offer alternative accommodation.

(iii) Mt. Meru Crater National Park.

A recent extension of the national park includes the breathtaking view of Mt. Meru (15,000 ft.). Its rock face rises a sheer 7,000 ft. forming a backdrop to the ash cone in the crater centre. The national park was formerly a reserve formed as much to protect the vegetation and mountain environments as to conserve the game itself. It has an area of 124 sq. mls. and lies on the slopes of Mt. Meru.

It is a landscape photographer's paradise and a wildlife haven. On the eastern and western slopes there are steep gullies through which run numerous streams and waterfalls. Natural vegetation here includes rain forest, bamboos and heath. The forest covering harbours elephant, buffalo, rhino and colobus monkey. Trails are currently being opened and other developments undertaken.

On the lower slopes the huge stinging nettle *urtica* *masaicus* grows making life unpleasant if one comes into contact with it. In the tree tops here can be seen the nests of tree ants, at a distance looking very much like bird's nests. Lammergiars soar effortlessly over the crater dropping bones

onto the volcanic rocks to break them open to extract the marrow. In the middle of the Meru area a huge cone of ash stands over 11,000 ft. above sea level. In the sparse vegetation at 12,000 ft. grasshoppers are abundant.

d) Kilimanjaro National Park

The Kilimanjaro N.P. is the latest addition to the list of national parks in Tanzania, which came into being in 1973, though for a long time the area on the slopes of the mountain itself had been a natural reserve. It took a long time before this area was so declared because of two reasons: There was no urgency since this area was fairly remote and hence well protected and secondly the money to open up this area to tourists was not available. The national park lies between the rain forest belt and the mountain peak which corresponds to the zone between altitudes 6,000 ft. and 19,340 ft. It is the habitat of the very rare Harvey's and Abbotts duikers, and of elephants, eland, leopards, colobus and blue monkeys. It is thought that the giant forest hog may live in the intensely thick forest and undergrowth. Live eland and elephant have been seen as high as 16,000 ft. above sea level, while the skeleton of a leopard was discovered beyond the snow line.

For the energetic and adventurous holiday maker there are organised expeditions to the summit of Mt. Kilimanjaro. No climbing experience is necessary, and the ascent return takes only 5 days.

Arrangements for climbing safaris are made by the Kibo and Marangu Hotels that stand on the lower slopes. Climbers wishing to make their own arrangements are required to book hut accommodation through a club formed for mountain climbers.

The mountain can be climbed in almost any month except during the long rains in April and May. The best months are January and February, and September and October when there are often cloudless days.

Fishing in the rivers of Mt. Kilimanjaro is pure delight. The rivers change their character continually - Runs, pools and waterfalls follow in quick succession.

e) Ngorongoro Crater

Situated 58 km. from Lake Manyara is the Ngorongoro Crater. The 610 m. deep crater covering an area of 102 sq. mls. lies in the heart of a wildlife conservation area inhabited by over 12,000 Masai¹⁰ (Arusha/Kilimanjaro, Supplement, Daily News, Wed., 13, 1973).

The Crater is now acknowledged as one of the great marvels of the world. The giant volcanic crater is the second largest crater on earth with a diameter of 11 miles - it compares with the Lago di Bolsera in Italy with a diameter of 10½ miles and Mono Lake in California with a diameter of 15 miles.

Two qualities make it one of Africa's major tourist attractions; its fantastic scenic grandeur and its prolific wild and floral life in a Garden of Eden setting. In some parts of the crater is a vast garden of rich flowers, lilies, gladioli, petunias etc. Its chief claim to fame is the number of variety of wildlife in the crater, which can easily be photographed at all times of the year because of the open nature of the country on the floor, and the only major African species not now found in Ngorongoro are the giraffe, kudu, roan and crocodile. Wildebeeste are most conspicuous, there are between 7,500 and 10,000 according to the time of the year.

Two comfortable lodges on the crater rim gives wonderful views of the spectacular scenery and the mountains surrounding the crater - there are six peaks rising to over 10,000 ft. in the volcanic highland nearby. Roads into and around the crater pass through the country's most magnificent scenery. Below the lodge, nearly half a mile down, the game can be seen wandering on the crater below. Thousands of flamingoes and other birds can be seen at Lake Magadi on the crater floor.

The crater is the central feature of a 3,200 sq. ml. Conservation Area where a government is conducting a pioneer experiment in multiple land usage. It is a unique attempt to reconcile the interests of the wildlife and the forests with those of the pastoral Masai people who live here. The conservation area has been the home of the Masai for generations, but it has now become an asset of national value - An indication of its importance as the country's prime tourist attraction is given by the number of people who visited the area in recent years: In 1970, the fee paying tourists amounted to 55,422 whereas the non-fee paying (most of whom were school children) were 1,156, and in 1971, the fee-paying visitors came to 66,545 with only 781 non-fee paying visitors. These figures give a total annual % change of +11.2% between 1970 and 1971.

So the objectives of the Conservation Unit which controls the area must be to conserve and develop the natural resources, including the water, the soil and the flora and fauna, and to provide a stable environment for the human occupants as well as for animals, both domestic and wild.

It took a number of years for the organisation to emerge from a series of intermediate steps to the point where it had

present powers and where its duties were more clearly seen. The Arusha White Paper of 1957 separated the Ngorongoro Crater Conservation Area from the Serengeti N.P. of which it had been part. For a brief period in 1957 the area was neither a Reserve, a Park nor a Controlled Hunting Area and the Masai were permitted to resettle it, in exchange for giving up part of their settlement area to the Serengeti N.P. Then it was brought under a newly created Conservation Authority of which the executive officer was then the D.C. of Loliondo who controlled grazing, administered the crater and heard grievances from the local Masai. Finally, a full time Conservator was appointed, in 1959. It was not until after independence government came into being that official recognition was given to the crater's prominence as a priceless national asset.

The Masai living in the crater are now subject to a number of restrictions which ensure that all the various interests are given a measure of protection. Residential permits renewable annually stop the infiltration of unauthorised pastoralists. Agricultural permits are only given for certain forest areas which in any case need clearing for reforestation with indigenous saplings. Honey hunting is controlled by permit. Masai cattle currently estimated to be about 100,000¹¹ are now being encouraged to graze outside the crater and a water scheme completed in 1963 piped fresh water from the Leraï Springs to the crater rim from the Crater as a further enticement to cattle to stay out of the crater.

The unit employs only Masai speaking guards, guides and porters, and among its present force and staff are trained in all branches of the work - forestry, game and veterinary. Game counts are taken, research is carried out in rinderpest and malignant catarrh, while the migration habits of the animals in

the crater are studied. These and other research programmes will be co-ordinated by an ecologist to help the management to strike a balance between the humans, the animals and the vegetation living together in one habitat.

Education is one of the vital parts of the Conservation Unit's work. The unit runs a demonstration dairy to show the Masai more economic methods of maintaining smaller herds of better quality beasts. Lectures and slide shows on the importance of tourism and game conservation are given¹².

f) Tarangire National Park

The Tarangire N.P., (1,370 m. above sea level), an area of thorn bush and flood plains approximately 1,560 sq. km., lies in Masailand, a few miles off the Cape-Cairo road. It is 120.7 mls. S.E. of Arusha and was declared a national park in 1967. It is an important holding ground for the majority of the game found in Masailand. It was earlier made a reserve to protect the main watering area for game and to conserve in particular three species of game - the rhino, oryx and geremuk. A fine animal not found in most of the rest of Tanzania is the lesser kudu. Tarangire is an important region of scientific investigation where research into land-carrying capacity and a game population census have been carried out, and it is also used as a training ground for the students of the College of African Wildlife Management, Mweka, Moshi. During the dry season Tarangire N.P. becomes a refuge area. It forms the nucleus of several of the more important controlled hunting areas.

Because the park features 9 distinct vegetation zones, it is the home of a wide variety of birds notably, starlings, doves ostriches and parrots. It has an airstrip for light aircraft,

a spacious camping site and a beautiful tented lodge offering accommodation and other recreational facilities.

g) Mkomazi Game Reserve

Situated on the boundary with Kenya and only partly in the Study Region the Mkomazi Game Reserve is a Tanzanian extension to the great Tsavo N.P. and is an important elephant migration area from Tsavo. 3,626 sq. km. in area, and 100 miles from Tanga, it protects the same three species as Tarangire. The northern section is particularly attractive scenically, with hilly country and open acacia savannah.

All these tourist amenities, scenery and wildlife, portray the natural beauty of the study area and its importance as a great area of tourism. Later on, this conservation area may as well be designated as a national park as the other areas in the region.

Table 46 LIST OF NATIONAL PARKS 1975 - A SUMMARY

Name of Park	Location	Area sqKm	Elev in m.	Date Declared National Park
Serengeti	324.8 km NW of Arusha covering an area between Mara, Shinyanga & Arusha	14820	914.4 to 1828.8	1951
L. Manyara	Lies 120.7 km SW of Arusha	325	325.0	1960
Ngorongoro	180.2 km NW of Arusha	8320	1981.2 to	1960
Arusha	Includes Ngurdoto Crater, Momella lakes & Mt. Meru	117	1371.6	1960 as Ngurdoto P. 1970 as Arusha N.P.
Kilimanjaro	area on slopes of Mt. Kilimanjaro	N.A.	1820 m to 40464.6	1973/74
Tarangire	120.7 km SE Arusha	1560	1371.6	1969
Mkomazi R.	Borders Kenya's Tsavo Park in Pare District.	3626	N.A.	N.A.

12.2.2. OTHER ATTRACTIONS

Among the other attractions to the area include mountaineering, trout fishing, ancient remains and the excellent cool climate in places like Arusha and Moshi and cultural attractions especially those of the Masai tribes. These are very colourful semi-nomadic people whose skills at beadwork is fantastic. They are very friendly too.

a) Mountaineering

The climbing of Mt. Kilimanjaro has been discussed briefly before, what needs to be added here is that the numbers of climbers has been steadily increasing. In 1970 the number of climbers of the mt. was 2,474 and in 1974 the number had risen to 3,200. The best period of the year to tackle this mountain is mid April and July - mid-October.

Already the climbers contribute an estimated 1,120,000 shs. to the local economy, not counting such other beneficiaries as EAA and hotels in places like Arusha and Dar¹³. For those who are not energetic, there are pleasant walks through the forest on the lower slopes and by waterfalls and, if it is not too cloudy, a glimpse of the mountain from every glade.

Another attraction is that of Mt. Meru which is 80 km. away. It offers yet another challenge to the enthusiasts and a test for the good walker due to the long distance involved.

For those who have time, other mountains offer a challenge, including Mt. Lengai (9443 ft.) - an active volcano in the rift valley north of Lake Manyara.

b) Trout Fishing

The Kilimanjaro and Meru mountains and the W. Usambara and Pare mts. abound with cold, clear streams, splashing and tumbling through the most magnificent scenery of forest and waterfalls.

Many of these streams have been stocked with rainbow and brown trout, and good fishing is available amongst the most beautiful surroundings. The streams are within easy reach of comfortable modern hotels in Moshi and Arusha.

c) Ancient Remains/Historical Sites

Tanzania's archaeological sites are so numerous that they form a considerable secondary attraction to the tourist, while one, the Olduvai Gorge near Nogorngor, falls into the class of world importance. Remains found in various parts of the country cover around 1½ million years of human habitation, from what are probably the relics of the earliest known man right up to the last century. They also disprove the fallacy that the indigenous African people have left nothing behind them over the past 2,000 years to inform the archaeologist about history and the population movements which occurred in the interior regions.

The sites and remains in the study region are as follows: The most remote from the present day and the most important for their addition to scientific knowledge of the beginnings of mankind, are the Early Stone Age discoveries now receiving the attention and interest of archaeologists all over the world. As a result of findings in the Olduvai Gorge the general trend of informed archaeological thought nowadays is that man originated in Africa, and that the ape-like ancestors of present day man developed the making and use of tools in Africa before anywhere else. At Olduvai Dr. and Mrs. Leakey, world famous anthropologists from Kenya, have found very early forms of stone tools, sharpened pebbles, associated with the skull of a man now popularly known as the 'Nutcracker Man' on account

of his large teeth. There is also evidence from Olduvai that these men probably built small stone shelters or wind breaks.

Olduvai is not only rich in relics of early man. The remains of the fossilised bones of gigantic ancestors of many of the present day African game animals are found there. Gigantic rhinoceros and baboon, huge sheep and other vast fossils have been found proving that Tanzania was wonce the habitat of species more fantastic than any still living today.

Archaeologists think of iron as having first been used in Africa about 2,000 years ago, and the remains which are probably of greatest interest to Tanzanian's themselves are those of this Iron Age. The best known is in this region at Endaruka, an area in the Rift Valley betwen lakes Manyara and lake Natron and between Arusha and Ngorongoro. It is a large area of stone built ruins, circles, cairns and terraces, covering about 10 sq. mls. The area is an ancient African Settlement, which according to 1964 archaeological finds, dates from the 4th to 16th centuries. The 1964 excavation was a follow up to Dr. Leakey's report of 1935 ,.

In 1966, the Ministry of Community Development and National Culture carried out an extensive excavation in the area and discovered small stone objects believed to be pipe bowls. These pipes are said to have existed centuries before the introduction of tobacco. It is thus assumed that some other plant was being smoked although this plant has not been identified yet.

The next group of sites of archaeological interest is made up of a vast number of rock and cave painting sites, richly found in the area between Lake Eyasi, Babati and Kondoa. They are found in shelters formed by overhanging rocks. There are

probably more than a thousand sites, and they are nothing like fully examined. Even in small areas where as many as a 100 have been recorded, others come to light in considerable numbers. It is possible to distinguish at least a dozen different styles of painting, which can be related to each other in time because the latter artists painted over the work of the earlier ones. In this way a sequence emerges, but it has not yet been dated. The earliest paintings may be over 3,000 years old and the latest as recent as 200 years old. There is no oral tradition alive today to say who executed the paintings or when.

d) Hunting Safaris

In this section only an evaluation of the hunting areas is presented, otherwise aspects like hunting statistics, poaching, revenue from hunting and so forth will be discussed later on in the relevant sections.

A vast area of this study region is ideal for hunting. The hunting areas are divided into game reserves and controlled areas. No one can enter or hunt in a game reserve without permission. People may enter and live in a controlled area without specific permission but those who wish to hunt must obtain a permit. Even the most shy animals are gradually becoming accustomed to vehicles and people, giving the visitors many opportunities to capture, both with still and cine photographs, of unique fauna in its natural habitat.

The Game Controlled Areas of the region occupy a vast area. These areas include: Loliondo, Lake Natron Area, Longido, Ngorongoro, Mto wa Mbu, Sanya Plains, Simanjiro, Lolkisale and Terrat; Rubu Masai, part of Kikwai etc. These reserves afford the sportsman an opportunity of hunting his trophies in the areas chosen to provide good specimens of the most sought after.

animals - the big FIVE, elephants, lion, rhino, leopard and giraffe. In most of the controlled areas the visitor who obtains the necessary permits will have exclusive rights for hunting.

Table 47 Game Reserves and Controlled Areas

<u>Game Reserves</u>	<u>Area sq. mls.</u>	<u>Game Controlled Areas</u>	<u>Area sq. mls</u>
Mkomazi	1,400	Lake Natron	2,940
Ngorongoro	N.A.	Ruvu River	2,510
		Sanya Plain	95
		Ruvu (Masai) RIVER	25

Source: Little, pg. VI.

Many professional hunters prefer to work from the Arusha area, rather than in game reserves in the south like Selous because hunting is possible during most of the year here despite the fact that few trophy animals are taken in the northern Hunting Blocks.

Hunting in the region, as in the rest of Tanzania, is administered by the Game Division of the Ministry of Natural Resources and Tourism. The organisation of international hunting safaris is largely in the hands of Tanzania Wildlife Safaris Ltd., which is wholly owned by Tanzania Tourist Corporation.

e) Local Crafts

Another attraction to tourists is the variety of local crafts, souvenirs, ornamental objects etc., which can be bought in most of the main centres in the region. With few exceptions these objects are of local manufacture or are made by local craftsmen, though a few are imported specially but have a distinct flavour.

Wood carvings by local craftsmen are more numerous and more varied than in any other part of Africa, as experienced travellers will confirm. Apart from the local carvings, one can also purchase some of the famous southern Makonde tribe carvings

made from ebony. These carvings are usually found in curio shops, while there are street traders selling the much more stereotyped work.

With wildlife so prolific in the region it is natural that items made from the skins and hides of wild animals should have great tourist appeal, and in this case Arusha is the great centre. Most of the articles are made from skins legally acquired and licenced from licensed hunters or government auctions. The most expensive skin used is crocodile, followed by lion, ostrich, elephant and leopard at one price and zebra, sabre, topi, impala, gazelle, lizard and snake about a third cheaper. The amount of skin used, its condition and colouring and the part of the animal from which it comes all influence the price. Goods available in these skins are belts, wallets, purses, handbags, spectacle cases, pouffes, compacts, cigarette cases, pill-box hats, watch straps and aravants. Elephant's feet in the form of stools, tables and waste paper baskets start at 400/- or more.

The region also has some gems and locally found stones include rubies, sapphires, garnets ... and other opaque stones. All these can be bought ready set by local craftsmen, or customers can choose their own stones and mounts for making to order in gold or silver. Stones of a first class quality are made up into necklaces, bracelets or brooches. Two lapidaries in Arusha cut out the stones, and also make very fine stone ashtrays from rich, grainy travertine locally mined.

A favourite with pipe smokers all over the world is the Tanganyika Meerscham pipe made locally at Arusha. It is offered at such a competitive price that to buy one is a must for the pipe smoking visitor.

Ivory carvings by local craftsmen can be distinguished from their imported counterparts by the local motif and the

designs, which are usually tribal or contain animals. The work is simpler, less intricate, less sophisticated, but often more attractive than the rather lifeless imports.

Other items include local drums; musical instruments of local design and craftsmen made beadwork, genuine Masai shields and spears actually obtained from tribesmen themselves are all available in Moshi and Arusha curio shops or in most tourist hotels and game lodges.

All these attractions go to show that the tourist who visits this region has a wide variety of activities to engage in and several different things to see, both fauna and flora. The region has tremendous tourist potential which is still to be tapped as long as proper exploitation is followed, and this is the subject of the next section.

12.3 PROBLEMS FACING THE WILDLIFE AND THE NEED FOR CONSERVATION

12.2.1 POACHING AND OTHER PROBLEMS

The wild life of this area is now facing problems of an unprecedented degree with man being the first enemy. With the rapid increase in population in urban areas at a higher living standard, there is demand for more protein foods. As a result because of better communication and more accurate and cheaper sporting rifles, poaching has become a more serious problem in many parts of Africa, and so too of this region. Certain species with products of high commercial value are endangered: leopards, crocodiles, pythons because of the value of their skins, elephants and rhinos for their horns.

Fraser Darling¹⁴ mentions the destruction of large herds of lechwe by periodical communal hunts of "chilas" in Zambia.

C. Pitman¹⁵ describes the use of pitfalls and dropspears in Uganda which are illegal, except where pitfalls are dug to defend cultivated areas. Stevenson Hamilton¹⁶ referred to the problems of natives who after the creation of the Kruger National Park in S. Africa, poached game on occasions in large bands using fire arms. Elspeth Huxley¹⁷ tells of the poaching methods of the Kikuyu in Kenya ... Thus, this problem is everywhere, not only in this region.

Poaching in this region is still a very serious threat to many game species and has a number of subsidiary effects which place extra importance on eliminating it. The poacher defrauds the government of revenue from game licences, he upsets the quotas fixed by the Game Division for legal licences, he is literally stealing from the government; since game is a natural asset owned by the State. By building hides near or over water he not only kills individual animals he has chosen but also denies the whole herd access to the water. His hunting methods are frequently cruel and ^{hurts} almost many more animals than he collects.

Tanzania has a more rhinoceros population than any other country, a good proportion of which are in this region. These must be carefully protected from extinction. There is a complete prohibition on the killing of rhinos, yet every year many are killed by poachers for their horns, which fetch a high price as a supposed aphrodisiac. There is a constant battle with poachers, who are assisted by the fact that the horns are easy to carry and hide. A man was arrested on a train carrying rhino horns in an empty gramophone case. Rhino horns have even been found in the petrol tanks of taxis.

The elephant population has also been suffering from 3 sides; drought, poachers and conflict with agriculture. Elephants are numerous and overcrowding is happening in this region, and due to their large numbers some of their natural habitats - the forest in some parts of L. Manyara N.P., have been stripped of bark and trees have been destroyed; Conservationists have been talking about culling the elephant population. To do this demands accurate counting of the elephants. The rate of breeding relationships between herds and their effect on vegetation has to be assessed and the incidence of disease noted. Each animal has to be identified and photographed; growth rate measured and estimates made on age. Such a task as undertaken by Ian Douglas Hamilton¹⁸ in his study of the elephants of Lake Manyara, needs money and takes a lot of time. Action is needed now for time is running out. The work the government or private organisations can do is very little.

Starvation resulting from drought is cruel but nature's way of culling. In the drought of 1973/74 affecting most of tropical Africa claimed the lives of many elephants and other animals in the national parks. For example in Kenya's Tsavo 5000 elephants were lost. The bush in several of Tanzania's national parks was littered with the bones of several animals and in the small and famous parks there was irreparable damage caused.

Apart from this natural culling, the human way, with arrow and snare gum is no less cruel. Mankind has always preyed on elephants but lately on a scale as never before, motivated not by the need for meat but by greed for money from the popular and valuable tusks. As Huxley¹⁹ says "Inflation has upped the price of ivory from about £5 a kill to £25, and transformed poaching from an affair of wandering hunting parties armed with poisoned arrows to a major racket organised by sophisticated

businessmen and others in command of fleets of trucks and Landrovers, ways of fiddling export permits and contacts in Hong Kong where much of the ivory finds its way, some secretly by dhow and some openly by air - at one time six tons a week were being regularly flown out of Kenya.

In this region, in 1972, for example, a group of people, some of them Kenyans were caught in Arusha with 159 elephant tusks worth over 300,000 shs. Poaching is much easier and common here because most of these trophies are slipped across the border to Kenya and sold in the black market at exorbitant prices²⁰. Most of the smugglers have established agents outside the country. They go round the region collecting whatever the poachers have to offer and then find their way to neighbouring countries to sell their loot.

While police and game officers are stepping up efforts to curb poaching, trophy smugglers are playing behind the scenes to undermine such efforts. They are paying high prices to poachers as an inducement to kill more and more animals. As noted by P. Marnham²¹, 'Illicity ivory dealing is Kenya's major commercial occupation'. The poaching of elephants here itself has reached a post war peak recently at more than 1000 elephants a month.

Although large scale motorised poaching in this region has declined in the past few years, poaching on a small scale seems to have risen. The number of people illegally entering game parks to hunt a few elephants, zebra or lions for trophies has risen considerably lately.

Unlike motorised poachers, these people are difficult to detect and often take their 'catch' home without even being

noticed by patrolling rangers. Other poachers poach game reserves under the cover of grazing livestock. They enter game reserves with large herds of livestock which they leave to graze while they rove all over the place hunting wild animals.

Such incidents have been regularly reported at Mkomazi Game Reserve in the Pare District where over 9,000 head of cattle, sheep and goats can be seen grazing at any time of the day.

Anti-poaching operations, however intensified, have therefore not provided a full solution to the problem.

12.3.2. Conflict with humans due to shortage of land

The fact that the elephant population is declining is undisputed. The battle (or "interaction" as it is now called) between man and elephants has continued since their first meeting. The elephants are losing. What started as a hunt for the pot and then for ivory has in this century become chiefly a struggle for land and the use of it. Elephants and farmers cannot share the same plot, and as the population in the region has expanded, that of the elephants has declined. The present speed of the region's population growth is now said to be threatening the survival of elephants even in the game reserves. For example, in the southern boundary of Lake Manyara N.P. where there is wheat growing there has always been conflict between wildlife and the wheat growers because of crops destroyed by animals every year. Another area of conflict is western Serengeti, where grazing of domestic animals and farming is fast encroaching on the national park as population congestion on Lake Victoria's shores becomes unbearable. Other farmer/wildlife conflicts have been reported in the Arusha and Kilimanjaro areas where the pressure of land shortage is forcing people to encroach on national park land.

People are spilling out over the land, cutting down forests, cultivating every inch they can find, driving their flocks and herds into marginal areas where wild animals, driven from more solubrious ones, have congregated. For the wildlife, the conflict is disturbing.

Some of the national parks we examined before are overcrowded. One has only to drive through some parts of Lake Manyara, or Tsavo (Kenya), to see the result. For example, Tsavo park is one of the largest parks in Africa. In ten years or so the changes that have taken place are great and alarming, most of the previous trees are gone, thickets have disappeared and soil erosion has set in.

Tsavo and some of the parks in the region which have suffered out of overcrowding, brings home the great lesson of ecology, that you cannot alter drastically one element without causing other changes which may have not intended or even envisaged. In former times, man, wildlife and vegetation kept in balance, even sustaining and reacting on the other in such a way as to keep the system going in perpetuity. Droughts, floods, climate changes affected but did not destroy the balance and were taken in the ecosystem's stride. If vegetation grew sparse in one place, the animals moved on to another where food was adequate. Great annual migrations took place. Predators including man kept the herds healthy and alert by eliminating the sick and old without depleting the numbers. Birds had nests to nest in, animals had shade in which to drop their young. It all formed an intricate pattern which has been disrupted by a single predatory species, man. In Africa, man seems to create deserts wherever he goes.

In this case in this region, it is the elephants who are creating the deserts but they are doing so because they are ringed in by humans. All round them are the shambas (small family farms) of Africans and the pastures of their goats, sheep and cattle. If the wild creatures venture forth they are killed. Once almost any wild animal sets foot outside its sanctuary it becomes a menace to someone's crops and liable to be destroyed. So cooped up in their parks, elephants bash and kill the trees and bush and bring about fundamental and permanent changes in the vegetation.

There is definite need to educate the people on the importance of preserving wildlife as a national heritage and the economic and social dangers of killing those animals for personal gain. People should learn to accept these animals. They should be made to understand the economic and social benefit derived from wildlife. But to understand and appreciate these factors, local residents should be given greater opportunity of visiting national parks. They should be encouraged to see, if not touch, the vast species of wild animals the country has inherited.

Two permanent hostels, one each in the Serengeti and Lake Manyara have been built where parties of local visitors, school children, local tribal representatives can be accommodated free, as part of a drive to show that the parks are not intended to be the preserve of the wealthy; few had previously had the opportunity to see their own national park for themselves.

Films have also been made as part of the educational programme; among them some of the first ever made in Swahili.

A mobile projection unit has enabled these films to be shown to large audiences in the areas surrounding the existing parks. Posters have been made for display throughout the country as well as for educational purposes.

12.4 WILDLIFE CONSERVATION AND MANAGEMENT IN THE REGION

Since the tourist trade depends so heavily upon the presence of a rich wildlife, it is obviously of great importance to ensure that the animals are preserved. This region's game has been exploited in the past through sport hunting and trophy collecting, through slaughter for food, skins, ivory and other game products for personal use or commercial sale, through the trapping of live specimens for sale abroad, and as a tourist and photographic attraction.

Steps have been taken in the past to protect wild game through the establishment of measures to protect certain species and to control the slaughter of others, and through the inauguration of measures to provide water and food to diminish deaths of wildlife from thirst and hunger. An important early step was the creation of the national parks and the area reserved for game has been gradually increased. The rapid decrease in numbers of wild animals in the region in the past half century, however, can be taken as a measure of what can and may happen in the next few years if more comprehensive and more energetic steps are not taken to prevent their further destruction. More efforts need to be encouraged in the current measures of establishing wild animal reserves, of experimental "game crop" farms and of game protection schemes in appropriate areas, and of further research into the value of local fauna as feed, the possibilities of improving the local meat supply from that source, and the ancillary supply of skins and other items for market, all as a means of conserving and protecting the wildlife of the nation as a valuable economic and cultural resource.

What follows now is a short discussion of the measures currently being taken to combat the threats to the wildlife. It must be realised that man is the ultimate threat to wildlife, man the hunter, man the herdsman, and man the politician. Although this region is big, yet encroachment of humans in areas now occupied by wildlife is inevitable.

This history of wildlife conservation and management in this region and in Tanzania in general, started early in the 1920's when Tanganyika created a game department for the first time, in common with Kenya and Uganda. Two factors made it necessary to start imposing controls of some sort on the hunting of game and on the game itself, and the Game Dept., was the outcome. First was the always obvious but now universally realised need to protect the game from excessive hunting. Second was the need to protect crops from destructive herds of elephant.

World famous Serengeti was among the earliest of the then game reserves to be formed in 1929. From then until the present day, there has been a gradual but steady increase in game and the scope of game protected areas. The reserves were created by the government and gazetted as areas in which nobody either tourist or indigenous, was to be allowed to live, cultivate or hunt. Until the Second World War, there was nevertheless a steady depletion in the numbers of wild animals, and it was the war itself which brought about a general upsurge of game destruction so intensive that a serious situation arose.

In this region in particular, the game suffered exceptionally heavy losses. In some areas wildlife was completely exterminated in favour of wheat growing schemes which then proved failures²².

Perhaps the two major steps since the creation of the first reserves came in 1951 with the setting up of the National Parks Board and the passing of the Fauna Conservation Ordinance. The previous year Serengeti had been gazetted a Close Reserve in which lion, cheetah, leopard, giraffe, rhinoceros, buffalo, roan antelope, hyaena and wild dog were totally protected. It became the first national park soon afterwards. At this stage Serengeti included the whole of the Ngorongoro Crater Highlands, but special problems arose with the watering and grazing of Masai cattle in the crater in drought periods, and in 1959 Ngorongoro was separated from the park and given its own department with the designation of Conservation Unit. The former game reserves of Ngurdoto Crater near Mt. Meru and L. Manyara in the Rift Valley followed, and two more areas have since been included - Tarangire and Kilimanjaro National Parks and Mkomazi Game Reserve.

Tanganyika took the lead at the International Wildlife Conference at Arusha in September 1961, with the issue of the "Arusha Manifesto", which gave a clear Declaration of Tanganyika's support for, and intentions with regard to, practical wildlife management measures. In this "manifesto" the President Julius Nyerere accepted the responsibility of looking after the wildlife heritage. He declared that:

"... The survival of our wildlife is a matter of grave concern to all of us in Africa. These wildlife creatures amid the wild places they inhabit are not only important as a source of wonder and inspiration but are an integral part of our natural resources and of all our future livelihood and well-being".

He went on: "In accepting the trusteeship of our wildlife we solemnly declare that we will do everything in our power to make sure that our children's grandchildren will be able to enjoy this rich and precious inheritance."

Since that time millions have enjoyed Tanzania's beautiful and varied resources of scenery, flora and fauna, from the majestic animal-dotted crater of Ngorongoro to the annual miracle of the Serengeti migration.

In statistical terms conservation achievements since Independence have been considerable, several new parks have been established and some expanded and reorganised considerably, The setting of the Tanganyika Wildlife Development Ltd. in August 1963, and the College of Wildlife Management at Mweka-Moshi in the same year, were important steps in conservation and management of wildlife.

Thus, game management and conservation in the region takes place through the established policies governing the establishment of game parks and game reserves. Threatened species are protected from hunting, which is organised through a government body. If the policies of conservation are followed then both the fauna and flora in this region will live to be enjoyed not only by tourists but by the local Tanzanian population since it is their inheritance.

12.4.1. GAME CROPPING

In the new concept of the economy of game, the Game Reserves, having been relieved of the responsibility of pure preservation, are now being looked upon as producers of game as a profitable crop which may be reaped by the tourist hunters or by such a body as TWD. It is appropriate to recall the biological fact that, to a certain extent, herds of most species of animal will replace unusual losses by an increase in the rate of reproduction, and it is this which permits considerable controlled cropping to take place without resulting in an ultimate reduction in the overall number of animals. While, for example, a herd of zebra

maintains its strength year after year by replacing losses due to disease, age and depredations of carnivores, if it is then cropped artificially by regular hunting it will meet the new demand up to a reasonable number by an increased rate of reproduction. It is therefore possible by properly managed and controlled cropping to produce a sustained yield which satisfies the demand for hunting, game meat and hides. This controlled cropping has been practical in some of the national parks in the region, e.g. Serengeti and has been successful in keeping the herds down to size which balances the available feed and water. Some of the meat is sold to the local people in the region and in some cases it is even being tried in the hotels catering for tourists. The meat provides protein to those people living in protein deficient areas. Since the establishment of game cropping in 1969, a total of 1.2 mil. kgm. of game meat has been utilised. Most of this game meat came from the Study Region where there is the largest concentration of animals²³.

12.4.2. GAME FARMING AND RANCHING

Another step taken in conservation of wildlife in this area, though at an experimental stage, is Game Farming and Ranching. Wildlife in this area as in the rest of Africa thrive on poor natural grazing and can be managed so as to produce a high meat yield without destroying the natural vegetation. There is a great diversity of wild animals, each well adapted to a special ecological niche and with different feeding techniques. Wild ungulates are complementary as grazers and browsers. They do not damage natural vegetation in the way that domestic livestock do. They are dependent on only a small number of plants, and do not, like domestic livestock, eat one type out before returning to another type.

In addition the reproduction rate for wild animals, compared with livestock, is very high and most species of the animals in this area produce at least one young per annum and also do have a great ability to withstand drought and lack of water. Animals such as the oryx, dorcas gazelle and other gazelles, and the impala can spend months in an area without surface water. Cattle cannot do this. Game can also be ranched in extensive tsetse infested areas of the region now precluded for cattle. Wild animals are also far more immune to disease than cattle. It has been estimated that the maximum possible revenue from cattle on 220 sq. mls. of the Amboseli Game Reserve in Kenya was £116,000 in 1968 compared with a minimum of £248,000 from tourism. With a projected 15-20% annual rise for 1980, tourist revenue could be as much as 1.2 mil. shs., - 2.1 mil. shs. by then²⁴.

12.4.3. Game Farming

This involves the semi-domestication of one or more species of animals with a view of farming them on a sustained yield basis. An experimental farm on the slopes of Mt. Kilimanjaro is trying to domesticate eland. "Experiments carried out by a local wheat farmer, Mr. Paddy Fox, in conjunction with the Mweka Wildlife College at Moshi, have shown that the eland is by far the most suitable candidate for domestication²⁵". It takes quick to people, it is hardy and it is much more efficient than the domestic steer at converging food into weight. This seems to confirm experiments carried out in the Soviet Union, where it is believed there are more than a million eland in captivity²⁶.

Coming back at the experiment on Mt. Kilimanjaro we find that at Ndumeit Farm, 8 calves have already been born in

captivity, and the adults are in good shape. A fully grown adult male can weigh up to 2,000 lb. compared to a maximum of about 1,700 lb. for a steer, and they are more resistant to East Coast Fever and other tick borne diseases. They can do with less water than domestic cattle and can make a living in much poorer conditions. Eland meat has an additional advantage in that it is of low calorific value and therefore good for dieters. Its low fat content milk is said to be good for heart patients and in the treatment of ulcers.

Mr. Fox has had less success with his efforts to try to domesticate wildebeeste, a million which roam the Serengeti just a 100 miles away. Although they are hardier than eland they reject human handling, and do not take kindly to domesticated animals.

It is still believed that nearly every wild animal is ultimately domesticable. Once the problem of capture is overcome there is no reason why they cannot be kept domestically.

A number of surveys too have been carried out by Talbot and Skinner²⁷ and others investigating the possibility of domesticating eland to provide products such as meat and milk.

Surveys considering the possibility of domesticating eland have also been started in the Transvaal and Natal in S. Africa²⁸. A pilot project is being developed in Uganda to determine the economic feasibility of eland farming in Karamoja²⁹ and a similar venture has been started in Kenya by the East African Wildlife Society on a ranch where eland and oryx are being studied³⁰.

12.4.4. GAME RANCHING

In contrast to game farming, game ranching is the scientific management of many species of wild animals in their natural

captivity, and the adults are in good shape. A fully grown adult male can weigh up to 2,000 lb. compared to a maximum of about 1,700 lb. for a steer, and they are more resistant to East Coast Fever and other tick borne diseases. They can do with less water than domestic cattle and can make a living in much poorer conditions. Eland meat has an additional advantage in that it is of low calorific value and therefore good for dieters. Its low fat content milk is said to be good for heart patients and in the treatment of ulcers.

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It is still believed that nearly every wild animal is ultimately domesticable. Once the problem of capture is overcome there is no reason why they cannot be kept domestically.

A number of surveys too have been carried out by Talbot and Skinner²⁷ and others investigating the possibility of domesticating eland to provide products such as meat and milk.

Surveys considering the possibility of domesticating eland have also been started in the Transvaal and Natal in S. Africa²⁸. A pilot project is being developed in Uganda to determine the economic feasibility of eland farming in Karamoja²⁹ and a similar venture has been started in Kenya by the East African Wildlife Society on a ranch where eland and oryx are being studied³⁰.

12.4.4. GAME RANCHING

In contrast to game farming, game ranching is the scientific management of many species of wild animals in their natural

habitat and without any effort to domesticate them. Roth³¹ describes it as the controlled cropping of naturally occurring multi-species game populations, possibly in conjunction with cattle, for the purposes of commercial meat production. Some of the advantages of game farming, compared with pastoralism have already been mentioned. Development costs are lower in game ranching than in cattle ranching, as cattle have to be kept in camps in which water has to be provided.

In the study area cattle and game coexist in the Ngorongoro crater without any problems. Again this happens in the Masai ranching areas both in this area and in Kenya, where game and Masai-owned cattle mingle freely. The same mingling occurs on the game ranches and farms of the Transvaal and Rhodesia.

With further studies and experiments, it will be possible to open up more ranches in the vast open areas of the study region hence making the potential of this area great. Caution has to be taken because one major problem is the possibility that wild animals can transmit diseases such as nagana, rinderpest, foot and mouth and other tick borne diseases to domestic cattle. Anyway, this multiple land use is very profitable and more effort should be concentrated in further development.

12.4.5. Research and Training

Game management and control is the wildlife theme of the 70's, but progress must be steady and policies conservative until more is known about wildlife. The life story and habits of even the commonest game animals are still relatively unknown. The balance of nature must be taken constantly into account as man starts to take control of the game over from nature. Facts about game are so few that years of progressive research must be

carried out before man's control can have much more than elementary observation and enlightened intuition upon which to rely.

There is a surprise around every corner for a game management authority. For example the keeping of wild animals in national parks has brought about a great change in the environment and has resulted in a series of new problems. The population of some species has risen quite rapidly and there are fears that the available food supply will not be sufficient. At the same time, animals, seeking refuge in game controlled areas, have moved into ecological zones in which they are not normally found, and this has caused some problems. A good example is the movement of large numbers of elephants into the Serengeti, an area where they were not normally found. The danger caused by these elephants threatens the whole ecological balance of the area³².

Research work now underway at the Serengeti Research Institute is intended to make sure that wildlife is preserved, and also to ensure that animal populations, in the absence of former controls, do not become so large that they threaten the environment of the national parks. A well-equipped field laboratory has been built, and a number of scientists are constantly at work on a variety of projects, including the migration, the social behaviour, population dynamics and predator-prey relationships of many different animals. An expert has worked on the problems associated with game cropping and animal disease in Serengeti and a comprehensive vegetational survey of the park included a study of every plant found in it, and a vegetational map of the area. At the same time it is now thought possible that the vast Serengeti herd of zebra and wildebeeste could become of economic value through the supply of protein to people

living in the region. Market research is going on into what meat people like and how they like it - as a soup powder or as fresh meat, for example, the possibility of exporting some game meat is being considered especially now there is the new KIA, and so are matters like the possible use of 'viable' parts of the carcasses as pet food, the marketing of skins, the processing of bones for bonemeal and meat for meat meal. At the same time work is going on at the Ngorongoro Research Unit on the possibilities for future development of mixed wildlife and agricultural land use systems. It is important to remember that people do live in areas also occupied by animals and the welfare of these farmers must be ensured.

It is hoped that all these efforts will help in preserving the animals in this region not only for the tourists but also for the local native population to admire and be proud of. Much more effort is needed as tourism increases, population pressure grows demanding more land and more use of poisonous insecticides are used which eventually reach the lakes where we have the best animals.

Training

Apart from the research institutions at Serengeti and Ngorongoro, the College of Wildlife Management at Mweka near Moshi helps to train most of the staff needed. The college was opened in September 1963. At the end of the first year of a two-year course for senior posts, 19 students were in training, 7 from Tanganyika Game Division and the others from other parts of Africa. A second course lasting 9 months and held once every year was also instituted to cater for middle grade officials and at the commencement of the 2nd of these courses 30 students

from Tanzania alone were enrolled. Subjects covered range from General government, administration through to mechanics and survey.

Most of the instructors at Mweka are ex-game wardens and have natural science degrees. The output has been very impressive to date. Some of the students who finish here are sometimes sent abroad for further training after working in the field for some time.

Another education establishment was started in 1966 mainly to train game scouts. This is located at Pasiansi.

CONCLUSION

Perhaps the most cogent reason for conserving animals and environment not only in this region but in the whole of Africa is summed up by D. Shedrick: "Man has become so scientifically orientated that he fails to take note of the need to escape the trammels and stresses of modern living, a need which leads to a widespread longing for the natural unsoiled and yearning for the solace of a wild place"³³.

Certainly several steps are being taken by the authorities in this region to conserve and manage the natural heritage we have, but the demands made upon the national parks here are so great that more knowledge and money is needed to guide future development.

To conclude we therefore see that multiple use of the region's wild animals is the most profitable approach, for the financial returns from game watching, park entrance fees, tourist accommodation, hunting, acquisition of trophies and game cropping are many times those obtained from pastoralism alone.

PART III

12.5. TOURISM AND ITS ASSOCIATED ACTIVITIES IN THE REGION

Having already examined the tourist attractions in this region and how these attractions are being protected and improved now, this section goes on into examining tourism and its impact on the region. Among the subjects to be covered will include, number of tourists, growth trends, length of stay, tourist accommodation and hotel capacity, ecological and economical impacts of tourism and the future of tourism in the region.

12.5.1. Number of Visitors

The number of tourists into the region has been estimated to have risen from 17,526 to 50,492 between 1968 and 1973. The greatest growth took place after 1969 on completion of several hotel projects in the region particularly in the national parks. A great majority of the visitors who come here are holiday visitors into the national parks, with the number of businessmen being very low. However, recently, the number of businessmen into the Moshi/Arusha area has started going up as a result of the widening activities of the EAC Hqs. at Arusha. The table below shows a breakdown of these numbers of visitors.

Table 48 Number of Visitors into the Region - Estimates

<u>Year</u>	<u>Holiday</u>	<u>Business</u>	<u>In-Transit</u>	<u>Total Visitors</u>
1968	15472	1441	613	17526
1969	15317	1179	607	17073
1970	29305	3924	1220	34447
1971				42723
1972	Not Available			51046
1973				50492

Source: Bureau of Statistics - Dar.

Nationality

As expected the majority of the tourists come from overseas, mostly from Europe and America. For this group, the highest group visiting the Arusha/Moshi area is composed of Europeans, whereas Americans form the highest group visiting the region's national parks. Actually, this is the single

main factor which attracts most of the American tourists into Tanzania since they have beaches of their own or have access to beaches which are nearer them. The number of American tourists into the region has been growing steadily over the years with the highest total in 1972.

The other tourists are composed of Tanzanian, and other African countries' nationals including Kenyans and Ugandans; and other overseas tourists coming from Asia and Australia, whose number is fairly small as the hotel statistics show.

Table 49 Hotel Bednights by Different National Groups, 1970-73

Bednights	Arusha/Moshi Area		Northern Wildlife Areas	
	1970	1973	1970	1973
Total Bednights	79600	106600	123300	166000
a(TANZANIANS	28200	51600	6700	4000
b) VISITORS	51400	55000	116600	162000
i Kenya, Uganda	8200	7300	4300	3000
ii Other African	1900	2300	5100	2200
iii Europe	21800	27800	48300	77100
iv America	16800	14200	54600	75700
v Asia & Austral.	2700	3400	4300	4000

In view of the paucity of data no attempt has been made to conduct a statistical analysis of the determinants of the rise in the numbers of those holiday visitors. However, there is little doubt that the explanation lies in a combination of rising, per capita incomes in the rich countries (increasing wealth and disposable income), percentage rates of increase of persons in the higher income brackets of two to three times the growth in per capita incomes³⁴, more leisure and paid holidays, falling international air fares (including increasing use of sharply reduced discriminatory fares in favour of short length of trip travellers, the introduction of charter flights to East Africa (Kenya); realistic prices at home and overseas, and greater currency freedom enable far more westerners (Europeans and American) than ever before to contemplate game viewing holidays

in Tanzania, and Africa as a whole.

In addition, the widespread interest in wild animals aroused by the effect of mass media, and particularly television with its extensive coverage of natural history, the work of national and international organisations such as the Nature Conservancy in the U.K. and the WWF, and the work of individuals such as Dr. Grzimek and Sir Peter Scott have increased greatly the tourist market interested in seeing at first hand Tanzania's great wild animal resources³⁵.

Africa has also entered in the field of international conferences and meetings so that large numbers of politicians, secretaries and staff and U.N.'s officials move around the African capitals. The attraction of Arusha as the HQ of the EAC may bring in a number of business visitors. This influx generates additional traffic. It is most likely that most of the people who come here will visit the national parks in the region due to its near proximity.

There is no reason to expect these factors to operate any less strongly in the future. The introduction of larger aircraft and more charter flights in the second half of the 1970's and the lower fares associated with them can be expected to lead to increase in international holiday travel. As well as they can be expected to result in an increase in East Africa's share. The opening of the Kilimanjaro International Airport and the new Meru Hotel in Arusha will encourage more charter planes to land here and hence increase our share of the tourist market.

12.5.2. Seasonality

As with the rest of Tanzania and the other parts of East Africa, the tourist year in this region exhibits distinct phases. Most of the tourists arrive in December and February

and between midJune to August. These are the periods without much rain. Although there are no individual figures for the region, the national figures for 1969 illustrates the trend clearly. In that year, the most holiday visitors arrived in February, July and December. The highest recorded in these months were three times the volume of holiday tourists who arrived in June, the low month of the year. The other low months for holiday traffic are dictated by the rainy season. April to May are low volume months because of the uncertainty of good weather during the long rains. During this time, the earth roads, especially in the national parks, can be very rough and sometimes impassable. In addition, the constant long rains prevent sight seeing in some of the areas. For example, Kilimanjaro Mt. top may sometimes not be seen for two to three days in a week. November also is a poor month, because it is known as the period of the 'short' rains.

The monthly fluctuations in the number of business visitors are predictably less pronounced than for the holiday visitors. The highest volume, registered in October 1968 was only twice the lowest volume, registered in January. There is also some indication that because of the lack of accommodation, businessmen plan their visits to avoid conflict with the peak tourist season.

12.5.3. Mode of Transportation

In the study region, a high percentage (60% approximately) of the holiday tourists arrive by road compared to the Tanzanian figure of 44.5%, reflecting the importance of the "bread and butter" circuit which routes tourists into Nairobi by air, then by road across the border into the National Parks in this region, and then some split off to go to the beach on the coast and some go back to Nairobi on their way home. A few others come

from the Southern Circuit - Dar and the SW area. These tourists first come by air and land at Dar, enjoy the coastal attractions and then come into the national parks before they fly home.

A few tourists fly into the region (Moshi/Arusha area) or into the national parks directly either from Kenya or from other parts of the country. Although this number has been small in the past, with the building of the new KIA, it is hoped that more tourists will be able to fly directly into the region from abroad by the use of charter flights or through the local airline (the EAA); tour the national parks and then either fly out again or go into other parts of the country - e.g. the beaches of Dar or Zanzibar.

A general analysis of the Tanzania's figures show that 81% of the business visitors arrive in Tanzania by air as opposed to only 50% of the holiday tourists. Only 12% of the business tourists came in by road - most of whom came from Nairobi into the "Northern Circuit".

12.5.4. Port of Entry

Statistics giving the first port of entry for holiday or business traffic show the importance of the "bread and butter" circuit of this area of Northern Tanzania. Since most of the tourists into the area come through Kenya, we find that entrance into the region is through the border posts of Namanga, Arusha, Moshi, Taveta and Himo.

Taking the nation as a whole we find that on average, 56% of the holiday makers come to Tanzania through the northern frontier, 38% through Dar and the rest from the south by road from Zambia. This underlies the importance and attraction of this area and shows the need to improve the road approaches into this region.

Other holiday tourists came into the region from the western towns of Mwanza, and Musoma - some of whom are visitors who would have been touring Uganda and the Lake Victoria area.

Visitors on business, on the other hand, select Dar as their entry point although this number is decreasing slowly since the opening of the new airport. With the designation of Dodoma as the new capital, in future we expect a number of tourists (particularly businessmen) to come through here.

12.5.5. Length of Stay

The average length of stay for tourists in the region and in Tanzania as a whole is an extremely important planning figure for predicting the number of new hotel rooms which have to be constructed and for calculating the overall benefits which increased tourism can bring to the region or the country. Unfortunately, it is rare for a country to measure a tourist's length of stay with easy precision, despite the fact that small errors in this statistic will result in significant over-estimates of the number of bednights and therefore hotel rooms required. For example, an error of one-third of a day in calculating the "average length of stay" would result in the success or complete failure of a 150-bed hotel (Assuming 100,000 tourists with a 5-day length of stay and a 55% average yearly occupancy rate in the hotel).

Figures for the length of stay of tourists in the region are taken to be those calculated for the rest of Tanzania. These figures have been calculated by A.D. Little³⁶ based on official data. (For method finding how calculation of length of stay is done, see Little pg. 1-15 to 18). According to Tanzanian sources of data, length of stay in the past fluctuated a lot, from 6 to 14 days depending on the holiday of the individual - Table 7.

Table 50 Length of Stay in Tanzania (days)

Average Length	1968	1969	On Business	
	On Holiday		1968	1969
Upto 30 days	6.7	6.4	6.5	6.9
Upto 90 days	9.8	8.5	9.4	9.4
Upto 180 days	11.8	10.2	14.9	14.9
Median Length	3	3	2	3
Modal Length	4		4	

Source: Bureau of Statistics and Little, Inc. pg. 1-15.

Because of the somewhat wide discrepancy in the calculations of Tanzania's historical length of stay, an attempt was made by Little, to derive the average length of stay based on data gathered from hotels. This analysis indicates that the effective length of stay for those tourists who stayed in hotels in Tanzania was slightly over five days. It is important to note that this calculation takes into account the business as well as holiday tourists.

Table 51 Derivation of Length of Stay in Hotels, Non-East African Tourists

		<u>1968</u>	<u>1969</u>
A Total recorded bednights ('000)		468	495
B Less: Tanzania bednights	206		198
1 Kenya Uganda bednights (est)	<u>46</u>		<u>49</u>
2 Subtotal		<u>252</u>	<u>247</u>
C Overseas tourist bednights		<u>215</u>	<u>248</u>
D Overseas tourist recorded ('000)		<u>49</u>	<u>56</u>
E Less: Non-hotel stayers (est)		<u>5</u>	<u>5</u>
F Hotel-staying overseas tourists		<u>44</u>	<u>51</u>
G Derived Length of stay (nights) (C+F)		<u>4.8</u>	<u>4.9</u>
H Conversion of tourist 'nights' to 'days'		.3	.3
I Length of Stay (days)		<u>5.1</u>	<u>5.2</u>

Source: Little, Table 1-12.

The conclusion from the above analysis is that an average length of stay should be regarded for planning purposes as being approximately 5 days in 1968 and 1969. This figure is less than the reported "average length" of stay for three reasons:

- a) The number of East African, particularly Kenyan, tourists making a quick swing through the northern game parks is thought to represent a considerable portion of Tanzanian tourists; this figure is not counted in the official length of stay figures;
- b) Certain long stay visitors who have been classified as tourists tend to skew the average length of stay upward; and
- c) Calculation of both the "median" and "modal" length of stay tend to indicate that the bulk of the pleasure tourists is inclined to stay significantly less time than the average.

12.5.6. NATIONAL PARK VISITS

As seen earlier, the importance of national parks is obvious in the context of the development of the tourist industry. In this section, there is a brief analysis of tourist visits to the national parks in the region to identify who visits the parks, where do they come from and which park receives the bulk of the tourists. Following this, will be an analysis of the infrastructure for tourism including hotels, game lodges and other facilities needed for tourism.

Total Number of Visits 1970-73

Visits to the national parks in the region have been growing steadily with a record growth in the period 1971/72 (1972, 221,694 visits) when growth was recorded in all the national parks in the region. Since then the number of visits have been growing at a slower rate, and even declined slightly, as in the case of the Ngorongoro.

Visits to the region's national parks in 1970 were 94% of the total national park visits in Tanzania and in 1973 had fallen to 91%. This shows the importance of this region in Tanzania's tourism. The fall in 1973 indicates that now the other parts in the south and coast are now at last being able to attract tourists faster than before. See table overleaf.

PARK

Residents of East Africa	N. Resi- dents	Total	Resi- dents	N. Resi- dents	Total	Resi- dents	N. Resi- dents	Total	Non R	Total
Serengeti 14483	20943	35426	10742	36252	47267	26712	42630	69342	18290	29841 48131
L. Manyara20290	29046	49336	20397	40510	60907	19389	47209	66598	18264	44271 62535
Arusha 7618	5328	12946	7526	7739	15265	7496	6489	14305	13256	19964 33220
Ngorongoro15449	39973	55422	9177	58149	67326	127326	48403	61195	8944	20040 28984
Tarangire 877	1958	2835	1962	4559	6519	3827	7382	10254	3107	6615 9722
Total	58717	97248	49804	147480	197284	70261	151433	221694	61861	120731 18255

All national parks revealed that the number of visits has been growing steadily with the greatest growth being in the Serengeti, Lake Manyara, Ngorongoro and Tarangire National Parks.

Number of Visits to National Parks: Residents of East Africa - 1970-1973.

Out of a total of 155,965 visits in 1970 only 58,717 of these were made by residents of East Africa including Tanzanians and this represents only 37% of the total visits. By 1973, the number of visits had declined further to 31% with only 61,861 visits out of a total of 182,592 visits to the region's national parks.

The highest growth of visits by residents of East Africa was recorded in Tarangire where growth was up by 74% and Serengeti 26%. There was a decline in visits to Ngorongoro National Park and Lake Manyara.

This slow growth or decline in visits by East African residents can practically be explained by the fact that charges in the game lodges are too high for the people to afford to stay at a national park lodge and secondly due to the lack of publicity by the government.

Non-Residents of East Africa

On the other hand visits by non-East Africans has been rising higher and higher. The number of visits went up from 97,248 in 1970 to 120,731 in 1973, a rise of 24%. The greatest rise was in Tarangire (237%), Arusha (275%) and then L. Manyara. Again Ngorongoro N.P. has shown a decline of about 50%.

PAID VISITS TO NATIONAL PARKS

Total Paid Visits to National Parks

Almost every visit to the national parks in the region is paid for. In 1970, 99.2% of all visits made were paid for and by 1973 this figure had fallen slightly to 95.8% mainly accounted for by the fact that nationals, especially school children and other parties were given free passage. This is a measure

taken by government to encourage more local people to appreciate their natural heritage.

In the same period too there was a slight increase of 2% in the number of free passage given to non-residents of East Africa, most of whom could have been VIP's or other such visitors.

All in all, the number of paid visits went up, which is a good trend for the income of the country, especially in the foreign exchange side.

SUMMARY

The majority of the visits to the region's national parks are made by overseas tourists and for the majority of tourists visiting Tanzania, a visit to the northern game parks is always included. Over 10% of the park tourists are made by Tanzania tourists and as many as a third are probably made by residents of Kenya, Uganda and other African countries. The high number of visits in this latter category is thought to be because Kenya residents tended to spend a greater number of days in any one park than the average overseas tourist³⁷.

If the figures of visits to Lake Manyara N.P. are analysed, it is apparent that a very high proportion of Tanzania's pleasure tourists must include the game parks of the northern region in their itinerary. As shown in the table below, as many as 57% of the pleasure tourists to Tanzania in 1969 probably visited Lake Manyara N.P. Considering that 40% of the pleasure tourists arrived in Tanzania by car, it would seem safe to assume that virtually all pleasure tourists traffic on the northern border stopped at Lake Manyara and that, similarly, a significant percentage of the traffic which flows in from Kenya to either Moshi or Arusha via the new airport also included a stop at Lake Manyara in their itinerary.

This emphasises the importance of the northern game parks in Tanzania's tourism. Visits into these parks is sure to increase with time and this means more money for the region and the country as a whole as long as careful development and planning of tourism is maintained by all the bodies concerned.

Table 53. Comparison of Overseas Visitors to Lake Manyara with Total Pleasure Tourists to Tanzania - 1969.

Park visits to Lake Manyara	41864
Assumed % overseas visitors	52%
Number of overseas visitors*	21769
Total Pleasure tourists	38155
% of visitors to Lake Manyara	57%
% of pleasure tourists arriving by road	40%

*Assuming each overseas tourist spends only one day at L. Manyara.

12.6 INFRASTRUCTURE FOR TOURISM

TOURIST ACCOMMODATION

No matter what a country's tourism potential is and how well it is exploited and publicised, tourism cannot grow unless there is an adequate supply of accommodation suitably adapted to the requirements of the market. One of the features of developing countries which have gone into tourism, like this region, is that the supply of accommodation generally fails to keep pace with the growth of demand, including that of domestic tourists using the same facilities, and usually factors on the side of supply, rather than of demand are the principal constraint on the expansion of tourism³⁸.

In this section, the region's tourist accommodation situation is analysed starting with the type, volume and geographical distribution of accommodation and also an attempt is made to identify some of the problems relating to the provision of sufficient and suitable accommodation.

12.6.1 Type, Volume and Geographical Distribution of Accommodation

1. The Different Kinds of Accommodation

Commercial accommodation consists of establishments which,

on a regular or on occasional basis, provide overnight facilities for visitors and other tourists. They may also provide services, such as meals, which are either ancillary to the accommodation or its main business. It includes therefore, not only hotels and similar traditional forms of accommodation, such as wild-life lodges, boarding houses, motels, inns etc., but also units in holiday villages, tourist complexes, camping sites, youth hostels and other places where construction is of a permanent or semi-permanent nature. It also includes other types of paid accommodation, much of which may be used intensively only at the height of the season, such as private apartments and villas, and furnished rooms in private homes.

In this region, as with the rest of East Africa, it is the traditional form of accommodation that predominates, the hotel, found in the towns largely because tourism here is still at a relatively early stage, based mainly on business travel and on visits by persons in the higher income groups who arrive by air/road and are accustomed to certain hotel standards. In the national parks there is a predominance of game lodges and these cater solely for the animal lovers and hunters who have come to view the animals here. Each national park has at least one lodge and some of the popular ones like Serengeti have several. These lodges are expensive to build, since they are built right in the national parks, remote from towns and other settlements. They are also more expensive than a traditional hotel in the towns of Moshi or Arusha.

Apart from the traditional hotels there are a few camping sites, either in the town parks (Moshi and Arusha have several camping sites within the town boundaries) or in the national

parks and tented camps. Currently these facilities exist in the Tarangire National Park, Serengeti and Arusha National Parks.

In the region, high grade hotels and game lodges have predominated rather than low-grade hotels both because it has been necessary to attract initially a clientele (esp. Americans) that could be assured the standards of comfort, hygiene and service to which it has been accustomed in more developed countries, frequently a necessary condition in developing countries that is relatively unknown to the international visitor, and because investment in this category of hotel has appeared more profitable and less risky than investment in lower grade accommodation. Important as it may sometimes be to begin with high class accommodation, as a preliminary to establishing this region in the world tourist market, now the possibilities should be investigated in investing an appropriate proportion of medium-grade or less luxurious accommodation suited to the more typical visitor who is now able, through group tours and other arrangements, to undertake international holiday travel. This will also be ideal for the local Tanzanian or East African citizen traveller whose money resources are less. This will thus encourage more visits to the national parks by the local people, which is the strategy of the government.

2. Volume and Location

In the region, there are several high grade and low grade hotels and game park lodges, although for the international tourist it is the high-grade hotel which serves his need most. In 1971 (a year with complete figures) there were 27 hotels and lodges in the region. Of these 16 were in the Moshi/Arusha area, and 11 were in the Wildlife areas. These show a fair amount of growth, from 17 hotels in 1968 when there were only

7 in the national parks and the rest - 10 - were in the Kilimanjaro/Arusha area. Today, the total number of hotels in the region has reached 29. Luxurious lodges and hotels have been built to cater primarily to the luxury North American and European markets which represents the greatest profit prospects and growth potential in world tourism.

In 1971, of the 16 hotels in the Kilimanjaro/Arusha area only 4 hotels were of an international standard whereas all the lodges in the national parks were considered as of an international standard. (Defined by the statistical department of the Ministry as rooms costing more than a certain rate, 50/- per day).

The daily rooms available in the hotels in Moshi and Arusha rose from 320 in 1968 to 436 in 1971, and in the national parks the number of rooms rose from 235 in 1968 to 557 in 1971. Thus the number of rooms in the national parks have more than doubled in the space of three years showing how attractive the national parks are and the speed the government is racing to try and match demand.

Of course, there are other small hotels of lower grade serving the needs of the lower scale travellers, in the towns of Moshi and Arusha, who are not necessarily travellers.

Table 54 Number of Hotels, Rooms and Geographical Location.

	Moshi/Arusha				Wildlife Areas			
	1968	1969	1970	1971	1968	1969	1970	1970
Daily no. of hotels	10	13	16	16	7	7	10	11
Daily no. of rooms	320	409	468	436	235	270	492	557

Source: CSB. Dar.

Geographical Location

Arusha

Arusha is the starting plan for safaris into the national

of Moshi, has two comfortable lodges which organise mountain climbing safaris. These are: Marangu Hotel (private) which provides full-board, good food and a number of camping sites, and the second hotel is Kibo Hotel (private) which also provides full-board.

West of Moshi we have Isirwa Safari Cottages situated 50 miles from Moshi on the spectacular wheatfarms on the north west slopes of Kilimanjaro, are well equipped and, at 6,000 ft. have sweeping views of Masailand and the Amboseli Game Reserve and Kilimanjaro.

b) Arusha National Park

There is no hotel in the park yet, but it can easily be visited from Arusha where there are several comfortable hotels (see Arusha). Just outside the park gate, comfortable accommodation is offered in thatched rondavels at the Momella Lodge.

Camping is allowed on Meru Mountain, and there are several sites. Clean, safe water may be drawn from nearby mountain streams and firewood can be gathered.

c) Tarangire National Park

In this park accommodation is available at the Tarangire Safari Camp (private). Each tent has a private toilet and shower.

Camping is permitted on application to the park warden. Campers must be completely self-sufficient, except for water and firewood.

d) Lake Manyara National Park

Lake Manyara Hotel is situated on the edge of the Rift Valley Escarpment, overlooking L. Manyara N.P. and some 6 km (4 mls) from the park gates and 2 kms. (1½ mls) from the airstrip which serves the park hotel. It is at an altitude of

1350 metres and 130 km from Arusha. Because of its proximity to Arusha it has for some years enjoyed good bed occupancy almost throughout the year. In 1967 it was decided to expand the hotel and redevelop it from 100 to 200 beds to meet the ever increasing demand for accommodation from overseas tourists. It is very successful and its ever increasing profits help to offset the losses incurred by the other hotels in the Northern Circuit.

Camping: Sites are available near the park entrances, but campers must bring their own food and drinking water, and must be completely self-sufficient. Mosquito nets are essential.

e) Ngorongoro Crater.

Ngorongoro Wildlife Lodge. Built on the edge of the Ngorongoro Crater, this government operated lodge is at an altitude of 2,250 metres and is 66 km from Lake Manyara. It was opened in 1969 Dec. with 100 beds and a further 50 beds were added in 1970/71. All the double rooms have a private bathroom and central heating. Bed occupancy is also good. Its potential was demonstrated in 1970, its first full year of operation when it achieved a bed occupancy of 54%, an almost unheard of achievement for a new lodge or hotel.

Ngorongoro Crater Lodge (private): has 105 beds. It is believed to be the oldest game lodge in East Africa. It was started in the 1930's with two bungalows - a cool retreat from the heat of the lower altitudes.

The Ngorongoro Forest Lodge (private): provides modest, but comfortable accommodation, full board.

Camping: No camping is allowed inside the crater, but is permitted in the conservation area. Campers must be self-sufficient even with water. There is no tsetse fly at the higher levels and no mosquitos.

f) Serengeti National Park

Lobo Wildlife Lodge: This lodge is of unique design, being built into the faults and contours of a massive rock promontory overlooking the Serengeti Plains approximately 65 km. from Seronera. It has a swimming pool dug out of the rock and filled by a waterfall. Opened in 1969, it is very heavily booked. It has 75 bedrooms (150 beds) each with private bathroom; its own swimming pool, shop and service station and is within 1 km of an airstrip for light aircraft.

Fort Ikoma (private): lies about 45 miles west of the park centre. This charming hotel was built as a fort by the Germans in the First World War.

Ndutu Safari Lodge (private): has 12 double rooms with private bathrooms and 21 double tents with ample shower and toilet facilities.

Seronera Wildlife Lodge: The hotel was completed in 1972 after some delays in its construction. It is sited at Seronera in the heart of the Serengeti N.P. at an altitude of 1350 metres and approximately 135 km from Ngorongoro. It has 75 double bedrooms (150 beds), all with private bathrooms and its own shop and swimming pool. It is less than 1 km from the airstrip which takes light aircraft and scheduled services and is expected to be very successful due to its strategic position in one of the most interesting and popular game viewing areas of Serengeti.

Camping: There are nine camping sites within two and a half miles of Seronera. No camping is allowed elsewhere in the park. Campers must provide entirely for themselves and may not use the lodge facilities.

Current Hotel Building Programme

Mt. Meru Hotel: This is a new venture by the TTC. The hotel is currently being built in the town of Arusha. The hotel will have 400 beds to give accommodation for the increasing number of visitors, especially tourists arriving through the KIA, in addition to catering for business visitors to the capital of the EAC at Arusha. The hotel facilities will include 200 double bedrooms, a restaurant, a bar and lounge, a coffee shop, bank and a swimming pool.

Proposed KIA Hotel: Currently, there are plans to build a 100 bed hotel opposite the new airport at Sanya Juu to be financed by both AMCU and KNCU plus some help from the TTC. The hotel is to be built in rondarvels in the style of the old Seronera Camp or the Africana in Dar. However, to date no firm commitment has been made about this project.

Mt. Kilimanjaro Lodge: Another proposal by the TTC is to build a lodge on the slopes of Mt. Kilimanjaro in the new national park to serve the people who will visit this park.

12.6.2. HOTEL CAPACITY AND OCCUPANCY RATES

Visitor nights and bed capacity. - Growth in bednights & Trends

Before examining this region's performance, it is worth noting that visitor traffic to Tanzania is mainly concentrated in the Northern Circuit (The Study Area) and Dar with total visitor bednights fairly evenly divided between the two areas. In the Northern Circuit, visitor traffic is largely directed to the Wildlife Lodges rather than the Arusha/Moshi areas except for mountain climbers. There is little traffic to hotels outside the two main areas³⁹.

In the region, hotel occupancy figures and yearly hotel occupancy statistics are difficult to interpret because new rooms keep coming into the market every year and secondly because of the wide swings which occur on a seasonal basis for accommodations catering chiefly to pleasure tourists.

Bednights

However, on the whole, total bednights in the region have been increasing over the past 4 years as more people came to this region. Total bednights increased from 202,600 in 1970 to 272,600 in 1971. Most of the growth took place in the period 1970/71. Overall the greatest growth in bednights was recorded in the national parks. The table overleaf shows the trend in the growth of bednights in the region, comparing bednights in the Arusha/Moshi area and the Wildlife areas.

HOTEL OCCUPANCY RATES

As has been seen, in the period 1970-73, there was a marked satisfactory rate of total hotel bednights and visitor bednights both of which are good indicators of expansion in the tourist industry.

On the whole in the national park lodges hotel occupancy rates in the period between 1970 and 1973 varied between an average of 43% to 50%. High occupancy rates were recorded for L. Manyara W. Lodge, Ngorongoro W.L. Lodge, and Ngorongoro Crater Lodge enjoying bed occupancy rates of over 60%, and Lobo having 50% occupancy rate. Once again demonstrating their popularity especially with foreign visitors. The other lodges - Seronera, Tarangire and Momella Lodge had bed occupancy rates varying from 16.2% to 27%

For the tourist hotels on Mt. Kilimanjaro and around Arusha National Parks and in the twin towns of Moshi and Arusha bed occupancy rates were of 35%. Only 4 hotels - the New

Table 56

HOTEL CAPACITY AND OCCUPANCY RATES BY AREA 1970-73

	<u>NORTHERN WILDLIFE AREAS</u>				<u>ARUSHA/MOSHI</u>			
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
A. BEDNIGHTS	123.3	144.9	178.4	166.0	79.6	91.8	104.3	106.6
a TANZANIANS	6.7	2.7	3.5	4.0	28.2	38.3	45.6	51.6
b VISITORS	116.6	142.2	174.9	162.0	51.4	53.5	58.7	55.0
i Kenya, Uganda	4.3 ⁽¹⁾	2.0	3.4 ⁽¹⁾	3.0 ⁽¹⁾	8.2 ⁽¹⁾	7.8	8.5 ⁽¹⁾	7.3 ⁽¹⁾
ii Zambia		0.3				0.5		
iii Other Africa	5.1	1.1	1.1	2.2	1.9	1.5	1.5	2.3
iv Europe	48.3	74.3	82.8	77.1	21.8	22.2	27.5	27.8
v America	54.6	58.2	82.6	75.7	16.8	19.7	18.6	14.2
vi Asia & Australia	4.3	6.3	5.0	4.0	2.7	1.8	2.6	3.4
B BEDS AVAILABLE	288.4	371.4	393.1	373.8	339.6	262.6	290.7	298.2
C BED OCCUPANCY RATE	42.8	39.0	45.4	44.4	22.9	34.9	35.9	35.7
D ROOMS OCCUPIED	67.0	81.1	99.0	90.3	53.5	57.3	71.7	74.2
E ROOMS AVAILABLE	142.7	186.0	196.4	184.9	156.7	156.8	170.6	175.0
F ROOM OCCUPANCY RATE	46.9	43.6	50.4	48.8	34.2	36.5	42.0	42.4

Source: Bureau of Statistics - Dar.

Arusha, the New Safari, the Tanzanite and the Mt. Meru Game Sanctuary - had bed occupancies greater than 50% (1972-73). The rest were all below this rate.

One of the main causes of these low occupancy rates in tourist hotels is the impact of the rainy season between April and June. Even the highly successful Ngorongoro Crater managed to attain only 22% bednight occupancy rate during May 1972.

This low occupancy rate as a result of seasonality of tourist flows can have some serious consequences. For example, a hotel may be full in the peak season and not full in the off-peak season. In such a situation, there may be excess capacity in peak season so that a new hotel may not be a viable operation. However, the individual hotel statistics in the region indicates that while a seasonal influence is apparent, there is still excess bed capacity in all hotels.

Thus, consideration of occupancy rates raises the question, for hotels and similar commercial accommodation, of whether to plan for peak demand. If the supply is insufficient to meet peak demand, e.g. in the parks, potential foreign exchange will be lost, either completely or partially, as it happened in the 1960's when Tanzania had to turn away lots of tourists due to the lack of capacity. Even in the park hotels today supply in the peak period is very hard to meet - necessitating advance booking of sometimes two years for most tourists. Visitors unable to find the desired kind of accommodation have to make do with private rooms and the like; but there may be a significant economy in terms of investment.

On the other hand, if the attempt is made to satisfy peak demand, the resultant average annual occupancy rate for hotels may be too low to ensure an acceptable level of profitability,

particularly if there is a strong seasonal pattern of tourism as it is in this region.

If the seasonal pattern of demand is such as to affect the profitability of investment, every effort must be made by the tourist trade, with appropriate support from the public authorities (the TTC etc), to induce additional off-season custom that brings in extra revenue over and above the extra cost of providing services for the visitors.

Measures to this end have been taken by the Tanzania government, through its TTC body, and these operate in this region and elsewhere in the country. The measures include substantial low-season and off-season reductions for hotel rates and tour excursions, etc. backed by suitable publicity in the daily Tanzania press aimed at persons, including residents of Tanzania, and the neighbouring countries of Kenya, Uganda and Zambia, who can travel outside the main season and stressing the advantage not only in terms of cost but also of less congestion and better service during off season periods. Considerable success has been achieved in this direction in the region, but more publicity is needed if more residents are to enjoy the wildlife on their doorsteps.

It is important to stress in this connexion that hotels should be so designed to provide a wide range of services that can satisfy the needs of different categories of visitor, including those (generally of different age & income groups) who are able, and can be persuaded, to come outside the main season. Special efforts can be made also to induce residents of Tanzania to use the accommodation capacity at weekends and other periods when it is not fully taken up.

Construction costs for most lodges in the N. Region cost

approximately 10 mil. shs. or over each. (For more details see section on costs of tourism, page).

12.7. OPERATING COSTS AND PROFITABILITY

This is an analysis of the lodges in the national parks with particular reference to Lake Manyara and Lobo Wildlife Lodge whose detailed figures are available for analysis.

The lodges (owned by the government) in the national parks in the region all come under Serengeti Safari Lodges Ltd. which is a 100% TTC's holding which in 1973 employed just over 500 employees.

The development of this company was initiated in an effort to improve utilisation of the tourist potential of the rich natural resources in this region. It runs four lodges, Seronera W.L.; L. Manyara Hotel; Ngorongoro region. Its primary objective is to cater for the luxury N. American and European markets which represents the greatest profit prospects and growth potential in the world tourism. It now offers 500 rooms and about 1,000 beds. Its market potential is demonstrated clearly in the operating results of Lake Manyara Hotel as will be seen below. Comparative results* in 1971 were as follows:-

	<u>Lake Manyara</u>	<u>Ngorongoro</u>	<u>Lobo</u>	<u>Total</u>
Sales ('000) shs	7057	4569	3302	13928
N.t Profit ('000)shs	23	(381)¶	(939)¶	(1297)¶
Bed Occupancy (%)	58	58	36	51

*Included in the company's expenses were 619,000/- spent on staff training.

¶ Losses.

Source: TTC Annual Report 1970/71, pg. 28.

As shown in the figures above, Lake Manyara hotel is the only earning unit in the company whose profits are beginning to exceed the diminishing losses of the other three still

facing teething problems. The profit and loss Appropriation Accounts for the year ended 31 Dec., 1971 for this company shows that there was a net loss of 4,451,425⁴⁰. Since then things have been improving just slightly but losses are still mounting.

These losses have come about due to:

- a) low occupancy rates - 58% as opposed to the estimated rate of 74%, especially in the off-peak periods;
- b) heavy running expenses and loan payments; and
- c) some of the hotels - e.g. Lobo - have had to close for a time due to lack of water. This point is now resolved.

A detailed analysis of the 1973 accounts of 2 hotels - Lake Manyara and Lobo Wildlife Lodge (one making a profit and another making a loss) will bring out some of the main features and problems associated with the running of lodges in the national parks in the region. First, we discuss income.

a) Income

L. Manyara Lodge's yearly actual income, up to 31.5.73., came to 3,390,245 shs. which is 83% of the estimated expected income of 4,088,690. On the other hand, the income of Lobo Lodge (by 30 April, 1973) was 1,836,473 or 89% of the expected yearly income of 2,056,559 shs. Much of this income comes mostly from room rentals, food, drink, vehicle services and lodges. In both cases it is seen that the expected income did not materialise most probably because of low occupancies and other unexpected expenditure.

b) Cost of Sales

However, the provision of the above services costs money and when this is deducted from the net income the operating profit or loss starts to show. For Lake Manyara, in 1973, the

TABLE 57

SERENGETI SAFARI LODGES LIMITEDLAKE MANYARA HOTELPROFIT & LOSS ACCOUNT FOR THE MONTH ENDED 31st MAY, 1973.

<u>INCOME</u>	<u>Month</u>		<u>Year to Date</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Actual</u>	<u>Estimate</u>
Apartments	53732	108831	1849694	2324175
Food	51008	109368	827751	985016
Drink	16547	32550	257231	293100
Tobacco	3664	3255	28184	29310
Laundry	500	1302	8725	11724
Shop	11110	21700	184350	195400
Vehicle Services	9170	15190	116820	136780
Other Income	12367	10610	108980	105885
Telephone	969	1500	8310	7500
	<u>159067</u>	<u>304306</u>	<u>3390245</u>	<u>4088690</u>
<u>COST OF SALES</u>				
Food	25709	54684	385755	492408
Drink	8637	16926	126760	152412
Tobacco	3330	2962	25559	26671
Shop	7405	14559	116010	130938
Vehicle Services	8408	14279	107734	128574
	<u>53489</u>	<u>103390</u>	<u>763818</u>	<u>931003</u>
<u>GROSS PROFIT</u>	105578	200916	2626427	3157707
<u>Less Operating Expenses</u> <u>including wages etc.</u>	<u>232632</u>	<u>285659</u>	<u>1633235</u>	<u>1872499</u>
<u>OPERATING PROFIT/(LOSS)</u>	(127054)	(84748)	993192	1285208
<u>Less Depreciation &</u> <u>Amortisation</u>	60457	60457	302285	320285
Training Levy	16951	16951	84755	84757
<u>TRADING PROFIT/(LOSS)</u>	(204462)	(162151)	606152	898166
<u>Less Loan Interest</u>	51020	51020	255100	255099
Bank Interest	5468	5469	27136	27344
Director's Fees	250	250	1250	1250
Management Commission	35718	24005	88075	132968
<u>NET PROFIT/(LOSS)</u>	<u>(225482)</u>	<u>(194885)</u>	<u>234591</u>	<u>481505</u>

TABLE 58

SERENGETI SAFARI LODGES LIMITEDLOBO WILDLIFE LODGEPROFIT & LOSS ACCOUNT FOR THE MONTH ENDED 30TH APRIL, 1973.

<u>INCOME</u>	<u>Estimate</u>		<u>Actual</u>	
	<u>Month</u>	<u>Year to Date</u>	<u>Month</u>	<u>Year to Date</u>
Apartments	116235	1077999	99876	934448
Food	77962	533115	66532	442535
Drink	22050	150780	122183	153051
Tobacco	2630	17985	3553	18243
Laundry	6614	4200	234	3071
Shop	10647	72805	12110	69830
Vehicle Services	18900	129240	22641	134973
Other Income	10000	69235	6899	80190
Telephone	300	1200	-	132
	<u>259338</u>	<u>2056559</u>	<u>234008</u>	<u>1836473</u>
<u>COST OF SALES</u>				
Food	38981	266577	34930	230127
Drink	11466	78405	11597	78954
Tobacco	2393	16367	3254	16813
Shop	7133	48778	7842	43435
Vehicle Services	16065	109854	19870	116124
	<u>76038</u>	<u>519961</u>	<u>77493</u>	<u>485453</u>
<u>GROSS PROFIT</u>	183300	1536598	156515	1351020
<u>Less</u> Operating exp.	<u>204128</u>	<u>1022803</u>	<u>202995</u>	<u>999280</u>
<u>OPERATING PROFIT/</u> <u>(LOSS)</u>	(20828)	513795	(46480)	351740
<u>Less</u> Depreciation & Amortisation	31869	134301	31869	127476
Training Levy	10706	42825	10706	42825
<u>TRADING PROFIT/</u> <u>(LOSS)</u>	(63403)	336669	(89055)	181439
<u>Less</u> Loan Interest	49381	197524	49381	197524
Bank Interest	5469	21875	5469	21875
Director's fees	250	1000	250	1000
Managment Com- mission	(9746)	49482	(32396)	26858
<u>NET PROFIT/LOSS)</u>	<u>(108757)</u>	<u>66788</u>	<u>(111759)</u>	<u>(65818)</u>

hotel spent 763,818/- for buying food, drink, tobacco and providing other services. In addition there is also 1,633,235/- operating expenses. The Gross Profit came to 993,192/- (I.e. 2,626,427/- minus 1,633,235) and out of this must come depreciation, training levy, loan interest, director's fees etc., which in the end leaves a net profit of only 234,591/- for the year.

Although this net profit is not very high for this area it is very significant because when all the other hotels are making losses this hotel is the only one making a profit.

For Lobo W. Lodge things were not as bright as in the case of the latter. The cost of sales of food, drink, tobacco came to 485,453/-. Thus the gross profit was 1,381,020/- (I.e. 1,836,473 - 485,453/-), but from this must be subtracted operating expenses which were 999,280/- and this gave the operating profit to be 351,740/-. When we subtract depreciation, bank interest, director's fees etc. this leaves a loss of 65,818/- for the year 1973 (See Tables 57 & 58 on pages 257, 258).

This is not a very healthy state to be in. Much of this loss is due to the low occupancy rate and for some time this hotel had problems with the availability of water necessitating in closures and thus led to a loss of revenue. Perhaps with more promotion occupancy rates could rise and hence help the financial situation of this hotel.

Since over 62% of the food, tobacco and drinks are bought locally within the region, it means that the money spent on these items by the hotels and lodges filter through to the local economy going back to the hands of

a) the farmers who produce the beef, vegetables, poultry, eggs etc., and

b) the shopkeepers who sell the cigarettes etc., and

c) the brewery in Arusha which provides a proportion of the beer consumed in the lodges. The rest goes overseas or to other parts of East Africa to pay for the remaining part of the food, spirits and other necessities required by the tourist.

d) Operating Expenses

The biggest item in operating expenditure in both hotels is general and miscellaneous expenditure (about 30%) which includes expenses on advertising, sales promotion, commission to Travel Agents; hotel levy, insurance etc. After expenditure for the above comes salaries and wages (24%), staff expenses, property upkeep etc.

Again, most of the money paid in salaries and wages to staff is spent in the region's towns of Moshi and Arusha or the smaller towns near the parks - e.g. Mbulu, Oldeani, Mto wa Mbu etc. for the purchase of goods and food and hence goes into the local economy. Some of the money is also sent to other parts of Tanzania in the case where a worker sends some money to his family which does not live in the region. Thus, this is one of the multiplier effects of tourism which is of great benefit to the region and the country as a whole.

The conclusion from the analysis of the lodges here is that some of the losses currently being made could be offset by better management; more publicity to increase better occupancy rates especially during the off-season periods; and for new hotels or lodges, better design can improve the chances of making profits sooner. The hotels and lodges here inject money in the local economy through buying some of their necessities from the region, and so their prosperity is the prosperity of the region too.

12.7.1. Hotel Incentives

To increase return on investment to a rate attractive for international as well as local financing hotel incentives must be given. Some of these incentives include the following:-

a) Tax Holiday

It has been recommended by experts that hotels and lodges be exempt from income taxes for a period of 10 years after construction. This would increase the return on investment capital by 2% (under the assumption that no debt is used to finance the project). Assuming a 70/30 debt to equity ratio, the tax holiday would nearly double the project's return on equity from 8-10% to 15-18%.

Similar tax holidays are common to many countries seeking to develop their tourist industry. Without the tax holiday, the return on hotel and lodge investment would be too low to attract commercial lenders or equity investors,

b) Duty Free Construction Materials and Use of Local Material

Most countries seeking to expand their tourist industry allow duty-free import of equipment and materials used in approved hotel construction. In the case of lodge construction, these duties amount to approximately 8% of total construction costs. Experience in other countries indicates that attempts to seek duty rebates on all imported items for hotels is difficult and time consuming both for the hotel developers and the customs officers.

It has also been recommended that a list of mechanical items - useful primarily in hotel operation - be given duty free entry, but that no attempt be made to exempt other items for which exclusive hotel use is difficult to assure (e.g. hotel vehicles). The principal items which should receive duty free

entry are - airconditioning equipment
 - lifts
 - commercial laundry equipment and
 - commercial kitchen equipment.

Wherever possible use of local building materials should be made if available near the construction site. In addition the building of single storey hotels can also save money.

ECONOMIC BENEFITS FROM HOTELS AND LODGES

Aside from the financial benefits accruing to individual hotel owners, the region will receive significant economic advantages from the development of more game lodges especially in the new parks of Kilimanjaro and Mkomazi. These economic advantages are summarised in the table below:

DISTRIBUTION OF TOURIST SHILLING SPENT ON ACCOMMODATION Table 59

	<u>Game Lodge</u>	<u>Beach Hotel</u>	<u>Town Hotel</u>
Tourist Traffic Shilling	100	100	100
Foreign Exchange Cost	35	36	32
Net Foreign Exchange Gain	65	64	68
DIRECT GOVT. REVENUE*	11 (8)	12 (9)	11 (7)
Direct Labour Receipts	15	19	21
Other Value Added	39	34	37

*Figures in parentheses indicate reduction in Govt. Revenue if 10-year tax holiday is granted to new tourist accommodations.

The "tourist shilling" is defined as the money paid by a foreign tourist in Tanzania for his accommodation and miscellaneous purchases in the hotels and lodges. Gratuities, bed tax and commissions payable to the travel trade are not considered part of the tourist shilling. (Little op. cit.)

1. Foreign Exchange Earnings

Approximately 35% of the tourist shilling spent for accommodation is used to pay for foreign goods (see table above).

Thus 65% of every shilling a tourist spends in accommodation constitutes a net gain in Tanzania's foreign exchange position.

Two-thirds of the total foreign exchange loss or leakage from the tourist dollar goes to pay for 4 items - Interest expense, management fees, food imports and other hotel supplies.

2. Direct Government Revenue

Approximately 11% of the tourist shilling goes directly to government revenue. About half of this government revenue represents customs and other import duties on foreign merchandise. The other half represents taxes on hotel income (e.g. bed and income tax) plus taxes on the income of expatriate hotel staff. Payments to the National Park Trust have not been included under government income. Direct government income will be reduced by about 30% during the tax holiday allowed for new hotel construction.

3. Direct Labour

About 15% of the tourist shilling goes to direct labour: 90% hotel employees; and 10% repairmen and entertainers. The number of employees and total payroll per type of accommodation is summarised below:-

Type	Rooms	Occupancy Rate	Employees	Payroll (shs.)
Game Lodge	75	65%	115	612000
Beach Hotel	100	55%	125	839000
City /Town Hotel	200	65%	250	2377000

Source: Little. op. cit.

4. Other Value Added

The other value added includes all other items paid for by tourist shilling: principally the domestic cost component of food, beverages, heat, light and power, office supplies, interest, depreciation and profit.

12.8. OTHER INFRASTRUCTURE FOR TOURISM

The previous two sections dealt with natural and other resources as a basis for tourism and the accommodation and other facilities which form its essential concomitant. Neither of these resources and facilities as separate factors, nor the two together, constitute a sufficient basis for the development of tourism without a third major element - the adequate infrastructure. The strengthening of a country's or region's economic infrastructure with regard to transport and communications, the supply of water and electricity and the provision of health and other public services, such as sewage disposal, is frequently a priority task in development planning. The infrastructure provides the services which are indispensable to the progress of tourism no less than to that of industry, agriculture and other sectors. The arrival of foreign visitors presupposes the existence of airports, seaports and other terminal facilities, and of roads. Their mobility inside the country depends on roads or domestic airservices. Wherever they stay and wherever they go, they use public services and bring about an increase in the total consumption of such things as water and electricity, particularly at peak hours and seasons. All these are the costs tourism entails and must be kept as low as possible.

In the present section, the main kinds of infrastructure which are relevant to tourism and necessitated by its growth in the region are discussed, and questions relating to the nature, cost and timing of the requisite investments are considered. Here it is worth noting that all the infrastructure and their adequacy in the region has been covered in earlier chapters. Here the aim is to discuss their relevance to tourism and whether they are coping with the tourist traffic. The subject is a complex one, since much of the infrastructure used by tourists

in the region serves more than one purpose. Costs and benefits are therefore widely distributed and cannot easily be attributed to one particular sector or activity. This is a general problem, because, even where the infrastructure of a region is predominantly designed for tourism e.g. the new Kilimanjaro Airport, it is also serving non-tourist establishments, which are attracted to the region through the multiplier effects of the expenditure of visitors. Moreover even if the social costs of providing the service are left out of account, it is not easy to assess the return on the original investment when (as it applies to roads generally) there is no pricing system in the form of user charges.

As consumers of goods and services, visitors, as well as domestic tourists, make demands on every kind of infrastructure. Of primary importance, perhaps, is the transport infrastructure, especially the transport services, such as airports, which in many countries largely have as their raison d'être the movement of foreign visitors. There are also the basic services such as the provision of water, energy and sewage disposal, which a visitor expects to find laid on for them. To a lesser extent, visitors will also expect to enjoy a reasonable postal and telecommunications service.

The concept excludes investments in transport equipment, such as aircraft (both privately owned, and the government owned EAA), tourist buses owned by TTC, which are associated with the corresponding infrastructure but do not themselves constitute infrastructure investment properly so called. However, in the case of certain capital expenditure specifically relating to tourism the borderline between infrastructure and what might be called amenity investment is less clear cut.

A. General and Specific Infrastructure

Even though in the last resort it must be a matter of degree, it is convenient to make a broad distinction between the general infrastructure and that which is specific to tourism in the region. The criterion is essentially whether the investment in question has been induced, or necessitated by tourism - in other words, whether it would not otherwise have taken place. The essential feature of the general infrastructure is that the investment serves the tourist sector only incidentally along with all other consumers (industrial, commercial, agriculture, household etc.). The contribution that it can make to the provision of services for tourists may be taken into account in the overall appraisal of a project, but the project itself is not intrinsically designed for tourism. The general infrastructure consists primarily of the national network or distribution systems for transport, electricity, water, telex etc., without which the corresponding basic public services would not be available to any class of consumer.

On the whole, in the areas of Moshi and Arusha towns where tourism consists largely of sight-seeing - with the tourists staying in the towns and visiting the rural areas or areas of interest - there are very few demands for a specifically tourist infrastructure. Visitors use the services available to the resident population, including the existing transport services, connecting the towns and the places of special interest - e.g. Momella Lakes, Mt. Meru, Mt. Kilimanjaro etc.

A specific infrastructure for tourism can be viewed as being of two kinds, sometimes overlapping - one related to the location of the investment and the other to tourism as a particular form of economic activity. An infrastructure of the latter

type is to tourism what irrigation and rural electrification for example, are to agriculture; but for both decisive criterion is that the investment is dictated by the demands of the tourist sector and that certain foreign exchange and other benefits to the economy are foregone if the investment is not made. Examples of infrastructure related to tourism as a particular form of activity are few in the region - These include the new KIA and the various landing airstrips in the national parks - serving the park lodges.

The investment related to location arises from the fact that tourist activity is concentrated in certain localities and regions - in this case the 6 national parks and the 2 mountain areas of Kilimanjaro and Meru, where it constitutes one of the major source of income and employment. As the volume of tourism grows in these areas, an expansion of infrastructure services becomes necessary. The investment may be of a strictly local character, consisting for example of the provision of access roads e.g. to the various parks or places of interest in the region, street lighting and paving and their improvement in extension to new districts, additions and improvements to municipal roads, connections to the main electricity and water distribution system, or it may involve additions to the existing national network of the general infrastructure, such as new airport or trunk roads leading to a tourist region, new pumping and transformer stations or new piping and cables for distributing water and electricity. Such additions to the general infrastructure can nevertheless be regarded as specifically designed for tourism if the growth of tourism is the primary reason for augmenting the facilities.

The most obvious case of an infrastructure designed specifically for tourism is that connected with the comprehensive tourist development of this region, built up around the national parks which had hitherto remained virtually unexploited in the past. In this case, the Tanzania government has generally undertaken all the necessary capital works in connection with the establishment of the several resorts (hotels, lodges, access roads etc.), including the mains system for water and electricity and the provision of both internal and access roads and other means of communications as a prelude to investment in hotels and other amenities by private or public developers.

B) Transport Infrastructure

Investment in transport infrastructure is very important in the development of tourism. Without transport facilities, there can obviously be no tourism at all, and the transport may easily absorb a large share of the total investment in infrastructure devoted to tourism. In this section, the relevance to tourism of different kinds of transport infrastructure in the region is discussed, pointing out only the significant features.

Air Transport

International travel in East Africa has developed as a result of progress in air transportation, by far the most important mode for tourists arriving from overseas and also of considerable importance for tourism from neighbouring countries. Transportation by sea is much less important. The use of road, be it by bus, car etc, is of prime importance for local transportation of overseas tourists and for regional touring between the East African countries.

At the moment the main airport into the region, as seen before, is the Kilimanjaro International Airport built at a

cost of 90 mil. shs. and was opened in 1971.

When the airport initially went into operation in Nov. 1971 a total of 1,532 passenger arrivals and 1,505 departures was recorded. The first month of operation also saw a total of 1,268 passengers in transit with 191 aircraft movements. Since then more business has been recorded. The Mt. Meru Hotel being built at Arusha is expected to serve the airport and hence make it more convenient to tourists coming directly to this region.

In addition to this major airport there are also landing strips serving almost every hotel/lodge in the national parks (for more details see the section on AIR TRANSPORTATION in the region).

Road Transport

The importance of roads for international tourism is naturally greatest especially for this region which receives the bulk of its tourists from neighbouring Kenya, or from Dar. As seen earlier, arrival by road predominates and accounts for a large share of the total arrivals. Fortunately, now, there are tarmac roads from Dar to Arusha/Moshi; and from Arusha to Nairobi and Moshi to the Kenya Border and thence to Mombasa (a small part of which is not tarmac in the Kenya side). The roads to the west are the only ones remaining untarred.

When all these roads are tarred, at government expense, then they will open the door wide for inexpensive road travel encouraging family touring by car. Such touring requires less concentrated accommodation facilities than intercontinental holiday travel by scheduled services and especially charter plane.

Due to the prevalence hitherto of purely national approaches, road construction has often been planned piecemeal and roads which would attract considerable through traffic if extended to neighbouring countries have been considered as of only local importance: in the absence of a link with road network of the neighbouring countries, some of these roads have failed to build up sufficient traffic, for example, Kenya and Tanzania could co-operate in creating outstanding facilities for visiting game parks all year round by co-operating in paving the roads Nairobi-Masai-Mara Reserve-Serengeti N.P.-Ngorongoro Crater-Lake Manyara N.P.-Arusha-Masai-Amboseli Reserve- and back to Nairobi. This would avoid the present retracing of steps to Arusha by tourists visiting the Serengeti. At the moment it is very easy to travel to Serengeti via Arusha, but from Serengeti if one wants to go back to Arusha he may have to retrace his steps to Arusha or fly out.

Although most of the roads (trunk) and other roads were not built exclusively for the tourist traffic, there are circumstances in which the decision to construct or improve certain roads in the region was governed almost exclusively by considerations of tourism, just as there are roads that serve essentially agricultural areas. We find that the roads to the national parks or to other tourist attractions e.g. Momella or the road descending to the Ngorongoro Crater and roads from the regional trunk main to the park lodges, were built mostly to cater for tourists. Another example is the road from Moshi to Marangu built to facilitate mt. climbers - although this road benefits the local population a lot since it has opened easy accessibility. Another example is the new proposed road to serve the newly created national park on the slopes of Mt.

Kilimanjaro. Were it not for tourism, most probably this road project would not have been contemplated. Unfortunately data of the cost to build these roads was not available.

On the other hand, some roads serve a dual purpose, e.g. the road from Arusha to Musoma and Mwanza through the Serengeti and Ngorongoro serves both tourists going to the national parks and through traffic to the lake.

Hence, since this region is highly dependent on tourism most visitors come by car or mini-buses, the major highways within the region and those connecting the region to Kenya and the coastal circuit are essential to its further development, thus any road development undertaken is a great benefit to all sectors of the economy in the region.

Ground Transportation of Tourists

There are 380 vehicles which are engaged on transportation of tourists in Arusha region and between Nairobi/Arusha/National Parks. TTC through its subsidiary company - Tanzania Tours Ltd. is scheduled to station few vehicles at Arusha for transfer of tourists between the KIA and Arusha/Moshi. This is in addition to UTC vehicles which are already engaged on this business. The Tourist Licensing Authority has also granted licences to ten additional Tour Operators, to purchase vehicles for tourist transportation in the Northern Circuit. Hence the total number of vehicles engaged on this trade has risen from 450 to 630 between 1970 and 1972.

Other Services

The services of electricity and water provision have been discussed before. In so far as investment in those services would not take place or would be smaller were it not for tourism, or the resources might be used far more productively for other

purposes, it is necessary to consider the return on the investment, i.e. the benefits accruing to the economy from the resultant increase in tourism, compared with the cost of the investment. Such a comparison in this region is difficult to make and scarcely meaningful in the case of the general infrastructure. For the infrastructure which is specific to tourism, on the other hand, there does exist a possibility, though there are theoretical and practical problems to be resolved of relating the capital and current costs to foreign exchange and other benefits that are expected from the investment. As for this region due to the great lack of data and time it is not possible to carry out such a study, but this is a subject which should receive attention when and if data becomes available in the future.

2.9 THE IMPACT OF TOURISM ON THE REGION

The consequences of tourism in the region are far reaching especially now since tourism has been rising every year. Tourism does conflict with nearly all interests in many different ways - ecological and scenic; economic and sociological and even political. There are thus advantages and disadvantages and some of these have already appeared in various parts of the text. Its greatest impact of course has been economic, for tourism is an extremely efficient earner of foreign exchange. So much so that one £'s worth of resources devoted to tourism earns more foreign exchange than would be saved by two £' worth of resources devoted to a wide range of import substitute industry⁴¹.

In this section an analysis of the importance of tourism on the region is made and outlines also some of the solutions which have been tried to lessen its bad impacts. To start with, the ecological and scenic impact is made, followed by its economic then the sociological and political impacts are examined.

12.9.1. a) Ecological and Environmental Impacts

Damaging Effects

The nature of ecological disturbance of course depends on the type of recreation activity practiced in certain types of environments. Since similar activities can be practiced on day trips and on holidays, the ecological effects are likely to be similar although that much more severe in those areas popular for both tourism and day recreation (e.g. the national parks near the towns of Moshi and Arusha which are easy to get to in a matter of a few hours drive). Many of the bad effects on the ecology of the area have been touched upon in the previous section dealing with the need for conservation - here is an opportunity to discuss them further.

Most of the ecological damage has taken place in the national parks by damage to habitats by litter and fire or by ruthless hunters or sports enthusiasts who hunt without permit. Without proper controlled hunting this can upset the ecological balance and set in motion some more problems than at first thought, e.g. the trade in furs and skins has greatly imperilled animals such as the leopard and reptiles such as the crocodiles. The balance between prey and predator has been disturbed. For example in some parts of the region and other areas in East Africa, the disappearance of the leopard from many parts has meant a great increase in the number of bush pigs and baboons on which the leopard used to prey. This has created a major problem of crop depredation by bush pigs and baboons. The destruction of pumas and wolves in parts of North America caused a similar rapid increase in the deer population; which in turn led to environmental deterioration and a consequent swift decline in the numbers of deer. Extinctions reduce the diversity of the ecosystems, which are thus rendered susceptible to unwanted

change. The stabilising effect of interrelated plants and animals is very important and man has drastically and swiftly cut off evolutionary and ecological links that have developed over millions of years.

Some of the tourist-drivers or drivers of mini-buses carrying tourists are very careless and cause irreparable damage to the habitat. For example, in the Serengeti speed limits are seldom observed. Mini-bus drivers sometimes drive at speed and in a cloud of dust and in some instances they drive at some of the animals causing them to scatter. Also at times some tourists amuse themselves by shooting at animals indiscriminately⁴².

A lot of this sort of behaviour is due to ignorance and thoughtlessness. In the case of the drivers it could be corrected by arranging some sort of training for the drivers of tourist vehicles and increased vigilance and use of their powers by the parks authorities in expelling offenders. The visitor too must be made aware of the good manners he owes to the wildlife and his fellow visitors, by means of literature put out by both the parks authorities and the travel agencies. An orphanage for young and injured animals as at Nairobi N. Park should be established in the region.

Some of the other destruction is caused by fire started by careless campers or day trippers or poachers. This can destroy whole forests and grazing land, hence depriving some of the animals shelter as well as food.

There is thus a great and abiding need for conservation. It is obvious that economically valuable animals should be conserved, although man has been responsible for the destruction of so many animals already. The aesthetic or moral argument hardly needs putting, but most people derive great pleasure

from watching far-ranging animals at large in the wild rather than confined to a zoo.

Beneficial Effects

There are also beneficial ecological consequences of tourism. On a very local scale, the population of many birds and small mammals have increased in recreation areas where they are fed by visitors or feed from litter, although frequently these are common species, and rarer fauna may be driven out. This happens in the camping areas.

Moreover, the growth of tourism and recreation as well as the need to conserve characteristic flora and fauna have been the main reason for the creation of the national parks and reserves in the regions and in Tanzania. These areas, as has been seen before, provides opportunities not only for the conservation of endangered species, but also for public education. This is perhaps the most important ecological benefit of increasing leisure activity in the countryside, which may be expected to generate awareness of the dangers, and correspondingly greater interest in conservation. Current research both by government agencies and private bodies will benefit both the tourists and the wildlife in these parks.

12.9.2b Environmental and Scenic Impacts

In visual as well as ecological terms, the consequences of leisure and tourism activity can be damaging to the landscape. There are many small-scale but nonetheless effects, such as litter and the erosion of hill and mountain sides which result from trampling; unsightly lodges; roads and other developments in tourist areas like the national parks.

With the growth in tourism in the region, congestion in some of the popular parks has resulted, leading to environmental

deterioration. This has happened elsewhere - e.g. a rash of shoddily built apartments and hotels has appeared along parts of the Mediterranean Coast, such as Costa Blanca in Spain, with no regard for local architecture, traditions or landscape.

In the popular game reserves in the region - e.g. Arusha, Ngorongoro and Manyara, wild animals may suffer from the psychological effects of the many people and cars and too much noise if tourists are just allowed freely at all times of the day. Nairobi N.P. in Kenya (44 sq. mls.) received nearly 200,000 visitors and more than 43,000 cars in 1971/72, the largest number of visitors to any Kenyan park. European and tour operators experienced in East Africa have pointed out the danger of overcrowding the parks, with Ngorongoro being the most vulnerable. Kruger National Park in S. Africa has frequently been cited as one that had allowed so much overcrowding that international tourists found the game viewing experience not what they had expected. It has been 'too commercialised'. Thus, the needs and security of the natural inhabitants must come first with humans as privileged spectators.

The danger of this region's and other national parks losing their appeal through overcrowding will become greater as imitation wildlife preserves, stocked with African species, are established in North America and Europe. For example, in the U.S. plans are being made for 25 "exotic game reserves" outside major cities with attendances expected to be in excess of a million visitors per year⁴³. So far there are 4 parks in the U.S. with attendance in excess of 5.2 mil. persons per year. Likewise Europe can be expected to increase its numbers of exotic game parks.

European and American operators point out, however, that the case with which African animals can be seen in zoos and exotic game reserves will not necessarily diminish their clients' interests in a genuine African safari. In fact many tour operators feel the existence of simulated African environments plus the increased coverage of Africa - on TV will broaden the potential number of visitors - particularly for the better known parks of Tanzania like Serengeti and Manyara.

The rise in the number of tourists has resulted in unsightly complex of tracks out of all proportions to the number needed for effective game viewing in the national parks here. Erosion by trampling, in some cases producing bare ground, is characteristic of a number of other heavily used but often unmanaged recreation areas such as cliff tops, vantage animal-watching points, mountain paths and woodlands.

There is no definite answer to overcrowding in the region's parks. Ecologists and officials of the Tanzania National Park Trust maintain that the animals will adapt to the tourists more readily than the tourists would adapt to too many other tourists. Thus the point at which a park becomes overcrowded and the natural viewing experience jeopardised is determined more by the expectations of the tourists than by ecological criteria.

Since tourists are generally not allowed out of their vehicles in national parks, the criterion for measuring capacity is the number of vehicles permitted in the park at any one time. Limits cannot be set solely on the basis of area per vehicle. Consideration has to be given to the concentration and dispersal of game, the variety of game, the availability and type of cover, topography and sound conservation practices. In the following section an analysis of the extent to which the

region's parks can ultimately be developed without destroying the viewing experience is made.

The Little report (pg. III-7) gave recommendations on the maximum number of vehicles permitted in each park in the region at any one time and these are shown on the table below.

Maximum Viewing Capacity Per Park

Table 60.

Number of Vehicles in the park at any one time

Park	No. of vehicles permitted	Area (sq. mls.)	Viewing Area per Vehicle (sq. mls.)
Serengeti	175	5700	32.6
Ngorongoro Cr.	50	110	2.2
Lake Manyara*	75	64	0.9
Tarangire	100	1010	10.1
Arusha	50	45	0.9
Kilimanjaro	N.A.	N.A.	N.A.
TOTAL	450	6929	9.3

*Land area only - including proposed park extension.

The Little report recommended 50 vehicles as the maximum in the crater at any one time. Ngorongoro is important to these estimates since congestion in the 110 sq. ml. area of the crater was the easiest for tour operators to visualise. The maximum recommended by Little of 50 vehicles in the crater at any one time is equivalent to approximately 250 people per day or 75,000 per year. By comparison Nairobi national park which is less than half the size of this park receives over 100,000 per year, and hence it is too crowded to preserve the natural viewing experience which the tourists come to see.

Overcrowding has been reported on Lake Manyara. Many tour operators feel that the park is already too crowded on peak days for good viewing. The number of vehicles recommended for the park is 75 assuming that the park is extended southward, thus doubling its existing land capacity to 64 sq. miles and relieving the traffic congestion by providing a second entrance/

exit to the park.

It is difficult to estimate maximum viewing capacity of the vastness of the Serengeti. Of particular concern to the operators in this park are the long periods of the time during which no animals are seen in the Serengeti, as compared to the more compact viewing in the other two parks, and the tendency of animals to concentrate in different sections of the park at different times of the year. On the basis of a greatly extended road network, the recommended maximum viewing capacity is 175 vehicles per day in the Serengeti.

Viewing capacity for Arusha National park has been limited to 50 vehicles per day. Arusha national park adds a different character to the main game viewing parks of the region. It is used more for day visits and pic-nicking by residents of the Arusha area than for the international tourists. Unlike other national parks visitors are allowed to leave their vehicles and walk through a network of trails. The highlights of the park is walking the rim of the Ngurdoto Crater and viewing large game on the crater floor. It is hoped that no structures should be built within the small crater, because this will spoil the crater.

Another impact of mass tourism on the environment can be the building of unsightly hotels and lodges. Fortunately, in the national parks of the region most of the lodges built there so far are architecturally harmonious with the environment and Lobo Wildlife Lodge stands out as the best designed lodge. Although most of the hotels and lodges are satisfactory, the structures and minor settlements around them are in most cases unsightly - e.g. at Seronera. In building these lodges and hotels more could be achieved by using local materials and also the use of more local designs like the rondavals of Bahari Beach Hotel designed

to give an African village atmosphere. In this hotel there are huts arranged in units of 4 built of coral and thatched roofs, each with private shower. Other forms of architecture could be tried - e.g. echelons. It has been found that complex building forms are very suitable to Tanzania; they are labour intensive and permit design solutions that may minimise the need for expensive and complex equipment.

Whatever their forms, to prevent the aspect of commercialising in the park, the tour operators agree that the lodges should not exceed 150 beds - the standard now used by the N.P. Trust. These have to blend to the landscapes of the parks. Tented camps are also ideal, as they help to preserve the "safari" aspect of a tour through the game parks. Large tented camps, however, give a military impression.

Maximum Accommodation Development

The recommended limits on the number of vehicles in a park also imply limits on the ultimate development of accommodations in or near the park. Tourists will not book a room in a lodge without the assurance that they will be permitted to tour the park. In the table below, is shown the maximum number of park beds and maximum number of bednights per year which can be expected if the recommended limits on vehicles are strictly enforced. The maximum number of beds required has been computed on the assumptions of 5 persons per vehicle and 20% single occupancy of double rooms. The maximum number of bednights per park is based on a bed occupancy rate of approximately 75% per year under the following assumptions:

- 30% bed occupancy during the rainy season lasting 60 days;
- 95% occupancy during the remaining 305 days.

Table 61

Maximum Development of Accommodation in the National Parks*

Park	Vehicles per day	Park beds	Park Bednights/Year at 75% occupancy ('000)
Serengeti	175	1050	290
Ngorongoro	100**	600	165
L. Manyara	75	450	120
Tarangire	100	600	160
Arusha	50	300	80
TOTAL	500	3000	815

*Excluding lodges serving Mt. Kilimanjaro N.P. (planned for 300 beds by 1978/79) and the possibility of developing Mkomazi Game Reserve as a National Park.

**Assumes two viewing shifts in the crater.

Presently, only 20% of the total beds exist (see table below). The table shows how the extra beds required could be divided into different categories of accommodations. Game lodges designated in the table and located inside the park boundaries cannot exceed 150 beds, according to park regulations. Hotels are located on the fringes of the park and are expected to have 200 beds so as to take advantage of economies of scale in running larger properties. A limit of seventy beds should be imposed on tented camps to maintain their rustic appeal.

Table 62. Existing and Projected Numbers of Park Beds at Maximum Capacity.*

Park	Existing	Required	Maximum Permitted
L. Manyara	250	200	450
Ngorongoro C.	255	350	605
Serengeti	270	780	1050
Tarangire	68	530	600
Arusha	150	150	300
TOTAL	993	2010	3005

*Excluding Kilimanjaro N.P. which 300 beds are planned for 1978/79.
Source: Little - Table III-3.

Looking into the future, it is seen that by the end of Tanzania's Third Plan in 1978/79, it is expected that the demand for accommodations in 3 out of 5 of the region's national parks will exceed the limits necessary to guard against over-

crowding and destruction of game viewing experiences.

The forecast of the bednight demand in the 5 Northern Parks is based on the 1969 figures and is shown on the Table below. Lake Manyara is expected to reach its maximum viewing capacity first, and will have to limit visitors on a yearly basis for four of the next 9 years. It is expected that Ngorongoro Crater will reach its yearly limit in 1977/78 and Arusha National Park to reach its limit in 1978/79. Tarangire Park, however, will be significantly below the limits set for optimum viewing by 1978/79. The scope for extending or setting up new natural parks in this region is limited by the expected shortage of land following population growth. People in the congested areas at the moment will be forced to move to marginal lands which could have been expanded for wildlife use.

Table: Summary Forecast of Bednight Demand in the National Parks

<u>63</u> Year	Serengeti	Ngorongoro	L. Manyara	Arusha	Taran- gire	Total
<u>2nd Plan</u>						
1970/71	40	47	46	-	7	139
71/72	41	50	50	17	9	167
72/73	57	81	70	39	13	261
73/74	76	91	95	41	25	303
<u>3rd Year Plan</u>						
1974/75	92	114	109	41	38	380
75/76	118	131	120	41	38	437
76/77	150	150	120	41	39	501
77/78	192	165	220	41	57	574
78/79	220	165	120	80	75	660
<u>% Max. Capacity</u>						
1978/79	76%	100%	100%	100%	47%	

OTHER ENVIRONMENTAL PROBLEMS CREATED BY TOURISM AND HOW TO SOLVE THEM.

1. Buses

Running of buses in National Parks tends to give the parks an unwanted commercial atmosphere. Even the smaller 15-seat

buses used in areas such as Kruger National Park are considered to detract significantly from the viewing experience expected by tourists in safari to Africa. Thus, despite the fact that the smaller capacity vehicles are more expensive to operate per passenger (and thus serve to increase the price of a tour in a very cost-conscious industry), it has been agreed by several tour operators that no vehicles with a capacity of more than 8 persons should be permitted to the national parks.

2. Paved Roads

Sometimes there are complaints from some tourists that the roads in the national parks should be paved to provide a more comfortable ride. However, paved roads in national parks show an unwanted sign of commercialisation and overdevelopment in the national parks. Though this is the case, it is felt that some roads connecting national parks should be treated to reduce the dust problem. The stretch between Ngorongoro Crater and Serengeti N.P. is an unnecessarily dusty and uncomfortable stretch of road. Also there is need to control the dust on access roads to the game lodges and tented camps.

Thus, it is recommended that difficult and dusty stretches of road should be considered for paving only if other means of dust abatement do not prove feasible. Possibilities of controlling dust short of paving a road include better quality construction and use of water, hygroscopic chemicals, and oils. Dust abatement procedures need not be expensive. Little⁴⁴ - estimated that calcium chloride in conjunction with a road-watering programme would cost less than 200 shs. per mile per year.

3. Urbanisation

The development of support facilities in the national parks have given them an urbanisation environment. Developments for

example at Seronera and Ngorongoro if left unabated will grow into small villages in a national park setting. At the moment there are at least 1,200 persons with permanent homes there.

Therefore airport, repair, research and staff facilities should be moved outside the park boundaries wherever possible.

12.9.3. SOCIOLOGICAL, CULTURAL AND POLITICAL IMPACTS

The development of tourism has implications which cannot be analysed in terms of shillings and cents. The current and expected 'invasion' of tourists into this region has both positive and negative aspects. Coming from different cultural backgrounds than most Tanzanian's tourists wish to do things and to behave in ways of which many Tanzanians may disapprove. Complaints are voiced that tourism is against our policy of Ujamaa. That tourists receive services, some of them government provided, to which a large majority of Tanzanians cannot aspire, may also become a source of resentment. Undoubtedly other complaints will be heard, and in increasing volume, as the numbers of tourists increase.

Possible resentment may be felt by poor local people who see their home areas being invaded by much wealthier and often thoughtless people. On some Caribbean Islands dislike of Americans has caused a decline in race relations. The Tanzanian government is very conscious of this danger and does not want unbridled tourist expansion to be at the expense of local social and cultural considerations, or to the detriment of local natural resources, particularly the wildlife and scenery.

On the other hand, welcoming foreigners gives unparalleled opportunities for individual Tanzanians to increase the under-

standing of and interest in their country by others. That foreigners should wish to come to this country for their holidays is perhaps a greater source of national pride than that they should also wish to drink Tanzanian coffee with their meals. While the personal contacts which give rise to these resentments and opportunities are proportionately much fewer here than in countries where major tourist attractions are located in the main population centres, these aspects of tourism should not be overlooked in assessing the industry and should be taken into account in planning tourism projects.

Again, on the local front, the overall social benefits of leisure activity brings enrichment, fulfilment and often excitement to life. Leisure activity in the countryside or parks offers a convenient means whereby urban dwellers (both from abroad and local) can attempt to understand rural life and be made aware of the claims and rights of all the different interests. Unequal opportunities are provided for imaginative and illustrations of what practical land management and conservation entail.

1. CULTURAL IMPACTS

Tourism helps to develop indigenous folklore and facilitates interchange of cultures and understanding of foreign ways and habits. Culturewise, though the region is underdeveloped when compared with developed countries, we still have a lot to give culture-wise to those developed countries⁴⁵. On the other hand, tourism can be detrimental to the local culture. People are imitating foreign ways of living and are picking up all sorts of habits. Again, one has only to go to some of Tanzania's palatial game park lodges or tourist hotels both in the region and elsewhere (only the outside of which a Tanzanian farmer will

see) and watch the waiters and waitresses moving up and down the corridors like disciplined school children churning out 'sirs' and 'madams', to understand what an outrageous, alien structure Tanzania is harbouring in the midst of its policy of ujamaa.

Given the present trend, it is probable that, tourism will devalue and debase the African values in Tanzania and greatly commercialise its culture. It is rather difficult to provide evidence in this area, but not completely to, for example, the mass production and/or selling of Makonde carvings and dances at international fairs are proofs of culture being commercialised at a great rate; again the opening up of the north circuit to tourists has caused some changes in Masai culture, e.g. begging or waiting to be photographed within Ngorongoro Crater or in Arusha.

However, night life and soul dancing have not come as a result of tourism development. There would be more night life in Tanzania, even without tourism. Therefore, in all cases of "cultural imports" what is needed in Tanzania is a socialist discipline among the population. There is no short cut. The people are living in a world, not in a vacuum. In addition, tourism is reckoned as enhancing international peace and goodwill.

Thus well-planned tourism could act as a pole of growth but could not completely avoid the dangers and possibilities of commercialising Tanzania's culture which would make it incompatible with socialism.

Another argument against tourism is that Tanzanians may seek to emulate the consumption standards maintained by tourists visiting the country. The problem this raises were recently

mentioned in an article on Kenya by Colin Leys⁴⁶, who says that tourists:

"Will not be a representative group of people from a developed country representing its life style and activities. They will be from the most affluent sections of the populations of Europe and North America, living for a short holiday above even their own normally high standard. They will however, be highly "visible", especially to the better-off sections of the population who live in Nairobi or visit it often ... In some traditional tourist areas of Europe, the local residents have developed an understanding of all this and do not aspire to live like the tourists; they regard them with detachment, indifference, amusement or cynicism, as a lucrative and necessary evil. Probably, this attitude develops in every tourist playground in the long run, but in the short run the absence of such an attitude may make it harder for the government to tax its own more prosperous citizens to uplift the growing number of really poor people".

It is true that tourism has social and cultural importance on the people in the region, but no documented work has been done on this. General observations show that the Masai are being coaxed to change their ways of living and some people in the Moshi/Arusha area now have emulated some of the European way of living. Anyway, to understand this problem clearly we need more empirical work by sociologists on the social and cultural implications of tourism on the host community which is beyond the scope of the present study.

3. Effect of Tourism on Security of the Nation

Another argument often raised against tourism is that it can be used as a vehicle of upsetting the national security. An infant developing nation and especially one which has declared socialism in the teeth of imperialist power needs a lot of security and vigilance. It appears little realised in Tanzania that much harm can be done to the security of the nation in the name of tourism. The secret services of the developed nations realise the importance of using tourists (and in fact they are known to use them) for their subversive activities. Not so infrequently they have been successful in eliminating progressive governments in the Third World. A number of books

written by Americans prove this beyond reasonable doubt⁴⁷.

On this question of spies, critics should be aware that embassies based in Dar are not without intelligence officers who use locals, and Tanzanian's foreign experts without resorting to tourists. This should not detract the nation from engaging in tourism. It is best to leave the game of espionage to the professionals.

To sum up, it is clearly seen that tourism has far reaching effects (good and bad) on the culture and sociological life of the people in which this industry is practiced. It also emerges that the good effects outweigh the bad so long as it is managed with care. In the context of this region and Tanzania in general, tourism is now being gradually conducted/practiced under the Socialism Code declared in Arusha (Arusha Declaration) with more and more activities being run by the people through the government organisations and this also increases the local multiplier.

12.9.4. THE ECONOMIC IMPACT OF TOURISM

The development of tourism, or any other industry, has several economic consequences. Tourists demand different collections of goods and services than would be demanded in their absence. Supplying these demands requires skills, capital and foreign exchange which would otherwise be necessary or could be used in alternative activities. As well, the distribution of income among income groups, among owners of different factors of production (labour of different skills, capital and land), and among different areas of the region will be altered by developing this industry rather than others. To the extent that tourism enables Tanzanians to earn more income than they could without it, and to the extent that the patterns of employment and income distribution resulting from its develop-

ment are judged preferable to the patterns which would otherwise exist, tourism is economically beneficial⁽¹⁾⁴⁸.

This section deals mainly with the extent to which tourism increases incomes in the region and provides employment opportunities for some people in the region.

It has emerged earlier that tourism could become Tanzania's leading foreign exchange earner in the very near future, over 50% of this foreign exchange coming from tourists visiting this region and may be visiting other parts of the country. Apart from this foreign exchange earned; wages and salaries resulting from tourist expenditures in the region provides jobs for hundreds of people, helping to ease the unemployment problem in the region. These jobs result from the making of curios, working in tourist hotels or in institutions dealing with the furthering of tourism; agricultural jobs dealing with the growing of food sold in tourist hotels etc. Hence, this is an industry which should benefit this region greatly if properly developed.

Unfortunately, the calculation of the above economic benefits resulting from tourism is rather difficult in the absence of any survey data⁽²⁾ which could not be carried out

(1) Proof of this assertion is impossible. However, it is suggestive that positive wages are paid for farm labour in even the poorest agricultural parts of Tanzania. The assumption of positive marginal productivity of factors, especially labour, does not imply that in the absence of tourism all workers who lost jobs would take other jobs. They could easily remain unemployed - or, stated a little differently, employed in a search for other work in the modern sector - rather than take the somewhat lower earnings available on the land.

(2) Surveys which could be carried out if the constraint of time and money were not present include:

- i) Costs and benefits of building and running all hotels & lodges in the region.
- ii) Income from the sale of curios and other items sold to tourists e.g. fruits, vegetables, food etc.
- iii) The multiplier of tourist expenditure in the region.
- iv) Number of people employed directly and indirectly in the tourist industry both in the National Parks and in the towns; and so forth.

for this study due to the shortage of cash and time. With this limitation, only a general picture of the economic impact will be given to show how this region and Tanzania does benefit from tourism in terms of money which flows into the region. Little, A.D., in his study of Tourism in Tanzania tried to calculate this for the whole country (Little, pg. I-26-33) and he too, faced some problems in getting some of the data required to find where money earned from tourism came from and where it was spent. Mitchell⁴⁹ has also done a study on the costs and benefits of tourism in Kenya and in his study there were also a number of gaps in the information required, especially as far as indirect costs and benefits of tourism are concerned. However, in this study a lot of information came out about costs and benefits and it reached a conclusion that the benefits of tourism to Kenya far outweigh its costs.

ECONOMIC IMPACT: ESTIMATED TOURIST EXPENDITURE

The number of tourists coming into the region has been growing steadily and therefore the income earned from tourists has also been rising following the great investment on tourist infrastructure in this region since 1969, especially in providing hotels. Tourists visiting the Northern region in 1968 spent an estimated 29 mil. shs. in the region, and by 1973 tourists into the region spent approximately 56 mil. shs., showing a growth of over 50% during this period. An 'average' tourist spends approximately 1,000 shs. during his visit, or slightly less than 200 shs. per day (including tourists from Kenya and Uganda).

Table 64

TANZANIA FOREIGN EXCHANGE EARNINGS FROM TOURISM BETWEEN 1970-73

<u>Year</u>	<u>Gross Earnings (T. Shs.) Millions</u>
1970	96.7
1971	98.0
1972	118.8
1973	130.0

Source: Bank of Tanzania and Tanzania Tourist Corporation.

Tourist expenditures, however, are only an educated guess. At the time of this study, the only reliable data available on the tourist expenditures in Tanzania and in the region are that obtained by Little (referred to above), and some of these figures have been used in calculating the tourist income in the region.

In order to formulate and evaluate a long range plan for tourism development, Little estimated the expenditure patterns of four types of tourists in Tanzania, as shown in the Table below:

Table 65 ESTIMATED TOURIST EXPENDITURE PER NIGHT (shs.)

	<u>At Accommodation</u>	<u>Outside Accommodation*</u>	<u>Total</u>
Game Park Tourist	150	90	240
Beach Tourist**	103	58	161
Businessman	203	49	252
Hunter	-	1300	1300

*Including drinks, curios, travel etc.

**Medium Class Hotel

Source: Little, pg. I-28.

These figures have been used in Table 66 to estimate the total expenditure of tourists to the region in 1973 (The only year with complete figures on tourist bednights spent in the region). The calculations are based primarily on reported bed-night figures in various areas of the region.

Northern Wildlife Areas: These bednights are spent in game lodges; the tourist expenditure pattern at these lodges are similar to the 240 shs. per night "Game Park Tourists".

Arusha/Moshi Area: These bednights are away from the main game parks and mostly in small hotels where tourist expenditures are estimated to be 50% of the money spent in game lodges.

Hunting Safaris: typically spend about 30,000/- p.a. in the region.
- No recent data are available on the number of tourists visiting friends and relatives. A 1968 survey showed that these tourists

each spend 80/- during their stay. In this study, their expenditure has been increased to 200/-⁽¹⁾ and have assumed that approximately 10% of the tourists to the region stayed with friends and relatives. The estimate of 56 mil. shs. is an indication of gross tourist expenditure. To analyse the economic impact of tourism in the region, this gross expenditure has been broken down into its effect on:-

- net foreign exchange - retained in Tanzania after paying for all the goods and services required to support the tourists;
- government revenue - resulting directly from tourist expenditures;
- employment: resulting directly from tourist expenditures and
- national income or increased economic activity.

Table 66 Estimated Tourist Expenditure 1969 and 1973

HOTEL TOURISTS

	Bednights ('000)		Expenditure per night shs		*Total Expenditure Mil. shs.	
	<u>1969</u>	<u>1973</u>	<u>1969</u>	<u>1973</u>	<u>1969</u>	<u>1973</u>
A Foreign tourists						
Bednights						
1 N Wildlife A.	82	159	240		19.7	38.1
2 Arusha/Moshi A	<u>37</u>	<u>48</u>	<u>120</u>		<u>4.4</u>	<u>5.7</u>
3 Total Foreign	<u>119</u>	<u>207</u>	<u>180</u>		<u>24.1</u>	<u>43.8</u>
B Kenya, Uganda, Zambia						
1 N Wildlife A	6	7	180		1.1	1.2
2 Arusha/Moshi A	<u>8</u>	<u>58.9</u>	<u>120</u>		<u>1.0</u>	<u>7.0</u>
3 Total KUZ	<u>14</u>	<u>65.9</u>	<u>150</u>		<u>2.1</u>	<u>8.2</u>
C Total Hotel Tourists	<u>133</u>	<u>272</u>	<u>165</u>		<u>26.2</u>	<u>52.0</u>

NON-HOTEL TOURISTS

A. Hunting Safaris NA	60	30000	N.A.	3.6
B. Tourists visiting friends, relatives	3000	100	N.A.	<u>0.6</u>
C. Total Non-Hotel tourists				<u>4.2</u>
TOTAL TOURIST EXPENDITURE - 1973				<u>56.2</u>

*1969 expenditures in 1973 prices. N.A. = Not Available

(1) The basis for increase is due to price rises for everything since 1968.

Economic Benefits

To calculate the economic benefits from tourism it is important to trace what happens to the money paid by different types of tourists when it is respent by the hotel, shopkeeper, ground tour operator, or other recipient^(*). The analysis made by Little shows that, although the daily amount of money spent by different types of tourists varies greatly, the percentage which goes to the government and wages on the percentage leaving the country in foreign exchange ((Leakage) is relatively constant, except for hunters. Tourism benefits expressed as a percentage of totalexpenditures are summarised in Table 67 with the first column reflecting the average pattern for the game park, beach and business tourist. Total benefits from tourism in 1973 are shown in Table 68.

Table 67 Basis for Calculation of Tourism Benefits

	<u>Average tourist</u>	<u>Hunters</u>
Total expenditure in Tanzania	100%	100%
Foreign exchange leakage	<u>26</u>	<u>20</u>
Foreign Exchange Gain	<u>74%</u>	<u>80%</u>
Direct Government Revenue	12	37
Direct Labour	25	4
Other Income	<u>37</u>	<u>39</u>
Sub-Total	<u>74%</u>	<u>80%</u>

Source: Little, op. cit. pg. 26.

In Table 68 the net economic benefits in the N. region have been calculated for 1973. The value of tourism in that year is that Tanzania's economy and foreign exchange revenues were increased by 41.6 mil. shs; her government revenues were increased by 6.7 mil. shs; and 14 mil. shs. paid to employ local labour. In addition, the wages of National Park staff and fees collected by the Parks are included under the category 'Other value added' - which came to 20.8 mil. shs. in this year.

(*)The analysis of tourist expenditure was limited to tracing the first round of expenditure after leaving the tourists' hands. Only those increases in foreign purchases, government revenues and new jobs which could be directly attributable to an increase in tourist expenditures have been shown.

Table 68 ECONOMIC BENEFITS FROM TOURIST EXPENDITURES 1973
- NORTHERN REGION

	(Millions of shs)
TOTAL EXPENDITURES	56.2
Less: Foreign Exchange Leakage	<u>14.6</u>
Net Foreign Exchange Gain	<u>41.6</u>
Direct Government Revenue	6.7
Direct Labour	14.1
Other Value Added	<u>20.8</u>
Increase in National Income	<u>41.6</u>

The major items considered in computing the net benefits from the tourist shilling were:

1. Foreign Exchange Costs or "leakage", which consisted primarily of:

- imported foods used in hotels
- repatriated profits of hotels, safari companies etc.
- the portion of expatriate salaries repatriated
- imported carvings, hides and other souvenirs
- cost of imported hotel equipment.

2. Direct Government Revenues, which consisted of:

- customs and import duties on imported items used in the tourist business
- hotel bed tax
- taxes on vehicles used primarily for tourism
- income taxes on expatriates in the tourism industry (but not income tax on Tanzanian Hotel employees).

3. Direct Labour, which consisted of:

- the wages of the hotel and lodge staff
- wages of employees of tour companies
- the labour content in locally-manufactured tourist souvenirs.

The Regional Foreign Exchange gain from Tourism of 56.2 mil shs in 1973 was 43% of the total national Tourist Foreign Exchange Gain, this underlying the great role tourism plays in the region.

The yearly foreign exchange leakage of about 41 mil. shs. in the region can be reduced by 25% by using local capital to finance hotel construction and through training Tanzanian hotel managers. Production of local beverages and foods such as dairy products will help to reduce the foreign exchange leakage somewhat but realistically it cannot be expected to have any where near the effect of substituting local resources for foreign capital and management.

12.9.5. The Cost of Tourism

Government Expenditure Occasioned by Tourism

For many services provided by government to tourists, it is impossible to provide a theoretically valid estimate of the cost of serving tourists alone. This problem is of greater practical importance when the service provided involves large overheads or common costs which do not vary with the amount of the service provided but which are nevertheless necessary if any of the service is to be provided. Examples include the capital and administrative overheads of airports, administration of justice, and roads. The problem is most acute with respect to making an allocation of the cost of the capital invested in such activities to different users. While the criterion for making the investment in the activity is clear - invest if the expected returns from all users is greater than the running and investment cost - it does not make sense to say that 10% of the investment was due to 10% of the users. Similarly, some activities have joint outputs. Thus, the Game Department is charged with regulating hunting by visitors and residents, controlling poaching, and regulating the trade in game products as well as dealing with wildlife which is creating a nuisance. Many of these functions are carried out by the same personnel at the same time. Hence, any complete allocation of the costs of the

Game Department among its various functions must be arbitrary. Finally, even where there are separable costs associated with providing particular services, or with services to particular customers, the accounts often fail to record those costs separately.

These being the difficulties, plus the lack of data, makes it impossible for this study to give a clear picture of the magnitude of costs incurred in promoting tourism in the region. This is a subject which needs complete research in the region to justify the government expense involved in tourism. General observations show that tourism costs are high. For example, money allocated to tourism in the Second Five Year Plan (1969-74) was 203 mil. shs., and nearly half of this was to be spent in the Northern region. Tourist investment in the region was estimated to be 94.8 mil. shs. in this period with the biggest investment going to the development of hotels, lodges and other infrastructure for tourism. About 10 mil. shs. was allocated to the development of the parks⁵⁰. In addition to this amount was 94 mil. shs. spent (1971) to build the new Kilimanjaro International Airport which was not included in the estimates of the Plan.

Out of this 6.6 mil. shs. shown as "other expenditure" on the table below include capital costs to improve access roads in the parks, provision of infrastructure etc.

Costs and Benefits of Tourism 1970

Thus, by comparing the costs and benefits of tourism for 1970 whose figures are known, it is possible to find out if tourism investment benefits the region or not. In 1970 the net income from tourism in the region was roughly 31 mil. shs.,

lands in calculating the cost of tourism. Alternatively, and equivalently, we can set a value on the lands employed for wildlife viewing, according to what they would be worth in their best alternative uses, and then, using the appropriate rate of interest, find a figure for rentals.

The appropriate rental (or land price) to charge against tourism depends upon whether or not the tourist use of the land is exclusive. That is, it depends upon whether land denoted to tourism requires that all other uses be eliminated. In the case of the National Parks, which serve pure conservationist purposes as well as the purpose of catering for tourist demands, it is clear that there is multiple land use. Allocating the whole cost of the land in National Parks to tourism will therefore give a high estimate of the cost of tourism. In the case of Game Parks like Ngorongoro Crater or some parts of Mkomazi, where wildlife and cattle simultaneously make use of the land, it is inappropriate to allocate the whole cost of the land to tourism. Rather, the appropriate charge to make is the difference between the price which cattle ranchers would pay for the land in a situation in which they have exclusive use, and one in which they must tolerate the presence of wildlife.

To summarise, the appropriate rental of land to charge to tourism - or the appropriate value of land which should be considered as part of the Government capital tied up in tourism - will depend upon the valuation of other wildlife uses consistent with the tourism use of the land (conservation, meat cropping, etc.) and the productivity of alternative uses of the land. The latter will in turn vary depending upon the institutional framework we assume (common property or individual ranches) as well as the market demand for outputs and the technologies of most uses.

A final complication should be mentioned. Many of the lands ostensibly devoted to 'tourism' have been set aside not to serve present tourists, but rather to serve future tourists. While this setting aside makes sense where reversion to the wildlife use will be impossible in future, and where the discounted returns from the wildlife use exceed the discounted future returns of the alternative uses, it is inappropriate to consider the current costs of these items as chargeable against current tourism. Instead, they should be charged against future tourism.

A calculation of the above costs is left for a future research study as data is not available at present. The observations above have been included just to show what data would be required to carry out such a study.

The Economic Impact of Tourism - Summary

It is thus apparent that this region, on account of its attractions, receives a lot of benefits for itself and for Tanzania, from tourists who come here. The tourist industry certainly has resulted in more resources of skilled manpower and capital being resident in the region than would otherwise be the case. It draws some resources - labour and land - from the traditional sector to the modern sector which would not otherwise be drawn out, and so increases the regional and national product on that account. Finally, tourist expenditures make a substantial net contribution to the region and Government budget.

The lack of income-expenditure data for the different types of income recipients in the region renders it impossible to calculate the multiplier effects of tourism. Perhaps this can be done later on when and if such data can become available.

Employment Generated from Tourism

Approximately 25% of tourist expenditures goes to create jobs in the tourism industry. This includes hotels, lodges, game park staff, tour operator personnel, shop assistants, carvers etc. This being the case then, in 1973 employment arising from foreign tourist expenditure in the region amounted to 2,800 workers (Direct payments to labour 14 mil.). By 1980 the number of people employed in the tourism industry may rise to 9,000 if the present growth trend in tourism continues.

Apart from this direct employment, resident tourism also creates some employment too in the region which should be added to the above figure. Also tourism generates a substantial amount of employment outside the specifically 'tourist' activities. Given the pattern of visitors' expenditure it appears likely that for every 100 persons employed directly in those activities another 70-80 may be employed elsewhere in the economy⁵². If employment in construction of tourist facilities - roads, hotels, airports etc. - were included, this 'indirect' employment figure would swell the 1973 number of employees in the tourism industry to a higher figure.

Table: Employment in Hotels in 1971

70	
A. No. of hotels in the Parks	11
No. of Rooms	557
Ave. of empl./per room	1.5*
<hr/>	
Total Employment in Lodges	854
<hr/>	
B. No. of hotels in Moshi/Arusha Towns	16
No. of Rooms	436
Ave. of Empl./room	1.25*
<hr/>	
Total Employment	545
<hr/>	
Overall Employment (A + B)	1399
<hr/>	

*Assumptions made by A.D. Little Report, op. cit.

NOTE: The employees in the above hotels include skilled employees, managers, accountants, chefs etc. and relatively unskilled workers like lawn attendants, cleaners, porters etc. At the moment there is lack of Tanzanian trained personnel, and every effort is being made to train local manpower.

12.10. INTERNAL AND INFRASTRUCTURAL ORGANISATION OF TOURISM

Since tourism organisation in the region follows the national set up, it is worthwhile looking at the national set up first and then the local set up in the region including also the national parks organisation and hotel organisation.

The Ministry of Natural Resources and Tourism is responsible for tourism development and the management of the tourism sector for the benefit of the people of Tanzania. It has local offices in both Moshi and Arusha. The following agencies operate under the supervision of the Ministry of Natural Resources:

a) Its Division of Tourism is in charge of preparing overall policy decisions and planning at the national level of the administration resulting from the Hotel Accommodation Act and the Tourist Agents (Licensing) Act and of Tourist Information and Promotion through its offices in the country and abroad. It has also to take care of organising other services necessary for successful tourism, such as professional training as well as of creating and maintaining tourist infrastructure. Its activities thus includes general control and furthering of hotel industry and tourist infrastructure. Thus, tourism development and management in the region is directed by the above Ministry and all action/projects undertaken in the region concerning tourism has to have the blessing from the Ministry through its local offices.

b) Game Division

The Ministry of Natural Resources and Tourism is also responsible for the development and administration of game reserves, game controlled areas, the import and export of game skins and the professional hunting industry.

At the Regional level, the Regional Game Department undertakes the aforementioned duties on behalf of the Ministry and

all issues concerning the conservation of animals, control of poaching etc. is undertaken from this department. There are two offices of the above department, in Moshi and in Arusha. From these offices too, hunting licences and camping permits are obtained.

c) Tanzania Tourist Corporation: is responsible for the development of commercial tourist industries on behalf of the Tanzania Government. The TTC is a parastatal directly responsible to the Ministry of Natural Resources and Tourism.

The TTC came into being in 1969 and has been entrusted with the implementation of government participation in hotel industry and tourist trade. Its main task is to develop new hotel and tourism enterprises, to invest in hotel plant and tourist facilities, either exclusively or in co-operation with private capital, and to operate such enterprises. In principle its enterprises should be profitable and the TTC has to earn revenues for the government and expand its profitable business. Today the TTC participates in all lodges in the region, while in some of the private hotels it has controlling interests, since Halmark's (Hotel managers) contract was terminated in 1973. It also controls a film company formed in 1968 which controls the importation and distribution of foreign films in Tanzania; Tanzania Wildlife Safaris Limited; TTL, Company which provides a fleet of coaches for tourists' transport between the corporation's hotels and lodges and points of arrival and departure; and also offers all-inclusive tours for sight seeing and game viewing; a State Travel Service to all Parastatal and Government Agencies; a duty-free shop whose objective is to cater for travellers' gift requirements at the main airports; a new Supply Firm to deal with the raw materials of tourism and other tourist ventures.

All the above firms operate in the region to serve tourists who come into the region's national parks. Most of these are based at Arusha where most of the journeys into the national parks commence from. The TTL coaches are very numerous in the region, almost outnumbering private coaches both local and from Kenya. TTC also owns the landrovers which take tourists into the Ngorongoro Crater for sight-seeing.

As is appreciated tourism cannot be confined to visits from foreign travellers or holiday makers. Accordingly, the TTC in conjunction with the Ministry of Tourism and other local institutions is making adequate arrangements in order to provide necessary facilities for the growth of domestic tourism. It is hoped that this will give Tanzania's tourism the elements and the benefits of a partly home-based industry which it deserves to be.

d) Tanzania National Parks, responsible for the development and operations of Tanzania's outstanding national parks system. The Tanzania National Parks are responsible to their Board of Trustees and the Ministry of Natural Resources and Tourism.

In the region, each national park is organised as follows: Each national park is managed by a Park Warden and an Assistant Warden. He is responsible for the day to day running activities of the national park, its development and conservation both of its fauna and flora.

To help him in his activities, he has Game Wardens varying according to the size of the park, most of whom have been trained at the College of Wildlife Management at Mweka-Moshi. These men are dedicated men with an instinctive love and understanding of their work.

At the lowest scale we find Game Scouts, Rangers and other junior staff who work both in the field and in the park headquarters. The game scouts and game wardens help a lot in the field of game management, especially in combating game poaching which is on the increase in this area.

e) Ngorongoro Conservation Unit, responsible for the development and administration of the Ngorongoro Conservation Area. Its activities include research game management and conservation of the crater area.

The Regional Tourism Division, the Game Division, and Tanzania National Parks and the Ngorongoro Conservation Authority are jointly responsible for the development of tourist infrastructure in the region. The TTC, as seen above, is the commercial wing of the government in Tourism development and its activities in the region are very important with relative success already achieved in most of its tourist activities.

Local Hotel Organisation

Most of the hotels and lodges are now owned by the TTC. Each hotel is run by a manager and an assistant manager appointed by the TTC. In turn these are assisted by workers employed in the running of the hotels, including waiters, waitresses, room attendants, cleaners, cooks, daily maintenance workers and other service workers.

Hotel booking is done either by the main office or directly through the hotel concerned. In the past, and to some extent now, hotel management was carried out by expatriates but gradually the government, through TTC, has been working towards localising most of the staff. The TTC has mounted an intensive training programme in hotel management and the Hotel Training School at

Dar has trained quite a number of hotel staff (about 1,500 by 1972) most of whom are junior staff. In addition the TTC has sent no fewer than 34 hotel management trainees abroad to train for higher hotel posts now being held almost entirely by expatriate staff.

OFFICIAL PROMOTION ORGANISATION

The Tourism Division of the Ministry of Tourism is the Official tourism promotion agency both for this region and for the rest of the country, although the Game Division of the same Ministry is responsible for the promotion of hunting industry.

Functions of the Tourism Division

The functions of the Tourism Division are generally to promote tourism abroad in order to increase the number of tourist arrivals to Tanzania and the average length of stay of visitors, to improve the quality of stay for tourists in Tanzania, and to educate the people of Tanzania on the benefits of international tourism as well as to encourage the people of Tanzania to see their own tourist assets.

At the regional level, the regional tourism division works to promote tourism in the region, particularly the wildlife areas west of the region, and encourages school parties to visit the national parks by providing hostels and free entrance to the national parks.

Specific activities of the Tourism Division in order to encourage foreign tourists to visit the region and Tanzania in general include the organisation of travel agent and journalist familiarisation trips, production of and distribution of tourism publicity materials, responding to tourist enquiries, maintaining tourist offices overseas, coordinating the activities of foreign missions and embassies in the promotion of tourism, organisation of tourism workshops abroad where sellers of tourist facilities

are put in contact with foreign purchasers.

In order to improve the quality of visits to Tanzania, the Tourism Division prepares and distributes information material for tourists already in Tanzania, maintains 3 offices in Tanzania, one in Dar, and the other two in Moshi and Arusha, to deal with tourist enquiries and difficulties; endeavours persistently to ease the entrance and exit formalities for tourists, regulates the travel industry through the Hotel Board, which licences hotels, and the Tourist Agents Licensing Authority, which licences Travel Agents, professional hunters and tour operators; co-ordinates tourism activities within the government of Tanzania and within the EAC etc.

GOVERNMENT PARTICIPATION IN TOURISM

Realising that the tourist industry can contribute significantly to economic growth, the Tanzania Government decided to participate in this industry which was, in the past, left to the hands of private organisations. Its participation comes in different ways of which the following form part of these:-

- A) Ownership of Hotels - already discussed.
- B) Financial Assistance specifically available (e.g. loans and guarantees. Within the framework of the Second Five Year Plan the government authorised an investment of T shs. 203 mil. in the tourist industry - almost 50% of which was to be spent in the Northern Region. The anticipated source of this finance was to come from both public and private sources. Its objective was to achieve 120,000 tourists' arrivals by 1974 as compared with 40,000 tourists who visited the country in 1968.

The government does provide loans and guarantees for tourist projects specifically, but loans for tourist projects can be secured from the Tanganyika Development Company and from the

Tanzania Investment Bank. The greatest government investment in tourism infrastructure in the region of late includes the building of the Kilimanjaro Airport and the building of the Mt. Meru Hotel in Arusha.

Certificates issued under the Foreign Investors Protection Act guarantee that foreign investors will be permitted to repatriate profits, that foreign investments will not be nationalised without compensation, and that proceeds from the sale of investments can be repatriated abroad.

C) Income Tax and other concessions on hotel income: The government of Tanzania offers capital allowances amounting to 20% of the cost of the hotel building and fixed plant and machiner installed therein. Depreciation allowances are 6% annually of the declining value of hotel buildings and fixed assets installed therein.

D) Import Duty concessions on material and equipment: The government does not in general give concessions in this area.

E) Provision of Public Funds for publicity purposes: The government provides approximately 1.6 mil. shs. annually for the Tourism Division. Of this total 1.2 million finances tourism promotion activities of the Dar Hq. Office and the overseas offices. No separate figures are available for funds spent in the Northern Region.

F) Government Expenditure on Infrastructure: The government finances the development of tourism infrastructure to a substantial degree. Government contributions in 1971 amounted to 3 million shs. including 2 mil. shs. for Tanzania National Parks.

Thus, it is seen that the government actively participates in this industry, both in this region and the rest of the country by providing direct funds for government investment or giving incentives for private investment; credit facilities and

fiscal concessions,. Hence, the industry enjoys the great help it receives and its future is therefore very bright indeed.

12.11 POTENTIAL OF TOURISM IN THE REGION

Market Potential

The Northern Region has tremendous potential for further tourism in the future as long as the parks remain as good and as beautiful as they are. The region's tourist attractions appeal to two different markets: the park-orientated market, composed primarily of North Americans, Japanese and Australians, and to the Beach-cum-Park orientated market, composed primarily of the Europeans.

The park-orientated tourist, whom we are mostly concerned with here, comes to the region primarily to view exotic game in its natural habitat and experience the thrill of "discovering" Africa. Currently the park-orientated tourist spends only 3-4 nights in Tanzania mainly in the national parks in this region. The number of park-orientated tourists and their length of stay in the Region can be increased by further developing the parks in the region and by opening up new game viewing circuits in those parts of the region which are not fully exploited at the moment.

The park-orientated tourists who mostly visit this region are not interested in Tanzania's beach attractions. North Americans, Japanese and Australians all have good beaches either in or far closer to their home countries than Tanzania. The great distance of these markets from Tanzania and, therefore, the expense of getting to Tanzania also makes the park-orientated tourist want to get his money's worth by seeing something new each day. Although some operators are experimenting with a rest stop on the beach a tour of the game parks, the typical park-

orientated tourist is reluctant to "waste" time relaxing at a beach in Tanzania or East Africa.

The beach-cum-park-orientated tourist comes to the region to enjoy the splendour of the national parks and later proceeds to the coastal beaches of Dar to enjoy the sun, sand and sea during the winter season in Europe. This market has been growing steadily of late and the number of Europeans visiting this region and combining it with a trip to the coastal area has been rising. It is estimated that 70% of the European tourists going to East African beaches now include some game viewing during their stay at the beach. In fact, the combination of beach holiday and exotic game viewing is Tanzania's primary competitive advantage over competing beach destinations in North Africa, the Indian Ocean (e.g. Seychelles Islands and Sri Lanka) and S.E. Asia (e.g. beaches near Bangkok and on the Island of Penang).

Q2.11.1. THE DEMAND FOR TOURISM

European Markets

The solving of some of the above mentioned restraints will pave the way for increased tourism not only in this region but in Tanzania as well. It is expected that the number of Europeans to come to this region will increase in the future as more of them visit east Africa.

The European market, as seen earlier, does not consider the Northern Region of Tanzania as a tourist destination in its own right, but as a component part of East Africa, which is considered to be one destination country. (Unlike Americans, Europeans tend to spend their holidays in one destination country, rather than take in several countries during one tour). Since the late '60's the number of Europeans into the region has been increasing and there is no reason why this trend will slacken in

the future, with a possible increase in average bednights which currently stand at 4.5 nights.

Structure of the European Market

Although varying according to each country's population, the standard of living and its social habits, foreign travel is coming within the reach of every class of the population in every European country (with the exception of Spain). Everyone is made aware of the possibility through a barrage of advertising and promotion through the fact that buying a holiday tour is continually being simplified. Foreign holidays are now sold in outlets with which the average person is familiar in his daily life - departmental stores, banks, supermarkets, mail order firms, pubs, trade union branches and the company for which he works - as well as through the specialist retail travel trade.

In Europe the greatest market for East Africa - and hence the Northern Region - now and in the future is Germany, Switzerland, the U.K., France; then followed by the Scandinavian countries and the Benelux countries.

a) Germany: According to the 10 Year Plan by Little, it was estimated that the inclusive tour in 1970 for Germany was in the region of 60,000. With a growth rate of 30% p.a. the long-haul tours by the end of this year (1975) should reach 230,000 of which 82.5% will be charter flights. The growth rate will then probably slow to 12% over the next five years, giving around 400,000 long-haul inclusive tours by 1980, of which 87.5% will be charter. Out of the above total, it is expected that more than 45% will visit the Northern Wildlife Areas as well as the Kilimanjaro/Arusha area and hence bring some money into the regional income.

b) Switzerland

While some 70,000 long-haul inclusive tourists travel with Swiss tour operators, much of this clientele comes from the European countries. It was estimated that purely Swiss long-haul inclusive tour market was in the neighbourhood of 28,000 in 1970, and by the end of 1975 it will have reached 56,000, and to 114,000 in 1980, an annual growth rate over the ten years of 15%. As with the German market, it is estimated that over 45% of the above tourists may travel to the Northern Region.

N.B. For Market Forecasts see Main Report - Vol. 1.

12.11.2 Constraints

However, the region's and Tanzania's tourism potential is hampered by certain constraints. The constraints to the full development of the tourist market potential are common to all nationality groups. The constraints frequently mentioned by members of the travel trade are cost, political uncertainty, insufficient and inadequate ground tour operators, insufficient promotion, red tape, ignorance of tour economics, surprise price increases and hotel cancellation charges.

1. Cost

The most important constraint to increasing tourism to this region and Tanzania as a whole, is the cost of a holiday in Africa. A major component of the cost is the international air ticket: the most effective way of reducing international air transport costs is to encourage back-to-back charter programmes which typically cost 2 to 2½ cents (US dollars) per seat per mile versus 3-4 times that amount of normal air fares on scheduled airlines.

Concern has been raised in Tanzania that inexpensive charter flights would bring in tourists who spent very little

money. However, there is not necessarily a correlation between the cost of international air transport and the income of tourists. In 1969/70, for example, the only back-to-back charter programme to East Africa from the US was advertised at less than \$1000 in the US and sold primarily to groups of lawyers, members of downtown university clubs, and other professional groups with comparatively high incomes.

The cost of a holiday in Tanzania can also be reduced significantly by encouraging lower air fares within the country, particularly between the Northern Tanzania Parks and the Dar area,. However, the energy crisis and new prices is a force to be reckoned with. The most effective way to reduce these internal airflight fares is to encourage split charters between the Kilimanjaro I.A. and Dar. Split charter rights on this leg would allow a tour operator to drop off passengers at KIA and at the same time pick up passengers he had previously brought into Tanzania for transport to Dar beaches. In this way, a tour operator's charter aircraft can be kept fully loaded and the cost of transport within Tanzania reduced far below the rates now available on scheduled carriers.

Again Tanzania can introduce domestic inclusive tour fares which would make it more attractive for tourists visiting the established centres at Arusha and Dar to visit other parts of the country.

It is more difficult to make significant percentage decreases in the cost of ground arrangements for tours into the region or the country. The cost of transporting tourists over large distances in small cars in order to visit major game parks make tours of Tanzania expensive by international standards. Tanzania, therefore, should not introduce any taxes or fees which make its ground package any more expensive than those of competing

destinations, especially within East Africa.

2. Political Uncertainty

Rumours about the Kenya/Tanzanian Border being closed have been very prevalent in the past. Some tour operators in fact have been led to believe this to be fact and to plan their tours in Kenya only. Any hindrance to free border crossing - in both directions - will hurt this region considerably more than Kenya and talk of such things, however unfounded, can do almost as much harm as the fact itself.

Again, the recent troubles in Uganda have hurt tourism both in this region and in the whole of East Africa, since most foreign tourists who book to come here do not distinguish individual countries - they take East Africa as one destination. As a result, a number of tourists have declined to come here and changed to other destinations. It will take time for people to forget such troubles and start flowing in easily again.

3. Ground Tour Operators

Another constraint is the scarcity of good ground tour operators servicing this region and the whole of E. Africa, and the lack of reliable tour operators capable and willing to organise tours to lesser known areas. The state-operated travel firm is short of vehicles and sometimes lacking in services.

Tours to lesser known areas - wanted by a number of smaller more exclusive European tour operators, serving a more expensive clientele - would open up new areas at little promotional cost to the Region and Tanzania itself.

4. Red Tape

Obtaining visas is a lengthy process, and in some countries (notably Germany) precludes a tour from being booked less than a month before departure. Adding to the problem is the irritation of having to obtain visas in the country of origin at all, and

the uncertainty of whether or not tourist visas can be obtained at the Tanzania border. On this question of visas the government is fully aware of this and the matter is being considered at high level to find means of making it easier to obtain these visas.

Indirectly, the uncertainty about what happens if a tourist has a S. African or Rhodesian stamp in his passport has become a constraint. Some tour operators are actually advising, in writing, that their tourists should obtain a second passport if they are travelling to Tanzania as well as these countries. How many tourists will bother and instead, just give up the thought of Tanzania?

Finally, there is the bothersome and unfriendly facilitation at the airports, which not only irritates the tourists, but makes them feel unwelcome. Measures are at hand too, to speed up and ease movement of tourists at airports.

5. Tour Economics

The economics of large scale tour operations are not understood. Such tours require large block bookings, a constant watch on transportation and their costs, a dovetailing of flight times, promotional support and the provision of factual information.

6. Price Changes

Tour operators plan and cost their tours 18 months ahead. Their profit margins are small. A rise in park entrance fees, in hotel levy, in other taxes, or in hotel charges announced at less than 18 months ahead of time will cut their profits, and result in their going elsewhere.

7. Hotel Charges

Hotel booking conditions and cancellations charges inhibit tour operators from booking as many lodge beds as they could

sell. The normal world standard is cancellation one month before arrival date and this standard should be adhered to in Tanzania. Such measures have recently been implemented.

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this figure has been taken to apply to this region.

CHAPTER 13 - MANUFACTURING INDUSTRIES

Introduction:

Manufacturing Industry in Tanzania in General

Like most developing countries Tanzania is actively concerned with the promotion of manufacturing industries and this has been reflected in the regions as well. During the colonial period the economy depended heavily on subsistence agriculture, the export of raw materials to Western Europe and also Kenya. For many years to come Tanzania's economy will be firmly rooted in its agricultural resources, but its industry will be of growing importance in providing employment in urban areas, and in saving foreign exchange by import substitution.

Since Independence there has been considerable industrial activity, associated firstly with the processing of the major agricultural crops both for local consumption and for export. These processes include such activities as the preparation of sisal leaf for fibre, the ginning of cotton, and the drying and mulling of coffee etc. Many of these operations are of a simple nature and can easily be included in the routine of a homestead, the agricultural workers supervising the mechanical processes.

A second phase has been the growth of repairs, maintenance and assembly facilities for the machinery and vehicles used in agriculture.

The third phase, is the activity associated with the building industry and the final stage is the manufacture of consumer goods with the emphasis on the goods made of local materials.

13.1 Manufacturing Industry in the Region

Industry, already plays a larger part in the economy of the region, than that of most regions in Tanzania, and rapid growth is expected. Manufacturing Industry brings in well over 40 million shs. into

the region annually after agriculture, commerce and services.

The present industries are engaged in processing and manufacturing activities based on local agricultural produce and the manufacture of a variety of consumer goods, in all of which expansion is planned with the ultimate end of introducing some larger enterprises later.

Apart from small-scale primary processing (e.g. saw mills, coffee pulperies) industrial development is concentrated in Arusha, Moshi and Same towns with much of the expansion taking place through private investment and the National Development Corporation undertaking a number of major projects.

13.2 Government Policy and How it has determined the location and amount of Industries in the Region.

The Arusha Declaration has determined the future industrial pattern not only of this region, but of Tanzania as well, and the major means of production are now under the control of para-statal bodies such as NDC, the Tanzania Sisal Corporation and the National Milling Corporation. The Government has delineated the fields of industrial production in which the money and skills of the private sector will be welcomed, but through its state monopoly of commercial banking and insurance.

Since help is given, several industries have been established in the towns of Moshi, Arusha, Same and Mbulu to diversify the economy of this region which has been depending on agriculture for a very long time.

Under the Treaty for East African Co-operation signed in 1967, the respective countries of the East African Community are committed to rectifying the former imbalance in trade between Kenya and the other two partners. In a bid to ensure Community self-reliance in certain manufacturing activities, without destructive international competition, member countries have been given exclusive rights for the development of certain industries for the wider markets. Tanzania has the exclusive right

of establishing industries for the assembly and manufacture of four-wheel drive vehicles, the assembly and manufacture of radios and the manufacture of motor vehicle tyres and tubes. It is fortunate that the last two have been established in the region. The radio factory opened at Arusha in 1968 and the tyre factory the following year.

In addition, in the Second Five Year Plan, both the towns of Moshi and Arusha were among the nine towns selected as "Growth Points/centres" (the other towns were Tanga, Morogoro, Tabora, Mwanza, Dodoma, Mbeya and Mtwara). These towns were to receive any industries decentralised from Dar or any other industries to be established in the Plan period. Although the number of new industries so established were few, this was a step towards the right direction for the growth of this region.

The Structure and Amount of Industries

At the end of 1968, there were a total of 1187 factories in the region with 720 located in Arusha and 467 in Moshi. The majority of these industries are fairly very small, employing sometimes less than ten people. By 1971, the number of new industrial establishments was 54 in Arusha District, 1 in Masai District, 2 in Mbulu d.; 48 in Moshi District and 2 in Pare. To date, the number of industries has increased slightly with most of the new industries locating in Arusha and some in Moshi town.

Of the total industrial establishments in 1971 - (107) - 31 processed food products, 3 beverages and soft drinks, 14 textiles, 3 tanneries and leather, 15 forest products, 16 machinery and the rest were spread into making things like radios, tyre repairs etc. Arusha has more food manufacturing establishments than Moshi, but the latter has more establishments handling forest products.

The only big establishments in the region employing more than 100 people in 1967 are Tanzania Millers Ltd. (flour) located in Arusha, Sherif

Dewji and Sons (beans) - Arusha; Lucy Estate (sisal) - Usa River; Karayani Estate (sugar) - Usa River; Valeka Estate (sisal) - Usa River; Dolly Estate (sisal) - Usa River and Tanganyika Meerscham Corporation - Arusha.

In Moshi, establishments employing more than 100 persons include - Tanganyika Planting Sugar Company in Arusha Chini; Moshi Trading Company in Himo; Kifaru Sisal Estate; Moshi Clothing Factory, Tanzania Coffee Curing Company at Moshi; Imara Plywood factory etc.

Generally speaking, this region's manufacturing and service industries fall into two major classes: the market-orientated, and the material-orientated industries. There is however, a small group of industries which are, perhaps classified as market-cum-material oriented industries. Within the material areas the market orientation seems stronger.

1. The Market Oriented Industries include:

- (a) Such processing and fabricating industries as grainmilling especially common in Arusha; miscellaneous food products processing, bakery products processing, chocolate, confectionary processing; brewing and blending of alcoholic beverages, soap and oils ; ~~preparing; miscellaneous~~ chemical producing - mainly pyrethrum in Arusha; footwear fabrication and repair; textile manufacture, clothing fabrication, furniture and fixtures fabrication and paper products manufacture eg. the cardboard box factory at Moshi.
- (b) Such non-agricultural manufacturing industries as
 motor car repairs in Moshi, Arusha
 Same and in the other smaller towns of the region.
- (c) All other service industries such as printing, publishing, machinery, repair, rubber products etc. The majority of these industries are located in Moshi and Arusha towns where the

regional market is at hand serving not only the urban areas but also the surrounding rural areas.

2. The Market-Cum-Materials Oriented Industries.

These include

- (a) such agricultural processing and fabricating industries as meat and dairy production (mostly in Arusha town); fruit and vegetable; canned ~~and~~ soft drinks production, fabrication of leather goods and miscellaneous wood products processing (Moshi town) and
- (b) the remaining non-agricultural producing and fabricating industries such as clay and concrete products. etc.

3. Finally the Material-Oriented Industries consisting of the following agricultural processing and fabricating industries such as sugar producing in Arusha Chini, coffee processing in Moshi and pulperies in the countryside; fibre processing and sawmills in Moshi near the forest reserves.

13.3 Resources of Industry: Factors that have Determined Location

The location patterns of the individual industries have evolved through the influence of various factors. Most of these factors include the following:-

The geological influence - for example the mining of meerschaum and phosphates have led to the growth and location of this industry here.

The influence of Relief, rainfall reliability and ecological patterns -

The obvious case here is Arusha town: Because of its suitable location in a high altitude where the temperatures are mild and pleasant. Several industrialists have picked it as a place to establish a factory. In addition the bulk supplies of good clean water attracts industries requiring ample supplies of water like beerbrewing and the manufacture of

soft drinks. Although not all parts of the region are well supplied with water, the water services available in the industrial towns of Moshi and Arusha are more than sufficient to meet the requirements of those industries which are not heavy water users.

Demographic and other Social Factors

A few industries have been located both in Moshi and Arusha because of the easy availability of suitable labour. Manpower is plentiful in the region though in some cases skilled labour is in short supply; but every effort is being made to improve the situation. In the ending Five-Year Plan the Government earmarked some money to be spent on technical education. A step in this direction has been the establishment of two technical schools one in Arusha and one in Moshi (Mandaka) to train intermediate skills to man both cottage industries and large-scale industries.

Further, extraneous factors such as personal consideration may well have a very important influence on the location decision.

Economic Factors - too have decided the location of some of the industries in the region. Industrial enterprises ancillary to agricultural production, or engaged upon the primary processing of produce, are usually sited close to the growing areas. Hence there are a lot of sisal-decorticating factories in the sisal growing areas near Moshi and Arusha; coffee-pulping plants in the coffee growing areas of Kilimanjaro and Arusha and a few cotton ginneries in and around Moshi and Same.

Secondly, the availability of abundant power supplies from the Nyumba ya Mungu Dam and Pangani has attracted industries needing a lot of power.

The Tanganyika Electricity Supply Company provides the region with all its requirements. Power from the above mentioned sources is more than enough to meet all industrial establishments in the region now and in the

foreseeable future. The current activities of supplying power in the mountain villages will encourage the growth of cottage industries using power tools.

Thirdly, there is still plenty of industrial land in the major towns in the region. To help manufacturers to produce their products in the region the Government and L.A.'s have provided land for industrial sites and estates pre-serviced with roads and in some cases railway feeder sidings. Some of the industrial zones are located close to residential areas giving them access to a pool of urbanized labour.

In Arusha, there are two industrial main areas - Unga Industrial Zone at the railway terminal and a newer area at the foot of Temi Hill. Future development of industry has been channelled to go to the Unga area and in Temi. After these two areas are more fully developed, a new road-oriented industrial estate is expected to be developed N.E. of Arusha in the vicinity of the Moshi/Nairobi trunk road (1).

Estimated industrial land requirements for Arusha 1969-89 are presented below. These estimates do not include service and small industry areas.

TABLE 71

<u>Estimated Industrial Land Requirements for Arusha - 1969-89.</u>							
<u>Year</u>	<u>Indus.¹ Acres</u>	<u>Reserve</u>	<u>Total</u>	<u>Unga</u>	<u>Temi- Corridor</u>	<u>Temi- Estate</u>	<u>Others.*</u>
1969	110	30	140	85	35	20	10
1974	220	110	330	140	35	145	10
1979	350	175	525	165	35	315	10
1984	500	250	750	190	35	515	10
1989	700	350	1050	240	35	650	125

Source: Arusha Master Plan by PADCO. pg.36.

* The ten acres represent the Phillips Radio Site. The additional 115 to this column by 1989 represent the development of the new industrial area along the Moshi/Nairobi trunk road. The reserve land shows how much land is still lying idle for future expansion.

Moshi town's industrial land is located near the railway station, an area S.W. of the town and at Kiboriloni. Currently, there are 180 acres reserved for future industrial expansion when the need arises.

Other economic factors include the availability of managerial skills, good transport network both South and North to Kenya and also East to Tanga and Mombasa and market attraction. Quite a number of the consumer industries have been located here (Moshi and Arusha) because of the ready market of the highly concentrated population around the mountain.

In almost all cases, no single factor appears to indicate the right location clearly on its own, because the correct location is usually a product of a set of appropriate location factors. Moreover, the concept of an optimum location appears to signify little in the region where, in practice, it is impossible to know what the optimum location is, since circumstances change so much during the life of an industrial plant.

13.4 Industrial Activity in detail

Most modern manufacturing industries are located in the main three towns of Arusha, Moshi and Same. Only a few are located in the minor towns of Mbulu, Himo, or Oldeani.

At Arusha, the capital of the EAC and the centre of prosperous farming area over 23 sq.km. of land has been reserved for industrial development. Already developed industries include a textile mill whose annual capacity is 10,000 sq.yds. The mill, supported by Kilimanjaro Textile Corporation, uses raw cotton produced in Tanzania supplemented by imported spun rayon. It employs 800 workers. There is also a dairy - equipped by UNICEF - producing butter, ghee, cheese and milk; a pyrethrum extract factory, a brewery and radio factory (mentioned earlier); a plastic foam rubber factory established in 1966 and the rubber and tyre factory. There is a potential area of 5,760 acres and rents are as low as £40 per acre. Nearby is an important specialist industry that makes pipes for smokers

from the locally obtained meerschaum.

In Moshi, there are factories producing matches, sisal bags, kenaf bags and mosquito coils. About 5 mil. coils per year are manufactured. It is hoped that the sisal bag factory will supply all Tanzania's needs which are at present about 12 million bags annually. Other industries include a cloth manufacturing firm, wood manufacture and furniture making, hides and skins processing and a host of other service industries. Twenty-five kilometres from the town is Arusha Chini is one of the two large sugar refineries in Tanzania, sugar being a commodity in which the country is nearly self-sufficient.

In Pare District, there are only two industrial establishments with 23 factories dealing with textiles and 24 dealing with footwear. The majority of these factories are located in Same town.

In Masai District there is only one industrial establishment dealing with the manufacture of agricultural produce and in Mbulu, there are two establishments dealing with sugar refinery and textiles employing well over 50 people. These establishments are located in Mbulu town itself.

13.4.1. INDUSTRIAL ACTIVITY - SECTORWISE DISTRIBUTION AND EMPLOYMENT

(A) Food Manufacture

This is a sector with the highest number of industrial firms. For example in 1968, there were 454 firms engaged in the food industry, employing a total of 5,150 people. In both towns the incidence of flour milling and coffee pulping enterprises is relatively high and the level of employmentⁱⁿ the latter is higher than in the other type of food processing. There is no data to indicate if there is scope for the development of large-scale processing in any of the operations which are now carried on a small scale.

The notable exception is that of vegetable and fruit canning which

has very high potential. The NDC has also considered erecting a vegetable and food processing plant in Moshi especially now the area in the vicinity of the airport is to be fully developed for vegetable growing-some of which will go for export.

There are also several bakeries baking bread, cakes, biscuits and others make toffees, sweets and spices.

In addition, there are several sugar refineries: two in Arusha making sugar and jaggery; two in Mbulu (Bebati) also sugar and jaggery and TPC at Arusha Chini (a privately owned company). Production has gone up from 33,092 tons of sugar in 1967 to 45,000 tons in 1972. After making sugar, the remains of baggase and mollasses are exported abroad. The present size of the farm is 10,000 acres and there are plans to extend both the factory and the farm. The farm will be increased by about 5,000 acres.

(B) Beverage Manufacture

There are three factories in Arusha and six factories in Moshi. The big factory here is the Kilimanjaro Breweries in Arusha which not only supplies beer to this region, but also to the rest of Tanzania, Kenya and Uganda. Expansion is planned to meet the ever increasing demand for beer in the country. The suitable climate and plenty of water supply in Arusha provides the ideal condition for this industry. The Moshi Brewery produces 59,000 cases of beer per month. In both towns there are also 7 aerated water manufacturing plants supplying soft drinks. The market is always there, and the prospects for the future are encouraging.

(C) Textile Manufacturing

In both Moshi and Arusha there are over 36 firms employing a total of 2864 workers in this sector. Most of the firms (30) are engaged in the sisal industry. An NDC plant was established in Moshi to manufacture sisal bags. It is now producing about 12.8 mil. bags. The factory also produces

higher quality bags made of sisal and kenaf. The current production of these bags is 1.5 mil. bags per annum. It is expected to produce between 6-8 mil. bags ^{per annum} when fully operational.

About 1,000 acres of Kenaf were cultivated in Kahe in 1969 and the acreage has since then increased. It is expected that growth will reach about 5,000 acres by 1980. The plant manufacturing at Moshi when working at full capacity will employ between 700-800 workers. Progress so far has been encouraging and further production is expected.

(D) Spinning, Weaving and Finishing of Textiles

In the region, there were in 1968, 56 factories. In Arusha town there are firms making cotton and rayon yarn products/fabrics; three establishments making singlets, vests and underwear; knitted outer and under garment and some clothes especially shirts.

In Moshi there are firms making garments, knitwear and assortment of other cotton materials. Most of these firms use local cotton. In both towns tailoring and dress making is the greatest employer in this sector. The textile is sold locally in Tanzania and to the neighbouring countries.

(E) Footwear Manufacture

This industry has 33 firms in the region, 29 of which are located in Moshi and the rest in Arusha. The industry is comprised of mainly mini-shops employing three to four persons.

There is some scope for further development. It is suggested that production of a simple low cost foot-wear made from leather should be started in Arusha or Moshi. Leather is in abundant supply here.

(F) Tanneries, Leather Finishing including Leather goods manufacture

This industry has ten firms employing one hundred and forty four people. Most of the firms are in the hides and skins processing trade and these are mostly located in Moshi (Kiboroloni)

and Himo. At present there are not enough skin bandas (huts) in Arusha and Moshi and this limits capacity handled. There is room for expansion in this industry if conditions are improved.

Tanzania Tanneries - Moshi

It is a joint venture between the Tanzania government and the Swedish Government with shares running at 60:40 respectively. It started to operate in 1970 - both full tanning and blue tanning (half tanning). Out of the skins and hides made here, 60% are exported abroad and 40% are sold in the country. Full tanned hides and skins fetch more money, so efforts must be made to try to produce all hides fully tanned.

The future prospects of this industry is rather bleak because of lack of enough skins because a lot of skins are smuggled and sold in the neighbouring countries. With proper cooperation with the cattle producers the outcome of this industry can be very encouraging.

(G) Rubber Products

The main rubber industry in the region is the General Tyre Factory (EA) at Arusha which so far has exported a variety of tyres worth more than 6.5 million shs. to the neighbouring countries of Uganda, and Rwanda and Kenya (through the Firestone Tyre Factory at Nairobi). Up to now the factory has produced 110,000 tyres of different sizes. 88% of the tyres are used in Tanzania.

This factory is now studying markets in Zambia, Somalia, Indian Ocean Islands and Malawi. Prospects are good for further expansion and prospective orders may flow in soon.

In Moshi there are two factories engaged in tyre retreading.

(E) Wood Manufacture except the Manufacturing of Furniture

There are 18 firms engaged in this activity employing over 400 workers.

These are mainly saw-milling firms, producing beams, planks, timber and such household requirements as broom handles. The Moshi Plywood Factory with over 100 employees produces plywood for the region and the rest is sold elsewhere in Tanzania. There is a newly established, Crates Manufacturing firm in Moshi which up to the end of 1973 had produced 15,000 crates for soft drink bottles. It is hoped that production will be doubled from 5,000 to 10,000 crates following the installation of additional machinery to cater for the country's demands. (1)

Kibo Match Factory

This was started in 1966 at Moshi to save foreign exchange because match boxes used to come from abroad. Production at present is running at 8,250 cartons per month. The factory was expanded at a cost of 7.5 million shs. in 1972 in order to push production to between 9,000 and 10,000 cartons each month.

Its raw materials are several, most of them being wood veneers, flints and other chemicals. A few of these raw materials still come from abroad since local products are not available. The wood used for the manufacture of matches is podo which is locally available.

Production is a bit slow because of lack of trained personnel in the work and lack of some of the raw materials. It is hoped that eventually a factory will provide all the matches needed in the nation and some will be exported to Burundi and Ruanda. Current plans estimated to cost 2.5 million shs. are that of making book matches.

Assistance for the Saw-milling Industry

In both towns of Moshi and Arusha there are 74 firms with over 500 employees. Only six firms have more than ten persons each. These firms make an assortment of furniture - beds, tables, cupboards etc. Such industries are also established in the rural areas with local carpenters making simple

furniture for the home or for schools, dispensaries and so forth. The future of this industry is limited until cheaper forms of transportation becomes available or until the local consumer markets increases substantially. The ex-standard VII ^{school leavers} who do not get a chance for further education could benefit a lot if they go back to the villages and start carpentry-co-operatives.

(G) Printing, Publishing and Allied Industries

There are five letter-press printing firms servicing the towns of Moshi and Arusha. The number of people employed amount to 81.

(H) Miscellaneous Chemical Manufacture

This industrial group includes two firms producing chemical products; two manufacturing cosmetics, one safety matches component, and five soap manufacture. The total number of people employed in this sector number 250 workers. The majority of these firms are located in Moshi town. Its products are sold all over Tanzania and some to the neighbouring countries.

(I) Manufacture of Basic Industrial Chemicals except Fertilizers

In this category fits the Tanganyika Extract Company at Arusha where Tanzania's entire crop of pyrethrum flowers is manufactured into insecticides for export to many parts of the world. In 1967 the factory took in 5,877 tons of dried flowers grown by 30,000 smallholders and 20,000 estate workers in different parts of the country. This is virtually the optimum intake for a year and the objective is to consolidate production. For the grower the crop fetches about 6,000 shs. a ton. For the factory, one ton of dried flowers represents 199 lbs. of finished extract.

(J) Manufacture of Non-Metallic Mineral Products

This industrial group embraces the manufacture of meerscham pipes

in Arusha (176 employees); brick and tile manufacture in Arusha; plaster manufacture; pre-cast concrete works in Moshi; stone grading and crushing firms - mostly in Arusha etc. With an exception of the first firm, the rest aid the building industry which has expanded a lot of late because of the expansion of Arusha, Moshi, ^{and} Same; and residential development in the rural areas as people become more affluent.

The meerscham factory operates with the meersh dug from the mine near Amboseli. It is a rare mineral. Only in Tanzania and Turkey does it occur in a form suitable for making pipes. Tanzania's deposits only become known a dozen years ago. They are the largest in the world, and Tanzania's production of pipes is now also the largest.

(K) Manufacture of Chemical Products not elsewhere classified

Mosquito coils. The African Flower industries in Moshi, is a private firm which makes mosquito coils. The factory is capable of making 2,500 mosquito coils every month. Present production is running at 2,000 cartons (consisting of 1,800 coils each) only because some of its market has been taken by its competitors. At any rate the market, both in Tanzania and East Africa is still big and secure.

(L) Basic Metal Industries and Manufacture of Metal Products

This sector encompasses engineering in general, and has 27 firms employing over 200 workers. There is a gunsmith and gun repairing firm in Moshi; Metal sheet works and wrought iron works both have ten firms. Included also is furniture for both the home and the office. The market for the above products is very big and there is tremendous potential for expansion.

(M) Manufacture of Machinery, except Electrical.

There are several bicycle repairing firms in both Arusha and Moshi. In addition, there is one agricultural plant maintenance and repair firm in

Arusha employing twenty workers.

The bicycle industry can be developed at scores of points in the region to improve transport for the low income groups. As in the case of garments and footwear industries, this industry can be organised to benefit the majority of the people in the region.

(N) Manufacture and Repair of Electrical Machinery etc.

There are well over 10 electrical repair works employing 60 workers. The notable industry here is the Philips radio assembly works in Arusha, which manufactures and sells radios not only in Tanzania but in the rest of East Africa. Production is expected to rise as more and more peasants buy radios. Transistor radios can be used for adult education, political dissemination of ideas, and can also be used to broadcast general education in agriculture, health and sanitation.

(O) Assembly and Repair of Transport Equipment

Firms in this sector include: a locomotive and rolling stock repairs firm in Moshi employing 50 people and well over 80 motor vehicle repair and servicing works employing about a thousand people. There is also a truck body building firm in Arusha, and a bus body building firm in Moshi. Expansion is very limited by Tanzania's move to restrict car imports into the country.

(P) Miscellaneous Industries

Under this there are about 50 firms employing 350 workers. Among the activities carried out include dry cleaning, water supply, laundry, electric power generation by TANESCO at Kikuletwa Power Station and TPC at Arusha Chini; photographic developing and printing; watch repairing and a host of other small firms. Although the majority of these are in the urban areas, a few, e.g. watch repairing, are found in the rural areas.

Summary: Potential Growth

Industry is thus very important in this region particularly around the towns of Moshi and Arusha and to a less extent Same and Mbulu. Not only does it provide jobs but brings in income which raises the regional level of living.

It is also worth bearing in mind that the region's resources for industry are not that of a region rich in raw materials, other than agricultural materials, but rather those of a region with adequate services for industry, developing communications over a large region, and a sizeable consumer market including itself and its neighbours. There is also a labour force determined to learn industrial techniques. The industrialization of this region is inevitable, to help diversify the economy from agriculture. The government itself is committed itself totally to this development and so the future of industry here is bright.

The government and the Local Authorities may adopt policies to encourage industrialization here. They may decide to locate new industries in the two main centres by developing well-planned industrial estates, providing tax as credit advantages, training highly specialized personnel, or developing new transportation and communication facilities to increase the relative economic accessibility of these two centres to the various parts of the region, while at the same time expanding housing facilities and social services.

Growth in the industries outlined above, unless closely connected to or intergrated with the primary industries of the region, however, appears to be limited because of cost considerations.

However, those industries which are related to^{or} intergrated with the primary sector appear to have considerable growth potential. These include the fruit and vegetable canning industry, the processing of coffee, cotton and sisal; the milling industry etc.

PART II

13.5 THE ROLE OF SMALL-SCALE CRAFTS AND INDUSTRIES IN THE REGION

13.5.0 INTRODUCTION: ARGUMENTS FOR AND AGAINST PROMOTION (2)

In order to get into the picture about the role which crafts and small-scale industries may play in the process of economic development in the region certain arguments of an economic, social and political nature are brought forward for and against the measures of promotion both in Tanzania and in this region in particular.

Arguments in Favour of Promotion

Among the economic arguments in favour of promotion of crafts and small scale industries it is often stated that the returns from heavily capitalised industries, on account of their more complicated organization and longer development process period, are generally much slowly realized than those of crafts and small scale industries, and the likelihood of quick returns is obviously an important consideration in determining the order of priority in countries where the rate of capital formation is low. Another argument usually makes the assumption that production in small firms is more labour intensive (in terms of the capital-labour ratio) and that the economies in developing countries are characterized by a structural disequilibrium at the factor level, involving scarce capital and redundant labour. Here, favouring small enterprises rather than large would help to correct this disequilibrium, because more workers could be employed with a given amount of capital. Further it is stated that an important role of crafts and small-scale industries is that of ancillary suppliers to large industries, and that often large units are only able to operate economically because of the services and supplies which they receive from the small-scale business sector. Some further points are: small enterprises have special adaptability to varying production and market conditions, elasticity in technical and economic organization; they provide ideal training grounds for entrepreneurship and management, and finally mobilise hidden or idle financial resources.

Apart from these economic reasons, which favour crafts and small-scale industries, these are said to confer a number of social advantages. Here, the main argument - assuming the crafts and small-scale units are widely dispersed in the country and need no concentration - is the adverse effect of large scale industries in big towns, and their attendant evils.

Moreover, it is argued, the spread of crafts and small-scale industries in town and country will assist the whole population to grow accustomed to conditions of life in a more industrialized community, without causing any sudden break with their traditions and previous way of life.

Among the political arguments in favour of promotion one fact stressed is that the establishment of large scale industries in the capital city, and perhaps in one or two other urban centres, must aggravate, in the popular conception, the differences in status between the rural areas and the large towns; an even distribution of small enterprise throughout the country may show the population that the government's concern is for the welfare of all, and is not merely confined to urban dwellers.

Arguments against Promotion

The labour absorption argument is the principal object of criticism by economists, who feel that this approach is in fact a "better distribution" argument ⁽³⁾. Hence new components are introduced which make the labour-absorption argument subject to certain premises, or only when considered in another light. As for the capital-saving argument, one of the strongest arguments brought forward against it is that the effect is to reduce savings by increasing labour's share of income. But even a higher capital-output ratio may in the long run imply slower growth and higher unemployment because of the lower propensity to save, if it be supposed that under these circumstances the secular rate of capital formation lags behind the increase in the labour supply.

In evaluation of the contribution made by crafts and small-scale industries towards social development it is claimed that, on the average, workers on large-scale industries are better off than those in small enterprises, and are less "exploited". They usually receive better wages, have shorter working hours and better social security facilities. The arguments for "decentralization" brought forward in favour of small enterprises (as opposed to overpopulation effect caused by large-scale industrialization) is countered by the argument that most of these enterprises are settled in any case in urban centres, and that any generally applied promotion would produce only a negligible effect by way of halting the drift from the land to the towns.

Since crafts and small-scale industries contribute a high percentage of "self employment" it is argued that, on the whole, there is probably less political stability in countries where this "self-employment" is prevalent than in those where the bulk of industry is organized in large-scale enterprises. In addition, - and this refers to the "equality" argument - the total volume of savings and taxes which is generated by a large number of small incomes is almost inevitably smaller than the volume generated by an equal total income in the hands of a smaller number of people. Also, since small firms are generally not as technically progressive as large firms, the choice of greater present equality may hinder the rapid growth of the economy and hence postpone the attainment of higher standards of living for the whole population of the future.

Importance of Promotion in Tanzania and this region

From these pros and cons quite different conclusions may be drawn as to the applicability of arguments in the case of Tanzania or this region in particular. It will probably not be possible to make a clear-cut decision in favour of either small - or large scale industries based on both economic and social considerations, because it is difficult to assess the importance of economic and non-economic objectives as well as because of the dearth of

factual information on which to base an economic analysis. The decision taken would depend, on the individual point of view of the consumer.

Yet even if special efforts to assist the development of Tanzania's crafts and small-scale industries may be justified on economic and social grounds, these pale into insignificance when compared to the case for such promotion on political grounds. To a very considerable degree it is true that Tanzania's future industrial entrepreneurs can only emerge from the nuclei of small enterprises, be they workshops of craftsmen, or small-scale industries or retail and wholesale enterprises. Needless to say, this refers mainly to the African Tanzanian, since most established industrial ventures, particularly the large ones, are the result of overseas initiative, and even the smaller establishments are almost entirely owned by non-Africans - especially Asians. But the situation where the industrialists' functions are confined to the non-African population is quite untenable for political reasons, especially if the future economic development of Tanzania is to take place within the framework of the newly conceived policy of "self reliance".

There can be no doubt that large scale industries do contribute a considerable share to Tanzania's economic development, and stressing the role of small-scale entrepreneurship is not intended to deny the importance of large enterprises. The point is that one of the most important means to create future African industrialists - who are at present non-existent in Tanzania - will be to foster the small entrepreneurs. Aside from small businessmen, the craftsmen must make up the core from which future Tanzanian industrialists can emerge, and to this end they must be trained and supported adequately. It certainly is true that 'each and every major occupational group has contributed entrepreneurial talents and carriers of economic development as Redlich ⁽⁴⁾ has stated; and it seems natural that craftsmen, who often contribute an immense store of know-how and technical ingenuity, may also provide future industrialists in Tanzania - as they did,

for example in Nigeria - (out of 300 firms, for instance, covered in a multi-industry survey in Nigeria, 68% were established by former journey-men (5).

13.5.1 TANZANIA GOVERNMENT'S POLICY CONCERNING SMALL INDUSTRIES

For a long time, there has been a tendency to neglect traditional and small-scale industries like the making of baskets, mats, pots, local beads and carvings. This neglect was a result of the colonial policy towards the indigenous culture so that preference could be given to the European commodities.

Industrial strategy evolving from this historical context naturally placed greater priority on big industries both in this region and elsewhere. There is in addition the fascination of mass production and smoking chimneys; and yet proper industrial development has to take into account the total local resources Tanzania possesses in terms of raw materials and skills. When this is done, the logic of emphasis of small-scale industries is easily seen.

Regional and District Development Committees have been called upon to work out, through their economic sub-committees, concrete plans for the establishment and development of small scale industries in their respective areas. In this region some progress has been achieved in this respect, ^{and} in the annual plan for 1973/74 some funds were set aside to assist the development of new small scale industries. Among the bodies to assist this move are NDC. The Tanzania Wood Industry (TWICO), Natil Textiles Industries (Natex), National Union of Traders Association.

The policy statement from the government in 1973 called for *the* establishment of a government board or division charged with the promotion of small scale industries in the country and this was subsequently formed. Among its functions are the provision of services related to project appraisals, plant needs, operational skills, technical advice and management

of small-scale industries.

The policy statement also calls, when the need will arise, for the establishment of a central marketing institution for goods produced for the export market.

The small-scale industries are expected to remove the differences that now exist between rural and urban areas. Besides bringing basic improvements to the village the industries will help to lower prices of the various commodities because there will be a distribution of labour between the small-scale industries and the major industries in town.

The potential for the establishment of these small-scale industries is virtually unlimited: Tanzania's and this Region's agriculture is producing crops that want simple processing. Natural resources such as forests and minerals exist that lend themselves into raw material to feed small scale plants with a view to divisional, district and regional markets and the very size of the small-scale concern simplifies the tasks of work organization, management and marketing.

These same factors however make it imperative that the initiative to start the ventures come from the people in the rural areas. Additionally it makes it crucial that the enterprises be owned and controlled by the people themselves in the case of industries in Ujamaa villages. With good planning and implementation the government policy directive places the nation in a position to make a breakthrough in the establishment of small scale industries to meet many local needs. These industries will help the country's agriculture at the same time as they strengthen the country's base for industrialization.

An Industrial Estate Programme to assist co-operative and ujamaa groups in setting up small manufacturing industries in six regions, Arusha being one of them, was launched by the National Small Industries Corporation (NSIC) at a cost of 11 mil. shs.

The NSIC is in a process of developing several industrial estates in Dar, Songea, Tanga, Morogoro, Shinyanga and in this region, Arusha. The major fields of manufacture envisaged were processing of items such as fruits and cereals, wood and metal sheets, textiles and leather consumer products, light engineering goods and industrial components.

A common facilities centre equipped with a repair shop, storage, canteen and other utilities would be available in each estate.

Technical assistance and help in purchasing, marketing, administration and the preparation of initial feasibility studies would be provided by the NSIC. Assistance in the procurement, installation and training in the respective types of machinery and equipment would be provided from the corporation funds. Units would be rented to the manufacturing enterprises at 'reasonable rents'. Such a scheme would protect the artisans from exploitation and give them organized assistance. In the light of the above discussion, attention is now turned to the Study Region to see the progress so far made in this direction and the potential for the growth of the small-scale industry.

13.5.2. THE SITUATION OF CRAFTS AND SMALL-SCALE INDUSTRIES IN THE REGION.

There are at present several woodwork, handicrafts, motor mechanics, shoe making, baking, motor workshop and tannery establishments in the region, some in the town and a few in the rural areas. Currently, there are 277 crafts in the region and 11 small-scale industries; Moshi town has more of these establishments than Arusha (see Table 72).

As to the structure of the crafts and small-scale industries the main characteristics are:-

- In terms of number of establishments, shoe makers, cobblers and motor mechanics represent the two most important trades, each trade representing about an average of 15 establishments. Woodworks and

sheet metal works follow with about 12 establishments each. The other industrial activities are very poorly represented e.g. agricultural and plant repairing, watch repairing, gold and silversmiths.

- Most of the industries are located in the urban areas of Moshi and Arusha, Babati, Same and Mbulu. Very few small scale industries are located in the rural areas except a few crafts like bicycle repairs, watch repairs, tailors, carpenters and the like. Only recently have there been a few new industries introduced in the rural areas, one of which is the Mwika Industrial Workshop in the rural heartland of Kilimanjaro District (more about this below). The traditional and the new services in the rural areas do not survive much because of the limited market in the rural areas and lack of raw materials. Given incentive and organization especially in the Kilimanjaro and Arusha district areas, much can be reaped from new small scale industries because the incentive is there and the labour force is also abundant.
- Efforts to encourage the Masai and Meru beaders to form co-op establishments will result in this craft increasing its output and the sales of its products especially to tourists, doubled. The Pare are experts at making pots because the soil in their district is suitable for this craft. At the moment their pots sell only around the Mountain, but if well organized, production could be stepped up and with proper marketing channels these could sell in other parts of the country, thus bringing them money which will raise their standard of living.

In the towns the number of Africans in these trades is about equal that of non-Africans, who are mostly Asians. Some of these are the people classified as working in the informal sector of industry. There are considerable differences as to the trades preferred by the two groups: There

are almost twice as many non-Africans engaged in motor vehicle repair enterprises as Africans, but less than half as many in sheet metal works. Other fields of African dominance are woodworking, watch repair, barber shops and butchery. Non-Africans on the contrary prefer such trades as letterpress printing, baking and goldsmith.

Workshops of independent craftsmen have on the average three employees, and small scale industries about ten. Taking the estimated total number of craftsmen into account, the extrapolated regional number of employees amounts to between 950 and 1,500. The average employment per firm varies of course considerably from trade to trade; among the top are motor mechanics (10), letterpress printers (10), and bakers (9), followed by electricians and goldsmiths, each trade employing 5 persons in the average. In all these trades non-Africans - mostly Asians - predominate.

TABLE 22 NUMBER AND ACTIVITIES OF ESTABLISHMENTS IN THE REGION - 1967

	<u>Trade and Industry</u>	<u>Moshi</u>	<u>Arusha</u>
CRAFTS	Agricultural Plant repairers	-	1
	Bakers	4	5
	Bicycle Repairers	2	-
	Barbers	9	4
	Butchers	4	-
	Electricians	4	1
	Shoemakers, cobblers	18	12
	Letterpress printers	3	1
	Motor Mechanics	17	13
	Photo Technicians	3	-
	Sheet metal works/tinsmiths	8	2
	Tailors	14	8
	Watch Repairers	1	-
	Woodworks, carpenters	20	16
	<u>Other crafts</u>	<u>2</u>	<u>5</u>

Ctd.

Total Crafts	109	68
SMALL SCALE INDUSTRIES	7	4
TOTAL:	116	72

Note: In all the above crafts there are numerous number of people who work on individual basis, e.g. barbers, watch repairers etc. and these are not reflected in the figures above.

A number of these small enterprises are hampered in their development by the lack of capital and credit facilities especially when starting. Apart from getting help from relatives and other sources a new supply of credit from a semi-official source has been provided by the NSIC, which since 1967 has offered machinery on hire purchase to small scale industrial entrepreneurs and craftsmen and thus smoothes the way to entrepreneurial independence, especially for the African craftsman, who is mostly the one to suffer from financial shortcomings, the Asian craftsman being able largely to rely on kinsmen belonging to the extended family.

At present in Moshi town, there are plans to open 8 industrial workshops which would secure a number of small scale manufacturing units. This plan will help to ease the unemployment problem in this area.

In the rural areas in Moshi a model small scale industry has been established at Mwika (Mwika Industrial Workshop). The workshop started with a 100.00/- grant aid from the W. Germany Government. It is run by two German volunteer teachers and among its activities include carpentry, smithy, radio repair, tailoring, welding etc.

Most of the people who complete their training at this workshop continue working in the factory and a few filter into established industries. The problem here is the lack of markets for the items produced eg. lamp sheds, metal doors, tables, chairs etc. There are plans to get NSIC find a market for its products in the future. With proper management and availability

of a market for its products, this factory will prosper - engaging some of the hundreds of school leavers around the area without work or further education.

Other small-scale industries are Jamhuri and Himo Tanneries in Moshi District, started eight years ago. Both are involved in the tanning of leather and with Jamhuri making sole leather. In 1972 leather produced here amounted to 17,849 kilogrammes valued at 124,943/-. The Himo tannery makes shoe uppers and sole leather and in 1972/73 the value of its leather was 876,752/-(6). There is also another tannery at Mkuu - Rombo. The problems facing this industry is ^{only} the shortage of tanning chemicals only as the market for its products is plentiful at the moment.

Other rural small scale industries and crafts include: carpentry workshops at Mkuu, Masasani; Mamba Mkolowoni and at Marangu - Samanga; Metalworks at Mamba Kisambo - making windows, doors and frames; Bread and confectionary at Mashati Rombo and at Same there are these ~~these~~ following industries - bread and confectionary; metal works - making steel windows, door frames and vono beds and tables.

In Moshi town, ⁱⁿ the 1973/74 period there ~~were~~ plans to establish small scale industries at Kiboroloni (machinery, and engineering), Uru (shoemaking), Pare (engineering works) and at Kiko-Pare (charcoal burning). These projects were estimated to cost 3.6 million shillings (6).

Arusha has also participated in the new venture of small scale industries programme of NSIC. The projects for Arusha in the ending Five-Year Plan were: a wood and metal workshop employing 15 people; bamboo products (5 employees); sack, truck and hand trolley production (25 people) and an elephant ivory industry employing 55 people. It was expected that the gross output from this investment of 1.6 mil. shs. would be 2.5 mil. shs. value of products when the industries are fully established and working successfully.

In the other towns of Babati, Mbulu and Mto wa Mbu there are several small scale industries dealing with a wide range of crafts - e.g basket-making, smithy, carpentry etc. With further assistance more people can be absorbed into these industries and hence alleviate the unemployment problem.

13.6. INDUSTRIAL EDUCATION AND TRAINING

Within the region the Moshi Technical Secondary School specializes in training pupils in various crafts - masonry, carpentry, mechanical engineering, etc. The students who complete their training here join the various industries in the region and elsewhere in the country. Their contribution to the small scale industries is very great because they provide the technical know-how. For those who want to go for further training in their respective fields can go to Dar Technical College or Ifunda. These Colleges provide the country with technicians who are in very high demand.

At present there are two technical schools being built in the region - one at Arusha and another at Mandaka - Moshi. The primary aim of these technical schools is to train technicians especially the pupils who finished Std. VII, but have had no luck to proceed for further education in the secondary schools. The aim of these technical institutes is to train enough manpower to get the small scale industrial programme off the ground. Various crafts and industries will be taught to meet all sorts of needs in the rural areas.

SUMMARY: SMALL SCALE INDUSTRIES

It is thus apparent that all sorts of efforts are being taken to encourage the establishment of small scale industries in the region especially in the rural areas. Tremendous potential exists particularly in the Kilimanjaro and Arusha districts where the raw materials are easily available. The only constraints here are lack of technical skills, markets

and proper management, but these may also be overcome in the future.

The advantage of small-scale industries in these rural or urban areas are those in favour of introducing intermediate technology. These are that: they employ those people who do not get employment in the big industries; secondly, the large scale sector requires an average four times the amount of capital expenditure for any level of output compared to small scale industries; thirdly, the small scale units are in general far more widely scattered and can be integrated into the rural communities using local raw materials and labour. The capital saving simply not only brings in investment, but also in associated cost of high level manpower, spares, machinery maintenance, replacement, and infrastructural facilities to support complex technology and handle the bulk supplies and marketing. Most of these incur also foreign expenditure.

In addition, the small industrial sector, especially when located rurally, can obtain the advantage of self help capital construction such as buildings for factory or workshop, kilns, irrigation and drainage roads and other civil works which fall outside the cash investment budget and can lower the monetary cost of development further while making an important contribution to the rural economy, rural integration, and balanced development, preventing the disastrous population influxes into the regional urban areas particularly Moshi and Arusha. This can be one of the measures to check the rapid movement of the people from around Mt. Kilimanjaro to the towns. Overall, small scale industries may therefore be able to significantly increase the production potential of the region, and alter the structure of the economy.

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CHAPTER 14

THE CONSTRUCTION INDUSTRY IN THE REGION

General Analysis

As expected the construction industry is mostly concentrated in the urban areas where most building activities are taking place - e.g. public works - roads, hospitals, schools and L.A. housing; private building activities - like housing, factories and the building of commercial premises.

The industry employs well over five thousand workers most of whom are employed in the major towns. For example, in 1967 there were 1,390 and 1,380 employees in this trade in the Arusha and Moshi towns respectively. This was followed by Arusha and Kilimanjaro Districts with 1,610 and 1,850 employees respectively. Very little building activity has been happening in the Masai district.

The majority of the building activities here include the construction of L.A. buildings e.g. schools, clinics, health centres, teachers and nurses residential houses etc. In the private sector the major building activity include the building of mission churches and its associated buildings - social or church halls, schools, other religious houses and residential houses for the clergy and nuns and their workers.

In addition, a lot of builders are now engaged in building private houses for individuals especially in the area around the mountain - Moshi and Arusha rural areas. A good proportion of the families in this area are

fairly affluent now and are building modern houses to replace some of the traditional houses.

In contrast to the towns, most of the builders here are Africans; brick layers, masons, carpenters, roofing experts, plasterers etc. Although they do not get an equivalent amount of money as their counter-parts in the towns, they still prefer to work in the rural areas since they can save more, at the same time serving their families and some work in their farms during the off-peak period.

As said earlier, hardly any building activity is taking place in Masai area. The only building activity, is for constructing cattle dips or local authority services and infrastructure. This is due to the fact that the Masai build temporary shelters and keep moving on looking for better grazing land. However, some are now beginning to settle down to do some farming.

The Building Industry in the Urban Areas

Most of the building activity in the urban areas is carried out by professional contractors, who in most cases are Europeans or Asians employing African labour.

In the past five years, Arusha and Moshi have experienced a lot of building activity, firstly in the building of the international Airport at Sanya Juu including its supporting services (especially staff housing) and for Arusha the building of the East African Headquarters for the Community has dominated most of the building activity. Most of the work currently is on building its offices near the Town Hall and also several residential houses for the employees some of whom are now temporarily housed in various parts of the town - some in Tengeru.

Another sector encouraging the building industry is the tourist industry. Currently the building of the Meru Hotel at Arusha is in progress

and other small contracts for this industry have been or are being implemented. These include the building of the tourist lodges in the National Parks, access roads to them etc. With the tourist industry showing signs of increasing, this means good prospects for the building industry.

In addition, residential building activity by the National Housing Authority has been increasing to meet the ever growing shortage of houses in the urban areas. New residential areas have been built on the western part of Moshi and in Arusha, similar development has taken place especially late in the 1960's. Now residential buildings for letting or selling in the private sector has dropped dramatically since the government's move to nationalize private buildings to let. .. The effect of the above move has resulted in very low investment (private) in the residential building sector for fear of nationalization again. However, the government has stepped in to encourage citizens to build their own houses by granting a long term-low-payment loans for home building. Although very few people came for these loans at first, now the number has increased as the housing problem continues to be acute.

TABLE 73 BUILDINGS COMPLETED FOR PRIVATE OWNERSHIP IN THE TOWNS OF MOSHI AND ARUSHA. 1966-69.

<u>Town</u>	<u>Year</u>	<u>Floor Area in '000 sq.ft.</u>		<u>Total</u>	<u>Total cost mil. shs.</u>
		<u>Residential</u>	<u>Non-res'l</u>		
ARUSHA	1966	11	11	22	1.0
	1967	35	248	283	11.6
	1968	47	36	83	2.2
	1969	34	8	42	1.7
MOSHI	1966	39	20	59	1.8
	1967	43	16	59	1.8
	1968	88	103	191	6.8
	1969	70	80	150	4.1

Source: District Data. 1967.

The Main Building Materials

In the urban areas and to some extent in the rural areas, the main building materials include the conventional materials like cement and sand bricks, concrete, iron and steel, corrugated iron sheets for roofing and wood. Only in a few cases are items like tiles or local materials used.

On the other hand, in the rural areas, apart from using some of the above materials, they use local building materials like mud and wattle; mud and tree poles/sticks; mud bricks, local building stones; grass thatches (e.g. use of banana stems and leaves for thatching houses in the Kilimanjaro/Meru area, or use of dry grass for thatching both here, Pare and in other areas) etc. The Masai combine grass and cow dung for thatching their houses, since these commodities are in abundance.

In the Kilimanjaro area, and some parts of Arusha and Pare most of the private houses are now built mostly of cement and sand bricks and are roofed with corrugated iron roofs although clay tiles would be the best in so far as the climate is concerned.

Sand is plentiful, for it comes from the numerous rivers in the area and local building stones are also in abundance. This means that building a decent house in the rural area is possible without incurring a lot of expense.

The government is now encouraging local builders to use local building materials to save unnecessary expense in using imported materials and also to boost up the local building materials industry. Some of these local materials include clay bricks instead of cement and sand bricks, wood frames and doors instead of steel frames etc. Cement is now very expensive and scarce since much of it goes to build the new capital development at Dodoma and other large engineering projects like the building of dam walls, hydro-electric schemes etc. There are tremendous reserves for most of these local materials in the region - clay is in abundance for

roofing and for bricks, wood - for building poles and timber and local stones and gravel. Further details on this will be discussed on the section on housing. It is worth noting here that, the type of building materials used in particular areas will depend on the availability of that type of materials available locally there. The use of such materials will not only save time but money.

Assumed Growth of the Building Industry

Certainly, the construction industry has a very big potential in this region both in the public sector and in the private sector. The progress both in the urban and rural areas - especially in the Kilimanjaro/Arusha area will boost this industry and keep a number of people employed. The expectation is that this industry will grow at the rate of 7% p.a. in order to meet the demand for building in the region.

CHAPTER 15

COMMERCIAL SERVICES

SECTION (A): COMMERCE AND TRADE

INTRODUCTION

Problems facing Trade and Commerce in the Region

Trade as a link between producers and consumers primarily results, in the forms and structures which it from time to time assumes, from exogenous influences. The regions, or the country's state of industrialization, its dependence on exports or on imports, the population's living standard, the region's geographical structure and - not least - the government's political ideas all set their stamp on trade.

The specific circumstances of this region, in so far as they affect trade and commerce, can be outlined as follows:-

This region is one of Tanzania's alllandlocked regions, with all the disadvantages resulting from that fact. Its chief port of supply is Tanga which is fairly well connected by both rail and road. Apart from this, other

ports are Dar es Salaam and Mombasa (Kenya). Due to the great distances involved the region's import and export trade has difficulties and risks of a technical, economic and sometimes, in the case of Kenya - political character.

Unusually great difficulties and risks of a technical nature result from the need to carry imports from the coast to the region using transport facilities which are in some cases inadequate. The one-track railway is for example, overloaded, and conforms to the technical standards of the last century (but still functions very well); the road to Mombasa is partially asphalted and the ports of Mombasa and even Tanga are overworked. From the economic point of view, this makes it much harder for traders to time their actions - an especially serious matter in the case of agricultural products; it increases the risk of these perishing, and the most important point - the increased cost of transport materially impairs exporter's ability to compete.

An over-accrual of crop to be transported, the lack of storage space, and also considerations in regard to sales policy are again the reasons for considerable bottlenecks in the transport of agricultural products.

The long distance roads are not always in good state. This long distance traffic industry shows the typical characteristics of a still young branch of economy, such as disregard of safety and insurance regulations, over-loading, the bad conditions of the means of transport vehicles, loss of goods during transport, non-observance of time-tables - in short, irregularities in goods traffic are deficiencies to be met everywhere. The entrustment of the goods to such firms therefore constitutes a great risk to the trading enterprises. Under such conditions it is no wonder that part of the trading enterprises prefer to take on the transport of goods themselves. Trading enterprises which have their function of bridging distance carried out by independent transport enterprises often have to put up with considerable disadvantages in

comparison with their competitors.

The central transport problem of the region, however, is the short-distance transport i.e. the transport of goods from the agricultural areas of production into the trading centres or to the traffic junctions, or, alternatively, the transport of consumer goods from the trading centres to the rural consumer markets.

On account of the bad condition of the approach roads considerable traffic impairments and losses often occur.

A short traffic industry practically only exists on the periphery of the major trading centres of Arusha, Moshi, Mbulu and Same. It reveals the same deficiencies as have already been mentioned in connection with the long-distance industry, the only difference being that they appear in a still more marked way here. This applies more particularly to the reliability and the regularity of the transport performance. More isolated areas are either not at all developed by the transport industry, or transports are offered so rarely and irregularly as to be useless for any leading enterprise. The worst hit areas are Masailand, some parts of Mbulu, Pare and Hamang districts. It is therefore quite obvious that under such circumstances the function of bridging distance space in short-distance transport has almost exclusively been taken over by the trading enterprises themselves, so much so that the taking-on of goods transport is rarely the basic prerequisite for the operation of a trading enterprise (1).

The low incomes as well as the purchasing power dispersed on account of the extensive manner of settlements are causing relatively small sizes of business in the retail trade of consumer goods. On the basis of statistical records and of investigations made by W. Kainzbauer in his study of the organization and structure of trade in Tanzania (2), the average turnover per annum of a retail business is estimated to be £1,500.

The Northern Region's consumer trade has to supply a population whose purchasing power is extremely low. In the towns the average income per gainfully active person is about 2,600/-, but in the rural areas it is at most 500/-. In the case of the rural population, who live on the production of coffee, sisal, maize and other produce, this income also fluctuates very widely according to the time of the year; outside the crop season there are few possibilities of earning, and accordingly little demand for goods.

These brief observations serve to show the difficulties which face firms trading in this region. The many people who criticise the sometimes inadequate efficiency of the existing trade system, as well as its high costs and wide profit margins, often overlook these facts. It is clear that the cause of the trouble lies not only in defective ability (of the African traders), and in excessive profit-seeking (by Asiatic and European businessmen), but also, and primarily, in conditions which are especially difficult by comparison with those in other regions or other countries.

15.1 DEVELOPMENT AND STRUCTURE OF THE TRADING SYSTEM IN THE REGION

Organized institutional trade in Tanzania and this region started about the turn of the century by Indians and Arabs. Up to the 1930's nearly all trade was in Asiatic hands later punctuated by Europeans and now Africans have just moved in. Very few Africans even today own big shops on the main business area of the towns of Moshi and Arusha. Up to the 1950's, the great majority of the African traders were widely spread in the rural areas outside the towns where government legislation had prevented the Asiatic people from penetrating into such areas. Town-trading, however, remained almost exclusively in the hands of Asians. There were no African wholesalers at all. The average size of African trading firms, that is the turnover per firm, was extremely small.

During the next two decades especially after Independence, the African traders greatly strengthened their position. They increasingly managed to

establish a footing in the larger towns of Moshi, Arusha and Same, especially in the periphery of the towns; but now has risen by as many a times as that of the Asiatic and European firms though their businesses are still very small. Government policy has been to increase and accelerate Africanization trade. The laissez-faire policy of the British administration on the trade sector had caused trade at the time of independence in very strong measure being vested in the hands of non-African minorities, i.e. Europeans and Indians, who, moreover, employed hardly any Africans in their trading enterprises ⁽³⁾. Although in 1961 more than two-thirds of all licensed dealers in the consumer goods trade in Tanzania were Africans, they concentrated upon themselves, however, hardly more than 20% of the turnover of the entire finished goods trade ⁽⁴⁾. The social tensions resulting from the opinion of the majority of being "taken advantage of" by a minority embodied a danger of continued economic progress. In agricultural trade, the African-ization is promoted by the establishment and advancement of marketing co-ops. In the finished goods trade, however, where, contrary to agricultural trade, African private trading enterprises occupy an important position, it is intended to achieve Africanization primarily via the consumer co-ops, since all efforts made to advance the African traders by training, counselling and granting of credits are not successful in a satisfactorily measure.

15.2 STRUCTURE: INSTITUTIONAL FORMS OF TRADE

The marketing situation in this region follows the Tanzanian pattern. Here, the marketing of industrial consumer and capital goods is performed almost exclusively by institutional trading enterprises. These are subdivided into private, state and co-operative trading establishments. The character of these institutions is as follows:-

Private Trading : (A mixture of both Africans and non-Africans especially Asians.) - The entrepreneurial policy is geared to the principle of maximizing the profits or to the appropriate yield of an income.

- The entrepreneurial policy is defined by the private owners of capital in accordance with the amount of their participation.

State Trading - includes government agents as the National Agricultural Products Board and the State Trading Company which has branches in the main towns of Moshi and Arusha and elsewhere.

- The entrepreneurial policy is defined by government. As a rule there is some participation with capital, but this should not be looked upon as necessary. State trading can take place in competition with private and co-operative forms of enterprise; it can, however, also be vested with certain privileges such as for instance, with a monopoly.

Co-operative Trading: (Main agent in the buying and selling of agricultural produce in the Region). Its features are:-

- Equal rights of members in defining the entrepreneurial policy. The amount of capital participation is irrelevant.
- Maximizing of profits of the members and lastly
- Self administration by the organs of the co-operative society. Details on this will appear on the section on Co-ops below.

15.3 RETAIL AND WHOLESALE TRADE IN THE REGION

The nature of the sales in the region appears to be geared primarily to the purchase of necessities, and very little to the purchase of luxury items. Stores are generally small and sell a variety of items. This results in small, inefficient establishments and leads not only to hardship to the owner but a general higher price structure. Given this market structure there is every indication that a more rational sales distribution would encourage more people to buy from local sources. This rationalization of markets, however, would also be labour-saving, and might not lead to substantial employment increases.

* These private entrepreneurs compete with parastatals and co-operative unions - black markets exist especially in transferring of crops from one district to another which has now been prohibited unless through the right channels. The majority of crops dealt with are vegetables and fruits since these commodities are not marketed by co-operatives.

Their future is rather uncertain as the co-operative movement is strengthening and diversifying its activities from pure marketing and buying to other activities.

According to the only statistics available, there were 4,281 traders (both retail and wholesale) in the Norther Region in 1961, with the Kilimanjaro sub-region having the greatest number of these. As expected, obviously the number has increased may be by half since then, and in the urban areas possibly the above number is almost doubled by now. Most of these traders are retailers who form 90% of the trading industry.

TABLE 74 TRADE AND COMMERCE: NUMBER OF TRADERS AND TYPE. 1961*

<u>TYPE OF TRADER</u>	<u>ARUSHA SUB-REGION</u>		<u>KILIMANJARO REGION</u>		<u>Total</u>
	<u>No.</u>	<u>% of Tanzania</u>	<u>No.</u>	<u>% of Tanzania</u>	
Wholesalers	117	3.0	137	3.5	254
Retailers	1591	3.5	2436	5.8	4027
TOTAL	1708	6.5	2573	9.3	4281

Source: District Data 1967. pp. 4 and 28. op. cit.

* Figures are a bit out of date - recent figures not available.

Distribution of Traders by Districts, 1961.

The distribution of traders by districts again shows that wholesalers are concentrated mostly in Kilimanjaro, then followed by Arusha/Meru and Mbulu district, Pare and Masai come the lowest. Again as far as the distribution of retailers is concerned, Kilimanjaro comes at the top followed this time by Pare and Mbulu districts. Arusha and Masai Districts

come the lowest. (Table 75). This distribution pattern is a direct result of the population distribution - hence where the population is highest - e.g. the Kilimanjaro area, the number of retailers is also high. Again the relative wealth of the people on the mountain encourages more traders here since their chances of making a higher profit are better.

The districts with the highest population per trader are Kilimanjaro 385 and Masai 291 compared with Arusha with 152 or Pare with 129 inhabitants per trader. The Masai figure is high because the number of traders here is small in relation to the number of inhabitants. The wide distribution of the population here makes it rather difficult for traders to carry on their business satisfactorily.

TABLE 75 DISTRIBUTION OF TRADERS BY DISTRICTS, 1961.

<u>District</u>	<u>Wholesalers</u>		<u>Retailers and Others</u>		<u>Total</u>	<u>Inhabs. per Trader</u>
	<u>No.</u>	<u>% of Region</u>	<u>No.</u>	<u>% of Region</u>		
<u>ARUSHA REGION</u>						
Arusha/Meru	107	91	278	55	980	152
Masai	3	3	220	31	223	291
Mbulu	7	6	498	14	505	385
<u>KILIMAN'RO REGION</u>						
Kilimanjaro	132	96	1598	66	1736	211
Pare	5	4	838	34	843	129

Source: District Data 1967 - op.cit.

15.3.1. THE WHOLESALE TRADE

The independent wholesaler occupies a central position in the total distribution system in the region as well as in Tanzania. Although some distribution organizations are run by local producers, these also almost without exception make use of the services of independent wholesale firms, giving them the status of agents - often with the sole rights of distribution. Only very few industrial firms keep delivery depots of their own.

The preponderant number of wholesale concerns in the region, as in the rest of Tanzania, also conduct business with the ultimate consumer, and in a case of a considerable part - if not the majority of them - the retail turnover may be higher than the wholesale turnover.

The wholesalers in the region are mostly located in the main towns of Moshi, Arusha and Same. These dealers sell either directly to the larger retail firms, or to semi-wholesalers (i.e. combined retailers and wholesalers), in the adjoining minor towns and trading centres e.g. Mbulu, Babati, Oldeani, Mto wa Mbu, Himo etc. At these latter places the goods are bought by the proprietors of small dukas (small retail shops) in the remote trading centres; such people's demand is in most cases very small and it would therefore not be worth their while to make purchasing expeditions to the nearest district capital. Some goods pass through as many as four wholesale stages before they reach the retailer and the point of ultimate sale.

In the towns of Moshi and Arusha with the rich hinterlands it has been found by W. Kainzbauer ⁽⁵⁾ that the approximate size of wholesale firms had an annual turnover of £200,000 to £300,000, compared with the majority of wholesale enterprises in other towns of Tanzania which achieve turnovers in the amount of £80,000 - £150,000. The turnover semi-wholesale in the towns are between £15,000 - £25,000.

The large and medium sized wholesale enterprises are exclusively Indian family enterprises. In the former years, there existed some European enterprises on this trading level, which, however, could not hold out against the strong competition and have disappeared during the course of time. Even semi-wholesale businesses were conducted by Indians. African participation in this trade is still very limited, but now the Asian businessmen find that the State Trading Corporation has taken over his role as a wholesaler and middlemen and their future role is very uncertain.

The Indian management of the firms leaves much to be desired with regard to wholesale and semi-wholesale trading. Market-conscious thinking as well as up to date management methods are practically unknown. Some of the goods they deal in include food, beverages and tobacco, shirts, shoes, pharmaceuticals and cosmetics, stationery, radios, blankets, etc.

15.3.2. RETAIL TRADE

According to 1967 figures, there were 689 retail shops in the urban areas of Moshi and Arusha and may be half of the above or more were in the minor centres of Same, Mbulu, Himo, Babati, Oldeani, Karatu, Monduli, etc.

Well over half of the urban shops sell food and beverages, followed by goods like clothing and footwear, household goods and an assortment of other items. There is a slightly higher number of retail shops in Moshi town than Arusha on account of its richer and bigger hinterland and higher population. Although figures relating to retail shops in the rural areas are not available it is a known fact that there are several hundred small shops scattered in the rural areas especially in the Kilimanjaro rural area, Arusha/Meru area and Mbulu. In the case of the Masai area, the only few shops are located along the main transport routes or the main settlement areas.

TABLE 76 NUMBER OF RETAIL SHOPS IN THE REGIONAL CENTRES BY TYPE OF
GOODS IN THE SHOP, 1967.

<u>REGIONAL CENTRE</u>	<u>Type of Shop*</u>							<u>Total</u>	<u>Shops per '000</u> <u>Inhabitants</u>
	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>		
Arusha	198	14	63	4	14	16	7	316	9.8
Moshi	171	36	104	21	27	6	8	373	13.5
TOTAL	369	50	167	25	41	22	15	689	11.6

- * Key
- (a) Food and beverages (food, alcohol and tobacco)
 - (b) Household Goods
 - (c) Clothing and Footwear
 - (d) Health (toilet articles, perfumes, cosmetics, medicines, glasses..
 - (e) Education and Recreation, (book stores, optical goods, photo equipment)..
 - (f) Transport (motor vehicles and bicycles, filling and service stations).
 - (g) Others

Source: District Data 1967. pp. 4 and 28.

Urban Retail Shops (without town dukas)

These are large retail shops (turnover between £1,500 and £5,000) serving mostly the small number of Europeans and other town dwellers who are earning high salaries. Although small in number, their influence is considerable especially with a view to the future development here.

These urban retail shops are located in the towns of Arusha and Moshi and are in part using modern management methods and merchandising techniques; in their case also building up of specialized range of goods is relatively advanced. A specialization of the range of goods carried occurs as a key point in the case of foodstuffs, textiles as well as drugs, pharmaceuticals and cosmetics. The range of goods carried by the urban retail business generally comprise qualitatively high value goods and demonstrate in each range of goods an astonishing breadth and depth.

The turnovers of these enterprises are between £20,000 - £100,000. The future of such shops is bright as more and more Africans earn higher incomes and hence are able to buy more and better goods for their living.

Urban and Rural Dukas (the small shops)

The preponderant number of retail enterprises in the region are so-called duka enterprises (derived from the Indian Dukawala). (turnover

approximately £1,000). A typical characteristic of these duka enterprises is the wide range of goods carried, geared to the daily requirements of the African population. Only in the town shops specializing in food can sporadically be found, including luxury food, beverages and tobacco, fabrics sold by the yard etc. Generally, the composition of the range of the goods stocked conforms with that of the rural general dealers in Europe, with the only difference that this range in the various categories does not reveal the same breadth and depth on account of the considerably simpler requirements of the population of the region. Such enterprises can be found not only in the rural areas but in the towns.

In Arusha, the majority of the shops are located in the four major areas of commercial activity: the Clock Tower area, the main market area in Majengo, Uhuru Road, in ^dMakani and a newer area farther out along Uhuru Road, in the Tingatinga area.

Other commercial activity in the town and in settled area nearby consists of miscellaneous shops, dukas and temporary markets. The small shops and dukas are typically located at street corners throughout the bigger density residential areas in town and in the villages that were built outside the old town boundaries. Temporary markets tend to spring up on empty plots along the major footpaths leading to town, and have shown increased activity recently ⁽⁶⁾.

In Moshi, the majority of shops and dukas are located in the major commercial area along the main high streets of Uhuru, Kibo and Mawenzi. Other shops are found in the main satellite areas of Majengo, Pasua and Kiboroloni. As in the case of Arusha, in these minor commercial areas shops are located in street corners. The main shops on the main high street are owned mostly by Asians who also have living quarters above the shops. Very few new shops have been added for a very long time in the town.

In the other towns there is only one main shopping street supported by a few shops in side streets or markets.

Future commercial land requirements in all these towns can, for the most part, be accommodated through expansion and intensification of activity within the existing centres along with the kind of local commercial development typically accompanying the formation of new residential neighbourhoods in the regional centres of Arusha and Moshi.

Most of the shops in the rural areas are not specialized and carry goods such as food, textiles, household articles, tools and medicines etc. These shops are located mostly on market places - of which there are numerous in the region; along cross roads, in other small trading centres; in places near schools, colleges, churches, beerhalls etc. Employment in such shops is small, for example, one person per shop and even this one person may be doing it part time - the rest of the time spent in the farm. Profits are extremely low in most of these shops.

15.4. ITINERANT TRADE

This trade is mostly associated with the towns. The by far predominating part of the peddlers and hawkers are Africans. From a view point of their function and their range of goods carried, they can be subdivided into two categories:-

- (a) Street traders and hawkers with agricultural products - mostly fruit and vegetables - as well as fish.

They supply the regional urban population as well as the rural population, which has already more closely assimilated itself to financial economy.

- (b) Hawkers with finished industrial goods, either calling upon the rural population in the villages and smaller settlements, or offering the goods on local consumer markets. Their range of goods carried is mainly made up of articles being able to support higher profit margins than the standard goods normally stocked by the stationary trading enterprises. In general they

carry clothing, cheap jewellery, haberdashery as well as small household articles. As a means of transport these traders generally use a bicycle or an omnibus.

A regional breakdown of peddlers shows that they are chiefly to be found in districts with a comparatively high density of settlement as well as a population with high purchasing power. Thus, these are numerous in the densely populated "rich" areas of Kilimanjaro and some parts of Arusha in the vicinity of the town. In districts underdeveloped in respect of trading facilities - e.g. Masai, no itinerant traders, or only a few of them exist.

In the towns of Moshi and Arusha, the number of peddlers is very high. These not only present problems of housing but also of providing services. They normally live in very poor conditions with some sleeping rough at the bus stations, shop or business verandahs, open grounds in the town, town parks etc. A few of them also engage in petty theft or in gang thefts and similar actions. Action is needed either to house these people in decent houses or send them back to ujamaa villages where their contribution to the regional growth is expected to be higher. In addition, such people could work in small scale industries if ^{these are} started in the region.

15.5. PRODUCE MARKET

All the service centres in the region have some form of produce market. These are administered by the local authorities, and in the case of the towns by the Town Councils. Moshi town has two markets - one selling food stuffs and another selling hardware and clothing. Arusha too, has a modern market in the town. There are numerous other consumer markets in the rural areas.

Most of these markets meet two or three times a week with the large ones meeting daily. Attendance at these markets ranges from 300 to over 1,000 people and generate considerable economic activity. These markets

are located on transportation routes and have a good bus service facility. Together with the shopping facilities they form the main core and hub of activity of a service centre.

It is these two services that are mainly responsible for attracting other services such as schools, dispensaries, police posts, postal services, petrol stations etc. which eventually build up to a market or rural centre. In the past the produce market based mainly on a barter economy played a significant role. Even today, with a change to a cash economy the produce market still plays an important economic function. It may be expected, however, that in the future, with the further spread of the cash economy, and the demand by more and more people for better services as the standard of living increases, that it will be necessary to build shopping centres with ancillary facilities to supplement the present form of produce markets in the region. If a growth policy strategy is adopted, these market centres will form the nucleus of rural development since service investment will start from this level.

Conclusion

- (a) As expected the main commercial areas are located in the main regional towns of Arusha, Moshi and to some extent Same and Mbulu.
- (b) Both retail and wholesale trade prospers well in the urban areas, whereas in the rural areas only retail trade plays a major role in supplying goods to the inhabitants. Their future prospects is very high as the population grows and per capita income rises.
- (c) The best served areas, both by retailers and wholesalers are the districts of Kilimanjaro and Arusha, Masai district comes off worst, This is an area where action is needed.
- (d) African participation in the wholesale trade should be encouraged in both towns.

- (e) The buying and selling of agricultural produce by the co-ops and the State Trading Corporation and other agencies is very efficient and helps in the marketing of the crops grown here. The role of the co-operative movement in buying and selling of agricultural produce will be discussed in the next section and its role in spearheading rural development will also emerge in this discussion.

SECTION 8. THE CO-OPERATIVE MOVEMENT AND ROLE PLAYED IN SPEARHEADING RURAL PROGRESS

Introduction

Organizations arise where there is a need for collective action to achieve higher goals. Their structural and organizational forms as well as their operational strategies depend on a number of variables, including the nature and urgency of the goals to be achieved and the socio-political environment in which they operate. In this region, the co-operative movement has played a great role both in rural and urban development and their potential to further Tanzania's policies of ujamaa is great. This section will analyse the type of societies there are in the region, their role in rural development and the future of this movement.

15.6. TYPES OF CO-OPERATIVE SOCIETIES

Co-operative societies in the region fall into the following categories:-

- (1) Primary Societies which deal with the sale of agricultural produce dealt with by the actual Co-operative Society
- K.N.C.U.; ARCU of VUASU. Currently there are 78 primary societies in the region with more than half located in the Kilimanjaro sub-region.
- (2) Lending and Borrowing Societies under the Credit and Union

League of Tanganyika - Currently over 10 in the region.

- (3) Societies which are not allied to the primary societies -
eg. Ujamaa villages, or retail sales shops or consumer
societies.

The number of marketing societies has gradually been going down due to amalgamations to form bigger and more effective societies. In 1963, there were 102 marketing societies (82 in Kilimanjaro and 20 in Arusha) and by 1972, these had fallen to only 78. On the other hand, consumer and other societies, especially credit and saving societies have achieved more importance over the years. Membership has kept pace too. Membership for all types of societies rose from 67,087 in 1963 to 104,203 in 1967. (1)

TABLE 78 TYPES OF CO-OPERATIVES IN THE REGION, 1963-1972.

<u>Type of Society</u>	<u>ARUSHA SUB-REGION</u>							
	<u>No. of Societies</u>				<u>Membership</u>			
	<u>1963</u>	<u>1965</u>	<u>1967</u>	<u>1972</u>	<u>1963</u>	<u>1965</u>	<u>1967</u>	<u>1972</u>
1. Marketing	20	22	15	15	7666	12583	13628	14300
2. Consumer	2	2	2	*	*	140	246	*
3. Saving & Credit	1	2	2	*	*	129	104	*
4. Transp. & Cosnt.	2	2	1	*	*	95	17	*
5. Others	-	-	5	*	*	*	*	*
Total:	25	28	25	*	*	12930	13995	*

* Figures not available. Source: District Data. 1967. p. 3 and 27.

	<u>KILIMANJARO SUB-REGION</u>							
1. Marketing	82	74	71	63	59421	75609	77165	*
2. Consumer	2	5	6	8	*	751	1385	*
3. Saving & Credit	3	14	21	26	*	3384	5722	*
4. Transp. & Const.	-	-	-	*	*	*	*	*
5. Others	-	-	5	*	*	51	148	*
Total:	88	96	103	97	59421	79795	90208	*

(A) MARKETING CO-OPERATIVES IN DETAIL

There is no country in Africa where the marketing co-operatives have played such a crucial role in economic life than in Tanzania, where they handle almost all the country's exports and a substantial portion of the domestic economy.

The co-operative movement in Tanzania, and the region in particular, has a long history behind it. Heading the list is the Kilimanjaro Native Co-operative Union (KNCU) which started informally in 1925 as Kilimanjaro Native Planters Association, and formally registered as KNCU after the 1932 Co-operative Societies Ordinance. By 1940, there were only 40 registered co-operative societies. This was followed by a fast rise and by 1969 there were 1737 co-operative societies in the country.

These co-operatives are a multi-purpose unions deeply engaged in buying and selling of farmers produce. This follows logically from the dictates of Muongozo (Policy Directive) and its parent document the Arusha Declaration. In the latter blueprint, TANU stated categorically that "to build and maintain socialism it is essential that all the major means of production and exchange in the nation are controlled and owned by the peasants and workers through the machinery of Government and their co-operatives.

In this region, the three main marketing co-operatives are the KNCU, based on the Kilimanjaro area; the Arusha Co-operative Union (ARCU) which is an off-spring of the amalgamation in May 1969 of the former Meru-Arusha Co-operative Union (MACU, with 10 societies) and the Irgobame Co-operative Union (5 societies) based in Arusha and Hanang/Mbulu Districts, and thirdly VUASU based in Pare District with 14 primary societies. Both the KNCU and ARCU have 49 and 15 Primary Societies respectively, associated to them.

TABLE 79 MARKETING SOCIETIES IN THE REGION

<u>Name of Co-op. Union</u>	<u>Year Est'd</u>	<u>Primary Societies</u>	<u>Members</u>	<u>Agents for</u>
The KNCU (Kilimanjaro)	1933	49	90,000	Coffee (deal with about 70,000 tons of clean coffee p.a., maize, paddy, castor seed...,wheat etc. Hardware, beans, finger millet.
ARCU. (Arusha)	1969	15	12,300	
VUASU (Pare District)	-	14	NA	

The Primary Society

This is the first link in the co-operative chain . It is formed by a number of producers who join together in order to sell in bulk one or more types of crop grown by them. The majority of the co-operatives in the region are in coffee. Small holder coffee is processed in local factories organized through co-operatives, membership of which is compulsory for coffee growers in the mountain. There are also cotton, and dairy co-operatives.

The function of the primary society is to receive the produce, weigh it, bag it, and pay for it. If the product has to be stored at this point, the primary society also takes care of this. Certain societies also offer credit facilities and are also involved in the distribution of fertilizers seeds and other factors of production used by the society members

The costs involved in operating the society are financed by a levy on the produce. Normally this levy is not larger than just enough to cover the costs. Thus the more produce handled by the society, the smaller the percentage of the crop value which has to be kept to meet the costs. It is therefore important that members sell all their produce through the society in order to keep the unit costs low.

The members of the society elect among themselves a committee with four to ten members, which is responsible for the business of the society, including the appointment of a secretary. The secretary receives a salary,

while the committee men do not, but might receive honoraria at the end of the year after approval by a general meeting of members.

Co-operative Unions

Both the KNCU, ARCU and VUASU are co-operative unions or secondary Societies formed by a number of the above mentioned societies. Their functions are very much like those of the primary society, but on a larger scale. The unions coordinate the sales of the society and arranges the distribution of farm inputs through the societies. The unions usually arrange local transport, containers or bags, loans, insurance etc. with the suppliers.

All the above unions have accumulated considerable surpluses and profits which have not in all cases been distributed to the members. Instead, some of the unions like the KNCU and ARCU have invested in processing facilities, or other activities related to local development. For example the KNCU owns a large coffee processing and cleaning factory in Moshi, coffee pulperies, runs a Co-operative training school at Moshi and a host of other minor businesses.

By March 1972 ARCU had realised a total profit of 1,163,339 shs. (before tax) from the union from its business enterprises ⁽⁸⁾ (Daily News). Much of this money was invested in the business enterprises mentioned above.

(8) CO-OPERATIVE CONSUMER SOCIETIES

In the urban areas, efforts have also been made by groups towards the eradication of exploitation. For instance, one of the leading consumer societies in the region and in fact in the country, is the Moshi and District Consumer Society, which has managed to operate a number of shops, some at the level of supermarkets in Moshi town. Some of these supermarkets sell nearly all consumer items including fresh meat. There is also a co-op consumer society in Arusha whose progress is very encouraging too.

Indeed, a man working on his own may not suffer exploitation in his

employment. However, he will not progress much as his counterparts united in co-operative societies. It is not long before an individual working alone exhausts the limits of his powers. This limitation can be arrested by engaging in co-operative ventures.

15.7. CO-OPERATIVE SOCIETIES AND UJAMAA VILLAGES

The co-op societies also have taken an active role in promoting socialism especially in Ujamaa Villages in particular - not just because it is TANU and Government policy, but it seems out of conviction and recognition that sooner or later the villages will be fully fledged co-operative societies.

The union affiliated role as a bulwark for socialist transformation is enshrined in the revised co-operative societies principal aims and objectives. Both the KNCU and ARCU have established agents in Ujamaa villages to assist in the purchase of agricultural produce from the villages; it has provided weighing equipment, farm implements, building materials, foodstuffs and packing materials.

In the case of ARCU, at present gummy bags, fertilizers, seeds, etc. are channelled to the Ujamaa villagers through the co-operative union and its 20 affiliated societies. In the 1972/73 season, ARCU was actively involved especially in five ujamaa villages. The produce dealt with in four villages alone amounted to 109,744/-. In the same season, in addition to 7,200/- set for three safes for ujamaa villages, three tractors worth about 200,000/- were bought.

There have also been seminars sponsored and run by co-operatives unions officials for ujamaa village leaders, where they are taught produce weighing methods, keeping accounts etc. often this is done by sending them to co-op societies where they learn all crop activities.

Furthermore, the union helps them in keeping their accounts and

making annual estimates. In response to a call by the Co-operative Union of Tanganyika (CUT) the union has also assisted the villages financially when the crops were not yet ready; and in bad years such an assistance could carry the villagers to the next season.

15.8. ADVANTAGES OF CO-OPERATIVES AND PROBLEMS IN MARKETING

The advantages of these societies and organizations are many and obvious to all of us, and do not need detailed documentation. Broadly they include the pooling together of resources both human and materials for the purpose of achieving higher goals which would otherwise be difficult or impossible to achieve. In this region as well as in the whole of Tanzania the essentiality of co-operatives as effective and reliable agents for rural transformation has been realised by the ruling party, the government and the people at large.

The co-operative system eliminates the middleman, so that the prices paid by consumers are kept at a reasonable level, and the big capitalists. Certainly, in this region the co-operative system has been very successful and helpful to its members. Progress in the rural areas has been achieved and the future looks even brighter.

15.9. PROBLEMS IN CO-OPERATIVE MARKETING

As with any other system, the co-operative movement has been far from working to the Government's or the farmers' satisfaction. A presidential committee has revealed some of the reasons for the scepticism with which many farmers regard the co-operatives. The farmers complain, for instance, about low product prices, heavy marketing expenses incurred by the co-operatives, corrupt and insufficient employees and committee men, dishonesty in weight and measure and political threats when they air their views.

Some of the complaints are obviously due to the lack of information.

For instance, the low product prices are results of adverse world market conditions, which is not, of course, the fault of the co-ops. Nevertheless, the farmer's complaints have been accepted in general by the Government and measures to improve the performance of the co-op system are being taken. It will necessarily take some time to improve the quality of personnel, but it is an extremely important factor in maintaining the farmers' confidence in the movement. Education of farmers with respect to their rights and responsibilities as members of co-operative societies is another essential factor. The co-operative college at Moshi trains most of the senior staff working in the co-op movement.

Towards Urban Co-operative Ventures - Future Prospects

In the urban informal employment sector, there are lots of people who could be persuaded to form a co-operative society. Barbers, tailors, carpenters, fruit sellers, owners of undertree garages, owners of roadside foodstalls, spare part dealers are but a few people who, if mobilized could contribute much to the people's struggle towards socialism in the regional economy.

They can be mobilized to form co-operative enterprises of different types; some in a form of consumer co-op societies; co-op society dealing with the sale of spare parts; co-op tailoring societies; barber co-op. societies; co-op fruit sellers/etc. The aim could be co-operation among people of similar skills.

We have all these people some of them highly experienced; some of them are very good in certain trades and others are professional vendors.. people who can be mobilized and form their own co-operative societies. Take for instance owners of undertree garages; some are very good mechanics, but they sit under trees mending motor vehicles just for a living. They could be turned into good dealers of the regions' small scale industries.

Self reliance calls for the masses participation in industries that are dealing with incomes as well as expenditures. Thus the development of a strong consumer movement is a necessity to serve the needs of farmers and workers.

SECTION C

BANKS AND BANKING

Introduction

The nationalization of eight foreign and one local commercial bank in 1967 February and the establishment of the National Bank of Commerce to handle their businesses marked the end of 52 years of private foreign banking in Tanzania and represented but a small part of a much more far-reaching socialist policy designed to break once and for all the domination of the economy by foreign capital.

As far as Tanzania is concerned there are various banks to serve almost every need of the nation and branches of these banks are established in the major towns of the various regions of the country.

14.10. TYPES OF BANKS SERVING THIS REGION

To start with we have the Tanzania Bank of Commerce whose duties are varied, among which are; providing the full range of commercial banking services, including crop marketing finance and during peak period, refines itself at the Bank of Tanzania (equivalent to the Bank of England). The NBC, has two branches in Arusha and four Agencies, whereas in Kilimanjaro sub-region it has four branches and thirty-one agencies (higher than any other administrative region in the country). The presence of this high number of agencies in the Kilimanjaro area is a reflection of the rich rural hinterland with much of the wealth coming from coffee, sugar, sisal, and wheat. Currently, there are plans to open more branches and agencies especially in Mbulu and Hanang Districts.

The bank has extended banking services to many hitherto neglected areas of the region particularly the rural areas. Mobile banks are being used extensively because of their inexpensiveness and flexibility.

The second bank serving the region is The Tanzania Rural Development Bank. This was established in 1971 and took over from the earlier agricultural banks and credit agencies. It provides development finance for the rural sector. This includes the share in financing small industries and other industrial and commercial projects on a regional and district base.

The bank has agencies and branches both in Arusha and Moshi. The bank is ready to consider projects which are technically, economically and financially viable, which have sound management and which are consistent with national economic development priorities. The government must also be willing to support the project it is to finance.

The bank gives priority to projects which contribute to a recognised regional development programme. Preference is given to Ujamaa villages, co-operatives, district development corporations and ventures with public sponsorship. Several projects have been financed by this bank in the region and the main co-operative unions of Kilimanjaro (KNCU) and Arusha (ARCU) have obtained loans to finance some of their activities from this source.

The bank also offers technical assistance to potential borrowers in the form of project identification and preparation. It also takes an active interest in project implementation in the activities it finances.

It also offers loans to various customers with repayments being made in kind, often through unions, marketing boards and the national bank of Commerce.

The Tanzania Investment Bank

This provides development finance for all productive sectors, including large-scale corporate agriculture - e.g. the development of ranches and

dairy farming projects in this region.

Its main task is to co-ordinate medium - and large - scale productive project development by providing long-term loan finance. The bank was established on November 6th 1970 with a share capital of T£5 mil. This new bank has already done much more than adapt to new administrative procedures. It has successfully begun to build up a professional cadre of project officers, financial analysts and economists and has succeeded in establishing definite organizational structure.

The National Co-operative Bank

It is responsible for providing crop marketing finance to the whole of the agricultural sector. The commercial banking business of this bank has been incorporated into the NBC. It has branches both in Moshi (KNCU building) and Arusha.

This bank helps the main co-operative unions in the buying and selling of the various crops produced in the region. These crops include coffee, sisal, cotton, wheat, maize, beans etc. Without this financial source, the unions would find it very difficult to finance their activities. The bank also provides loans in buying agricultural inputs like fertilizers, tractors, insecticides etc.

The National Housing Bank

It is an institution which has been created to provide loan finance for private dwelling houses both in the urban and rural areas. It has branches both in Moshi, Arusha, Same and Mbulu and does a great business in this region where house-building is expanding at a fast rate.

Loans are given according to the customers ability to pay back (taking into consideration current income and assets owned) although there is a ceiling whereby no more than 100,000/- is given. This bank helped to

relieve the pressure on housing both in Moshi and Arusha and helps the rural dwellers to build modern houses. So far a number of people, especially those earning high salaries, have taken such loans and a number of new houses are going up in the urban areas where Local Authority or Government housing acute.

Other Financial Institutions Include

- (a) The Tanzania Development Finance Company which acts as project promoter, both in terms of risk capital and through loan finance and,
- (b) The National Insurance Corporation and the National Provident Fund which promote limited finance for real estate developments both in the urban fringes and in the rural areas in the region.
- (c) Post Office Savings Bank - has branches both in Moshi, Arusha, Mbulu and Same. It is a very convenient bank especially for the peasants who have low sums to invest.

Overall, this region is very well served by banks especially in the urban areas although the opening of more agencies in the minor settlements and ujamaa villages is called for. The establishment and siting of so many branches and agencies of the national banks in both Moshi and Arusha is a clear indication of economic activity taking place here. The mobile banks visiting rural centres mainly on market days carry out substantial financial transactions. These serve as an index of the economic resources of the area and a measure of future growth. Some of the new Ujamaa villages and other important centres may in the future become poles for commercial and economic activity, they will eventually require some form of banking services. More agencies and branches are needed in Mbulu and in some parts of Masai to encourage some of the people here to invest their high incomes from the sale of cattle, in savings or deposit accounts.

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SECTION B

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CHAPTER 16 - SOCIAL SERVICES

Social Services are considered under four groups namely:

Health, Education, Libraries and Social Centres.

SECTION A

HEALTH

Introduction

The medical services in the region are composed of hospitals, rural health centres, clinics and dispensaries. These are run jointly by the government and private agencies - especially missionaries who have played a great part in the provision not only of hospitals but also dispensaries, clinics and children's clinics.

Until the end of the First World War medical facilities in this region and in Tanzania in general were very crude and the mortality rate was very high inspite of all the efforts made earlier by the German administration and German missionaries.

When the war ended, Tanganyika was put under British Trusteeship and they inherited a health system which they had to try and improve. Smallpox, yaws, typhoid, tuberculosis and maternity and child care now received concentrated attention. The full textent of what has been achieved today can only be appreciated against thisbackground.

Tanzania now possessed a countrywide network of medical services which has grown up through the efforts and co-operation of government, Local Authoritiesmissions and other voluntary agencies. Inthe Second Five-Year Plan the medical services coverage was due to be still further improved by a vast building programme which had as its aim the provision of one hospital bed to every one thousand people in each district of the country. Tremendous achievements were made in the provision of all services, but as expected not all that was planned for was achieved. Below is an

examination of the progress of the provision of medical facilities in the region to date.

16.1 AMOUNT AND TYPE OF MEDICAL FACILITIES

It is rather fortunate that this region, particularly the area around Arusha/Kilimanjaro, seems to have more medical facilities than many other areas in Tanzania mainly because of L.A. and government efforts and also to a large extent because of missionaries efforts in providing all medical facilities. Early missionaries settled in this area because of its cool climate and friendly people. Their influence quickly spread all around the mountain and a few went to Mbulu where the people were easier to convert to Christianity than the conservative Masai. Their settlement pattern influenced the location of medical facilities since their efforts in this line were very great indeed.

Ten years ago for example, (1964) there were 14 hospitals with 1,581 beds, 146 dispensaries and six rural Health Centres in the region. Today the provision of facilities have improved tremendously either by expanding existing establishments or by opening up new ones as the population of the region has grown. The 1973 figures show that the number of hospitals has gone up from 14 to 18 (one being a brand new big teaching hospital at Moshi); and the number of beds has also gone up by 665 - ie. from 1,581 to 2,246. The number of dispensaries too has gone up from 146 to 150 and that of Rural Health Centres has doubled from six to twelve. In addition to this, there are a number of clinics either attached to the big hospitals or operating on their own right e.g. In 1973 there were 85 ante-natal clinics and 72 child health centres. Table 80 summarises the trend from 1964-73.

TABLE 80 THE PROVISION OF HEALTH SERVICES, TREND FROM 1964-73.

District	Hospitals		No. of Beds		Beds/'000		Dispensaries		Rural Health Centres	
	No.									
	1963	1973	1964	1973	1964	1973	1964	1973	1964	1973
Arusha	2	2	239	301	1.2	1.50	17	20	-	1
Masai	2	2	98	161	0.9	1.15	30	24	1	2
Hanang	-	1	394	146	1.4	1.44	39	20	1	1
Mbulu	4	4		411		0.53		18		1
Moshi	4	6	743	871	1.48	1.97	32	32	3	3
Rombo		1		107				10		1
Same	2	2	107	249	0.71	1.36	28	26	1	3
Total	14	18	1581	2246		1.32	146	150	6	12

Source: Statistical Abstract 1970.

16.2. BREAKDOWN BETWEEN PRIVATE AND PUBLIC PROVISION OF SERVICES

Looking at the breakdown of the medical facilities in the region between public (government and L.A.) and private. It is seen that they almost balance out. In all cases the number of hospitals provided by voluntary agencies in the region outnumber those provided by government. On the other hand, the number of dispensaries so provided are less than those provided by government and L.A.'s. The mission (both Roman Catholic, Protestant and Lutheran etc.) medical service has developed alongside those of government, and they are now assisted by government grants-in-aid.

The provision of public and private health measures for the widely scattered population of the region constitutes a formidable problem. Specialized health facilities are restricted to the principal urban areas and district centres; extension of effective services throughout the rural population is an urgent need. Until recently rural areas were served primarily by scattered, simple dispensaries. A network of more elaborate and better staffed Rural Health Centres is now being established.

TABLE 6†. BREAKDOWN BETWEEN PRIVATE AND PUBLIC MEDICAL FACILITIES, 1969.

Region	Est'd pop. Govt.	Total No. of Hosp.			Total No. Doc's			No. of Dis.			RHC	
		Beds			Req'd Lic'd			Total				
		Govt.	Vol.	Total	Doc's	Doc's		Gt.	V.A.	LA.	Total	
			Agen									
Arusha	649.7	397	420	817	20	5	25	1	10	50	61	2
Kil'jaro	694.4	317	519	836	28	10	38	2	20	38	60	4
N. Reg'n	1344.1	714	939	1653	48	15	63	3	30	88	121	6
Tanza'n	12574.5	6888	7677	15971	445	102	547	21	264	10771	362	69

Source: Statistical Abstract 1970. pg. 126.

16.3. SERVICES PROVIDED

The simplest medical centres are the rural Dispensaries, run by the area's local authority. At present there are 82 in Arusha sub-region and 68 in Kilimanjaro region, with the newly erected district of Rombo having 10 dispensaries. It is fortunate that already, the region has achieved the government's target of one dispensary per 10,000 population although there are wide regional disparities - especially to the Masai^{area} and some parts of Mbulu where services per person are still very low.

Further expansion is necessary in the isolated areas and in all other areas. Any new investment in medical facilities [dispensaries], will have to take into account the existence and distribution of other health services in the region. Quality consideration should be an important factor in this area and local effort can be mobilized to increase the number of dispensaries.

Above the dispensaries come the Rural Health Centres, which are major dispensaries serving as a nucleus of anything from three to five of the smaller units. The majority of these are equipped by UNICEF and they are usually staffed by an assistant medical officer or medical assistant, two nurses/midwives, two village midwives, 3 nursing orderlies and 2 sub-ordinate staff. Also attached to these centres is either a senior or junior health assistant.

At present there are five RHCs in Arusha sub-region and seven in Kilimanjaro. As with dispensaries, these are also unevenly distributed. Each centre acts as a focus of preventive and clinical medicine for a large area (approximately 50,000 persons) supported by small esatelite dispensaries. There are also some beds for urgent cases - now numbering 289 in Kilimanjaro.

In order to reach the target of one rural Health Centre to 50,000 inhabitants, about 15 Rural Health Centres were required between 1969-74 in Arusha sub-region itself, hence leaving a shortfall of about 8 by the end of the Second Five-Year Plan. For Kilimanjaro the situation is the same. To reach the target of 1:50,000 inhabitants the region required 17 Rural Health Centres by the end of 1974., leaving a shortfall of 10 to be built after then. Hence, currently, the region needs 18 RHCs to meet the government target. These are expected to be projects included in the coming Third Five-Year Plan (1974-79) and later even more improved facilities will be needed to reduce the ratio of services per person.

TABLE 82 RURAL HEALTH CENTRES - 1969-74 EXPECTED DEVELOPMENT

<u>Region</u>	<u>District</u>	<u>Proj'd Pop.</u> <u>1974.'000</u>	<u>Rural H.C.</u> <u>Existing'69</u>	<u>RHC's Plan'd</u> <u>1969-74</u>	<u>Exp'd No.</u> <u>by 1974</u>	<u>Shortfall</u> <u>as at end</u> <u>of plan*</u>
Arusha	Arusha	271.4	1	2	3	0
M	Masai	130.6	-	1	1	0
	Mbulu	366.6	1	2	3	4
Kil'ro	Kilimanj'o	632.9	4	3	7	6
	Pare	183.7	1	2	3	1

- * The shortfall represents the difference between the number of RHCs which were required to 1974 taking into account the expected population by then and RHCs which were expected by 1974.

Hospitals

In 1973, the region had 18 government and voluntary agency

hospitals with a combined total bed spaces of 1,952 beds. The bed-population ratio for Arusha sub-region is about 1.3 per 1,000 inhabitants whereas that of Kilimanjaro is an average of 0.7.

The general distribution of these hospital is very uneven, as will be shown below. The government hospitals are supplemented by a network of mission and private hospitals, which although they play a vital role in providing health services to the population are often not strategically located where the need is greatest; and are often not located in the most convenient places in terms of the road network and bus service. A hospital with only 10 beds might serve a large area, rendering such limited service that its function is hardly more than a Health Centre.

The region depends heavily on the voluntary agency, or Mission Hospitals for hospital service with the newest being the consultative Hospital of Kilimanjaro Christian Medical Centre at Moshi. This was built by the Lutheran Church Organization with co-operation with other churches and is run by them and the government. Phase one is now functioning and phase two is due to start very soon. Apart from treating patients, the hospital teaches nurses and other hospital workers. It has a helicopter landing strip to receive serious cases from the rural areas needing urgent treatment. Other hospitals around this area include, Mawenzi in Moshi town, Nkoaringo in Machame. Kibosho, Hurum and Marangu - all Mission Hospitals. Some of them are very well equipped but some of the smaller ones are generally inadequately equipped with funds and qualified staff to play their role satisfactorily. Many of them are too small to satisfy the requirements of the population in the area and in some cases have to do without a qualified doctor for long periods.

The government hospitals on the other hand, are too few and what appears necessary is to expand all the existing hospitals considerably to accommodate more hospital beds. Owing to the growing population the setting up of new hospitals in the region is necessary in the very near future.

When planning new hospitals, note should be taken of the zone of deficiency concerning all the western part of the Study Region - i.e. the Masai/Mbulu area. For the future needs therefore, it will be important that besides an increase of hospital beds, due attention should be paid to the proper distribution of hospital facilities in relation to the population distribution. This will be further discussed below when the distribution pattern and population of the region are examined.

Mobile Clinics and Other Clinics

In addition to the above mentioned medical facilities, there are clinics in every district of the region and some districts have more than one. Both government and voluntary clinics play a major role here - especially Mission clinics in the rural areas. In very many cases clinics are attached to hospitals so as to utilize the few medical staff there is.

In addition, health services can reach the citizens of the region by using mobile clinics, many of which are run by the United Nations (WHO and UNICEF). Mobile clinics are ideal for areas which are not near Health Centres or Dispensaries - especially in the rural areas of Masai, Mbulu and even some parts of the other districts. Figures available for the Kilimanjaro Administrative region show that in 1973, there were six mobile units serving 99 centres.

TABLE 83 MOBILE CLINICS IN THE KILIMANJARO REGION

<u>District</u>	<u>Number</u>	<u>Centres</u>
Moshi	2	42
Rombo	2	12
Pare	2	45
Total	6	99

Source: KAP. 1974/75

16.4. SPATIAL ALLOCATION OF MEDICAL FACILITIES

Spatially, there is a great variation between districts as to the number of hospitals compared to area covered and the number of people in relation to the services. Also, there are many Health facilities located outside the region's service centres or in centres of very low grade while centres of higher grade have none. No rational pattern is to be found and in many cases duplication of services and almost complete lack of services occur in adjoining areas (1).

Taking Area First, we find that some areas are more favoured by health services than others and in most cases, the urban areas of Moshi and Arusha come off best. As an example, Arusha district has an area of 1,150 sq.mls. only compared to Masai district which has 24,350 sq.mls. However, Arusha District has at the moment 2 hospitals at Arusha and Nkoaranga, one RHC at West Meru and 20 dispensaries which are scattered all over the district; the distances between these medical facilities ranges from 10 miles to 20 miles. On the other hand the large District of Masai although it has also 2 hospitals, 2 RHCs and 24 dispensaries, these medical facilities are situated far apart from one another; the distances between them range from 50 miles to 100 miles in the case of dispensaries and 200 to 300 mls. in the case of RHCs and Hospitals. The same disparity occurs too in other districts, although not as much as here. (see Tables 84 and 85 below). This disparity will become even more clearer as we now examine the relationship between the provision of health services in relation to population distribution in the region. If proper location of physical facilities in the region is to take place, one of the many things necessary is a measure of the extent to which existing hospital facilities are distributed in relation to the population.

TABLE 84 DISTRIBUTION OF MEDICAL FACILITIES - AREA AND POPULATION - 1973.

District	Area sq.ms	Total Pop.	HOSPITALS		HEALTH CENTRES			DISPENSARIES		CLINICS	
			No.	Ratio of Med. Fac's.	No. of Beds	No.	Beds	People Served	No.	People	No. '000
ARUSHA	1150	*	2	1:44, 500	301	1		*	20	*	* *
MBULU	3600	178000	4	1:44, 500	411	1		1178	18	1:9888	* *
HANAGH	3200	149000	1	1:149, 000	146	1		1149	20	1:7450	*
MASAI	24850	*	2	*	161	2		*	24	*	*
MOSHI	2050	401736	6	1:66, 956	745	3	126	1:133	32	1:12550	231:17
ROMBO	2050	127216	1	1:127, 200	65	1	42	1:127	10	1:12700	61:21
PARE	3050	167386	2	1:83, 693	123	3	126	1:558	26	1:6437	101:16
Total	37400	1385338	18		1952	12	*		150		*

* Figures not available

Health Facilities in Relation to Population Distribution

An analysis of the situation shows that the heavily populated areas have more facilities than the scattered populated ones, though again, the distances covered in all services differ. The best served areas in terms of medical facilities per inhabitant include, Moshi, Arusha and Rombo districts. These are followed by Pare and Mbulu districts.

An example of the relationship of population and medical facilities distribution can be shown below between Mbulu and Hanang Districts.

Populationwise, there is a marked difference between the medical facilities now existing in the Mbulu district compared to the health services available to the Hanang district. Although Mbulu district has a population of 178,000 people slightly more than 149,000 people in Hanang District.

There are already in Mbulu District 4 hospitals, IRHC and 18 Dispensaries compared to 1 hospital, 1 RHC and 20 dispensaries existing in the Hanang District. The ratio of hospital facilities in Mbulu District is 1:44,500

whereas in Hanang District it is 1:149,000 people. The districts in Kilimanjaro are even much more favoured because in addition to the government hospitals, there are a lot of voluntary agency medical facilities located here.

Hospital Location and Population

Statistics showing population living within certain distances from medical facilities show that some areas are more favoured than others. In Kilimanjaro, well over four-fifth of the people are near to a hospital. At the other extreme is Arusha, only a third live near a hospital with even a lower figure in Masai (2). In absolute numbers the regional variation is equally great. Only 100,000 in Kilimanjaro do not live within 10km. of a hospital, and only 17,000 live more than 10km. from any Health facility. The latter is only 2.6% of the population of the Kilimanjaro sub-region.

On the other hand, in Arusha sub-region, about four times the Kilimanjaro figure do not live within 10km. of a hospital (Table 85 and 86).

TABLE 85 HEALTH FACILITIES AND POPULATION: REGIONAL SUMMARY

<u>Region</u>	<u>Pop 1967</u>	<u>No.of Hosp.</u>	<u>Population Within</u>				<u>Pop. not within 19km. of:-</u>				
			<u>0-5km</u>		<u>0-10km</u>		<u>Hospital</u>		<u>Any Health Facility</u>		<u>No.of Fac's</u>
			<u>'000</u>	<u>%</u>	<u>'000</u>	<u>%</u>	<u>'000</u>	<u>%</u>	<u>'000</u>	<u>%</u>	
Arusha	610474	9	102.7	16.8	206.0	33.7	404.5	66.3	122.6	20.1	95
Kil'ro	652722	10	228.3	35.0	550.1	84.3	102.7	15.7	17.2	2.6	94
Reg	1263196	19	331.0	25.9	756.1	59.0	507.2	41.0	139.8	11.3	189
Taz	11958654	128	1533.8	12.8	2980.1	25.0	8978.4	75.1	240.6	21.8	n.a.

Source: BRALUP Research Paper 21.1

If we compare this region with the national figure the following facts emerge: In terms of population within both 4km. and 10km. of a hospital, this region has a higher figure by far. As for the population not being within 10km. of a hospital a lower figure is recorded showing that this region is well provided by hospitals. The same is true of the population not within any health facility.

TABLE 86 HOSPITAL LOCATION AND POPULATION BY DISTRICTS

District Hospitals	Population 1967	Total District Population Not within 19km. of (a) Any Hos. (b) Any Health Facility	
1. <u>ARUSHA</u> (a) Arusha 9 (b) Nkoaranga	Urban 32,452		
Total	214,716	83,664	4,000
Rural	(181,764)		2.5
%		39.1	2.1
2. <u>HANANG</u> (a) Ndareda (b) Haydon			
Total	147,300	127,760	35,200
%		86.7	23.9
3. <u>MASAI</u> (a) Monduli (b) Wesso			
Total	100,892	100,092	64,800
%		93.6	60.6
4. <u>MBULU</u> (a) Mbulu (b) Chideani (c) Karatu			
Total	142,000	93,000	18,000
%		65.5	12.7
Regional Total	610,478	404,528	122,600
Pop. (Rural	(578,026)	66.3	21.2
%			20.1
1. <u>KILIMANJARO</u> (a) K.C.M.C. (b) Mawenzi (c) Mechame (d) Kibosho (e) Marangu (f) Huruma (g) Arusha Chini	Urban 26,864		

Contd.

District	Population	Total District Population	
		Not within 10km. of	
Hospitals	1967	(a) Any hosp.	(b) any Health Facility
Total	503,067	10,243	1.6
Rural	(470,223)		7,600
%		2.1	1.5
2. PARE			
(a) Same			
(b) Usangi			
(c) Gonja			
Total	149,635	92,235	9,000
%		61.6	6.4
Regional Total	152,722	102,658	17,200
Pop. (Rural)	(125,858)	15.7	2.7
%			2.6

Source: BRALUP RP.21.1

Note: People in areas where they have to travel farthest for medical services live in Masai and Hanang Districts. The other areas are more endowed with facilities. Any future investment on services will have to consider the needs of the above two districts including Mbulu District.

Another feature of the distribution of health facilities in this region is that there is some population overlap for hospitals services especially in the Kilimanjaro and Arusha Districts. In the Kilimanjaro area there is an overlap in the distance between 0-10km. which varies between 9,000 to 13,000 people. This does not happen in the unlucky districts of Masai, Hanang and Mbulu. This shows how haphazard the location of services is and points to the need for a well-thought out distribution of medical services so that the majority of the population can be equally served. This is where a physical planner can be of some help.

TABLE 87 POPULATION OVERLAP FOR HOSPITALS

<u>Region/Districts/Hospitals/Population Overlap</u>	<u>Distance Apart (km)</u>	
	<u>0-5km</u>	<u>0-10km</u>
1. <u>ARUSHA</u>		
Arusha District		
Arusha/Nkongongo Hosps.	None	14,000
		13
2. <u>KILIMANJARO</u>		
Kili'ro District		
(a) KCMC/Mwenzu	3,200	9,000
		1
(b) Machame/Kibosho	None	13,000
		10
(c) Huruma/Marangu	None	11,000
		11

N.B. It should be noted that the inventory of hospitals is for 1972, the count of population for 1967. The figures given above are therefore very conservative estimates of population numbers, the contemporary population numbers could well be 10-15% greater than those quoted.

16.4.2. COMMENT ON THIS SPATIAL ALLOCATION OF HEALTH FACILITIES

Little or no work has been done on the location of hospitals or other health facilities in relation to population distribution. Even the last 2nd Five-Year Plan (1969-74) while giving a target figure of 1 Rural Health Centre to 50,000 people has thereby implicit assumption that population is evenly distributed and that if each 50,000 of the population are supplied with 1 RHC all will be equally well provided for. Near the large towns and in populous areas 50,000 people are situated and no very great distance from the site of a health facility, whereas in many rural areas a Health Centre located in a local population concentration may have to incorporate a very extensive tract of land in its 'catchment' area before the population within that area reaches 50,000 persons. Planning for the provision of Health facilities needs to take into account considerations both ^{of} total population to be served and the distribution of the population in particular areas.

There is disparity in the local/regional availability of health facilities in the region. Partly, these differences reflect past trends in the construction of health facilities. The colonial government put the emphasis on construction of hospitals in the large towns and this was a policy followed even during the First Five-Year Plan (1964-69). Mission centres tended to be located in areas of dense population - as in the case of Kilimanjaro District; but the special distribution concentrations of mission activity accounts for some of the apparently anomalous features of the table of proximity to any Health Facility by District. For example, the widespread mission activity in Moshi and Arusha District accounts for the heavy concentration of medical facilities here. Another anomaly is for example, in Masai and some parts of Hanang District - medical facilities have been provided mainly to serve the interests of the alien traders and missionaries.

No consideration at all was given to provide medical facilities within easy reach of the nomadic tribes found in the western districts of Masai and Hanang - and Masai and Barbaig. However, now because of the TANU call and government policies, the Masai are being settled in selected villages. The most notable development in the Masai District resulted from the formation of the Masai Ranching Associations which have proved to be a great success in transforming the Masai towards permanent settlement. The Barbaig of Hanang District have also responded to the call from government to live in Ujamaa villages.

Hence with the policy of Ujamaa development in the whole region and the clustering of population it should not be impossible to plan spatially a hierarchy of health facilities running from the dispensary to the Rural Health Centre and the hospital which takes into account the existing distribution of facilities and the present and prospective distribution of population.

No matter how good the planning is, in areas where the population is widely scattered (e.g. the Masai) the provision of health facilities will remain a problem. Here non-conventional facilities - such as the present mobile clinics etc. - might provide a spatial solution, nucleation of the settlement might be possible, or the increased costs of providing more facilities each with a smaller population catchment might be considered a justifiable cost. The solution in Masai District where a majority of the people are nomadic is an obvious case of a problem area but the data presented in this analysis demonstrates that it is not a unique case in constituting a planning problem.

16.5. FUTURE NEEDS FOR HEALTH FACILITIES

There is need to exert more efforts in the fight against infectious and other communicable diseases in the region. These efforts would by and large be directed towards the construction of more Health Centres and Dispensaries.

These HC's and Dispensaries would in turn facilitate immediate treatment of various diseases and those people with serious medical or surgical cases would be able to be examined and immediately transferred to big hospitals for specialized treatment. Experience gained has so far proved that some people die of simple illnesses which could otherwise be cured if the people concerned could have obtained immediate medical attention.

16.6. MEDICAL PERSONNEL

Finding the personnel to staff the existing and future health projects is something of a problem not only in this region but in the rest of Tanzania too and the past and current National and regional development Plans have included several training schemes.

To staff RHCs there is a need to train midwives and health assistants. On the nursing side there is a great shortage of training staff and to offset this the government has sent some nurses to study abroad and others in the local institutions of Muhimbili and the KCMC hospitals. So far as ordinary nursing staff is concerned, nurses are trained at the above two hospitals and also at Tanga and Mwanza hospitals as well as in the mission hospitals.

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Doctors working the region either are expatriates or Local Tanzanian doctors who have qualified and graduated from the East African Universities of Makerer or Muhimbili (Dar University) or have been trained abroad - England, Canada, Australia, The U.S. or Russia. Figures for 1969 show that in the region we had 63 qualified doctors serving a population of over 1,344,700 people. In effect this meant a proportion of 22,131 people per doctor - only slightly smaller than the national average of 22,988 ppd. Within the region, in the areas with more hospitals like the Kilimanjaro sub-region, the ratio was 18,274 persons per doctor whereas in Arusha sub-region the ratio was 25,988 persons per doctor. Such high rates per doctor need to be brought down, and the only way to do this is for the government to increase its drive to train more local personnel and to recruit more foreigners in the short run.

In addition there should be a number of nutrition officers in the region to tackle the problem of malnutrition and undernourishment. Food in some areas in the region is plentiful but more people eat the wrong foods or do not have variety in their diets. There are various ways of improving the protein the foods theyⁱⁿ eat and experts should help here.

SECTION B

EDUCATION

Introduction

In the first place the point should be made that dealing with education as a social service obscures its importance as the main infra-

structural input for rapid economic development. The function of education is to give the citizens of this country the background which should enable them to lead a fuller and more useful life, more satisfactory to themselves and more constructive for the society as a whole.

Its economic importance operates at two levels. First by providing the society with manpower (for clerical as well as technical and agricultural activities) with the capacity to create wealth at all levels and secondly by giving the general populace the will to create wealth. Well trained manpower is indispensable for economic development. Thus it is of great importance for the region to improve its educational infrastructure.

This society is at the stage where education must be viewed primarily not as a means of satisfying a demand for manpower which in any case cannot be precisely determined by a dynamic society, but as the means by which minds which have not been confined by tradition can be liberated to receive and try out new ideas. In other words people must be given the will to create wealth.

To achieve this the prime requirement is that the society must provide universal education at least at primary school age level (7-14 years). With this foundation, youths with ambition will be able to educate themselves beyond primary school age level, and so provide the cadres essential for growth in a modern economy. The present estimate is that less than 50% of children in this age group in the Republic receive primary education. This situation is a contradiction of the socio-economic goals of the society.

In actual fact the position in the Kilimanjaro Region is better than that in the country as a whole, and presumably explains why the area has, according to reports, produced some of the most enterprising citizens

in the Republic.

16.7. GOVERNMENT EDUCATION POLICY AND ITS INFLUENCE ON THE REGION

Apart from the increase in numbers receiving education in the region, several major national changes have taken place since independence. The school system has become racially integrated, secondary school and now primary school fees have been abolished, the number of secondary schools trebled, a University together with an Institute of Education (Adults) established and curricular have been made relevant to the dominantly agricultural nature of the country and to the independent nation.

In recent years the whole concept of the role of education in the development of the nation has been examined. In 1967 the Arusha Declaration highlighted the national philosophy and emphasized ujamaa "brotherhood" and self-reliance. This was followed by a unique contribution by President Nyerere in "Education for Self-reliance" (1) providing a clear philosophical basis for the reorientation of the educational system.

In fact even earlier, the President had all along been emphasising that "Education must be aimed at removing illiteracy and developing some understanding of Ujamaa. Schools must prepare people for life and service in the villages and rural areas of this country. For in Tanzania, the only true justification for secondary education is that it is needed by the few for the service to the many". J. Nyerere, 1965.(2)

Education is important in itself and in its practical application to problems of development, especially in rural areas. A major feature of much education in lesser developed countries lies in its failure to integrate learning and living, resulting in the creation of an elite. The emphasis at primary school now is to involve a much greater degree of training for life in the rural sector where a large percentage of young people will live. Almost all primary schools now have some kind of a school farm. The importance of adult education has also been taken seriously and every step is being taken to improve the current situation.

Besides the hierarchy of facilities described there are other important educational channels. In agriculture there is a range of training levels upwards from local farmer-training centres.

As said above, only 50% of children in Tanzania receive any formal education. The aim of giving every child a primary school education is not expected to be achieved until at least 1989 and the increased post-Arusha Declaration burden has imposed a considerable strain on primary school teachers. After the Arusha Declaration, Swahili was introduced as the medium of instruction in almost all primary schools, and agricultural science has been introduced into all Std. V classes, whilst students from schools, colleges of education and the university take part in the activities of ujamaa villages. This participation is both practical and political - practical in that there is an interchange of ideas between villagers and students, the students carry out a large amount of work, and political in that this is one more visible example of government interest in the development of ujamaa villages and an attempt to develop a common peasant-student consciousness to prevent the formation of an educational elite. This is the background against which an examination of the educational system in the study region must be based and most of the developments here are reflections of the above policies.

16.8. THE EDUCATION SYSTEM IN THE REGION

The education system in the region follows the national pattern and this is divided into three stages: primary, secondary and university level. Children enrol in primary schools at the age of seven or eight, and work their way up from standard I to standard VII, each standard consisting of one academic year. Once children in standard I to IV attended school only half a day: but now, this practice is being discontinued and the old standard VIII has been abolished for many years. Those children intending or rather lucky enough to get a chance - go to secondary schools, take a selective examination at about 14 years of age, and successful candidates

start in Form One of secondary school. Those who complete Form Four receive the National Certificate of Education (formerly the GEC - Cambridge). A few of these pass on to Form Six, while the remainder take outside courses or go into direct employment. After Form VI pupils receive a Higher School Certificate. Some of these go for direct employment, while some join the University. However, according to a new system of University education introduced in 1975, Form VI students cannot join the University directly: They are seconded to a Ministry right after finishing Form VI where they are expected to work for a year or two after which if they are interested to join the University they can then apply for a vacancy as a mature student. Obviously, there are obvious drawbacks of this system and its effect is too early to be assessed yet.

Every school leaver - whether at Forms IV or VI, or University - has to do a national service training for one year before starting any job. Part of this one year is spent in the army and part in works connected with building the nation. A majority of the students spend some time in ujamaa villages during this time.

(A) PROGRESS IN PRIMARY EDUCATION IN THE REGION

The number of primary schools in the region stood at 657 (582 public and 63 private) in 1966 with an enrolment of 122,043 students. However, this number fell slightly through the '60s and by 1969, the number of primary schools was 574 (511 public and 63 private) with an enrolment of 122,249 pupils in spite of the population growth during this period. From the '70s the number of primary schools, especially private ones, run by Parent's Associations increased as more people realised the importance of education for the children. The highest rise was recorded in the Kilimanjaro, Pare and Arusha Districts where the population pressure is highest. The cause of the fall in number of schools has been obsolescence in the old schools without government help in replacement which had led to closures. In almost all cases the number of schools in the

Kilimanjaro/Pare districts is about three times that of the Arusha sub-region - a reflection of the population distribution and concentration. Tables 88 and 89.

These schools are financed by government and local authorities or private agencies - particularly Missions. More attention is now being paid to orientate the curriculum to the Tanzanian situation, rather than further expansion.

TABLE 88 NUMBER AND ENROLMENT IN PRIMARY SCHOOLS - 1966-72.

Region	Year	PUBLIC		UNASSISTED		TOTAL	
		No. of Schools	Enrolment Pupils	No. of Schools	Enrolment Pupils	No. of Schools	Enrolment Pupils
Arusha	1966	162	32,171	47	4,124	209	36,295
	1967	168	33,022	50	4,181	218	37,203
	1968	132	33,644	59	3,637	191	37,281
	1969	167	34,759	34	2,197	201	36,956
Kiliman'ro	1966	420	81,367	28	4,381	448	85,748
	1967	408	79,490	34	4,582	442	84,072
	1968	343	84,041	23	2,954	366	86,995
	1969	344	81,500	29	3,793	373	85,293
	1972	-	-	-	-	376	-

- Not available, Source: Statistical Abstract 1970 & KAP pp. 26.

The development of primary school in the region, as in most parts of Tanzania, has, from the very beginning, involved a process of co-operation between local communities who, in general, provide and maintain school buildings, and the various education authorities, at first missionaries, and more recently local government authorities, who, with varying degrees of aid from the central government have provided recurrent teaching costs. This form of educational development has created a tradition in which a large amount of the initiative for primary school development is in the hands of local parent committees. It has, in many

cases - e.g. the Moshi/Rombo Districts - led to an exceptionally high level of school provision, but it has also created a very uneven distribution of primary education across the region and has always placed a strain on limited educational resources.

Primary schooling is co-educational and consists of a seven-year course. Approximately 10% of std. VII proceed to secondary school as a result of a selection examination. A further 20% go to other educational establishments e.g. TTC's, Technical Colleges etc. This means that the remaining 60% have to look for employment both in the urban and the rural areas, and the majority of them do not succeed because of their low education. This constitutes one of the main educational problems especially in this region with its high primary education enrolment and the worse hit area is the Kil/Rombo and Pare areas.

Most children in the urban areas attend primary schools and about half in the rural areas receive some primary schooling. This is where more efforts are needed in the future provision of schools. Swahili is now the teaching medium with English taught as a second language throughout the schools.

In terms of spatial distribution of primary schools it is found that there are district variations in the provision of schools with the Kilimanjaro District (Moshi and Rombo districts) leading with the highest number of schools and Masai and Mbulu districts coming the lowest. Table 89 shows this disparity.

In the Masai, Hanang and Mbulu districts school provision is low because the population is very much scattered and secondly, local initiative to provide schools is lacking among the tribes here. Children have to walk very long distances to school - sometimes three to seven miles. Maintenance of the school buildings is very low and by 1974 for example, 16 primary schools in Masai District had either already collapsed or were

in the verge of collapsing. Most of these schools were built of temporary structures by missionaries sometime ago and have now outlived their lives through wear and tear. The government is now taking steps in rebuilding these schools.

TABLE 89 PRIMARY SCHOOLS BY DISTRICT - 1967. SPATIAL ALLOCATION

<u>District/ Town.</u>	<u>Number</u>	<u>Enrolment</u>	<u>Enrolment per '000 Inhabitants</u> <u>District/Town</u>	<u>Region</u>
<u>ARUSHA</u>				
Arusha town	7	1,197	37.4	61
Arusha/Meru	81	13,851	79.1	61
Masai	38	6,498	62.5	61
Mbulu	92	15,732	54.4	61
<u>KILIMANJARO</u>				
Moshi town	18	3,420	106.7	129
Kilimanjaro	301	57,190	120.7	129
Pare	123	23,370	155.8	129

Source: District Data 1969. pp. 3 and 27. op.cit.

On the other hand, in the densely populated areas around Kilimanjaro and Meru, the spatial location of schools is much better and the distances walked very much shorter. In this area, the high provision of schools by Missionaries and local Parent Associations (TAPA), have of course supplemented the government schools and hence eased the pressure. The Parents Association schools are built by self-help programmes and the government steps in to provide teachers and teaching equipment only.

Sex Ratio among the School Children

The position of females is decidedly worse than that of males. The recorded number of primary pupils by sex - 1967 - shows that in the region less girls receive primary education than boys.

Although the progress of female education is very impressive, still not enough girls are getting this elementary education and much is needed to achieve a balanced sex ratio among the school children. This low number of girls in primary schools here has been caused in the past by parents not realising the need to educate their girls and some of them were taken out of school to help in the home chores or to work in the family farms. However things are now changing and opportunities are open to all children.

Primary School Growth

The average annual rate of growth in the number of school children well exceeds the recorded rate of 3.5% for the population - indicating the advances in providing universal primary schooling by 1989 as set by the government. For example the number of children in the Kilimanjaro sub-region enrolled to start primary - school rose from 15,165 in 1968/69 to 17,685 in 1972/73, showing a percentage change/growth of 4%. However, in the same year (1972/73) out of 28,850 children ready to start schooling only 17,685 were enrolled - leaving 11,165 without a chance of enrolment. The same feature is common in the other parts of the region.

This brings home the need to expand the existing facilities or build new schools where expansion is not possible. At present the government has been pursuing the former course which unfortunately does not solve the problem of spatial allocation of schools. Among the many constraints in meeting the present requirements of the region's children are: lack of finances to invest in education, lack of teachers to man any new schools, lack of equipment etc. The government is trying its best here, but the problem is too big to handle easily especially when we know that there are other areas of the country facing worse problems. Again, there are much more current programmes needing money at the same time as education investment. To meet the target of universal education by 1989, therefore, a lot of investment in education is needed particularly in the

heavily populated parts of the region.

(B) SECONDARY SCHOOLS

Modern expansion has taken place in secondary school education since 1966. Secondary School education is well advanced with this region coming second only in Tanzania in terms of the number of secondary schools available - the first region being Coast including Dar.

In 1966, there were 11 assisted secondary schools out of the Tanzania total of 67, and 5 unassisted secondary schools (out of 26 in Tanzania). By 1969, the number of public schools was still 11 but those of private schools had risen to 7. Since then until today, the number of private secondary schools has risen slightly to meet the demand coming from the primary school leavers who pass but do not get a vacancy in a government secondary school. The government has stepped in to help too, with the latest new government secondary school now being built at Karatu.

Secondary school enrolment has also gone up from 4,209 in 1966 to 5,935 in 1969. Today the enrolment of students in secondary schools in the region is well over the 6,200 mark. Table 3.

TABLE 90 ENROLMENT IN SECONDARY SCHOOLS - 1966-69.

<u>Region</u>	<u>Year</u>	<u>PUBLIC</u>		<u>UNASSISTED</u>		<u>TOTAL</u>	
		<u>No. of Schools</u>	<u>Enrol. of Pupils</u>	<u>No. of Schools</u>	<u>Enrolment Of Pupils</u>	<u>No. of Schools</u>	<u>Enrolment</u>
Arusha	1966	2	685	2	203	4	888
	1967	2	674	3	364	5	1,038
	1968	2	730	3	513	5	1,243
	1969	2	743	2	599	4	1,342
Kilim'ro	1966	9	2,781	3	540	12	3,321
	1967	9	2,938	6	913	15	3,851
	1968	9	3,307	6	862	15	4,169
	1969	9	3,660	5	933	14	4,593

Source: Statistical Abstract 1970 pp. 205.

As far as the spatial location of the secondary schools is concerned, we also find that many of the secondary schools are located in the Kilimanjaro area and in Arusha town. Only the new Karatu Secondary School is located in the western districts of Mbulu, Masai and Hanang. Many of the secondary schools in Kilimanjaro's rural area are not located in service centres. The location was in most cases determined by the main sponsoring bodies - Hence most of the mission-assisted schools are located in the vicinity of Missions - eg. Umbwe Secondary School in Kibosho or Machame Secondary School in Machame. Other schools here include Mawenzi, Moshi and Old-Moshi secondary schools in Moshi town itself - Meruweru secondary school - six miles from Moshi - for girls; Kibosho secondary school (private) and a few more. Thus, the various missions have been responsible for the establishment and concentration of secondary schools in the above area. Any new secondary schools should be built in the western part of the region where the schools are currently lacking and hence balance out the spatial imbalance now existing.

Secondary schools attendance by sex also shows that more males attend secondary schools than females for the same reasons as in the case of primary school attendance. Today, however, women are struggling as much as men to acquire education and no chances are now lost.

Approximately two-thirds of the schools are boarding schools and the majority of the day-secondary schools are in the towns. The teaching medium in all secondary schools is English and most of them have four-year course leading to the East African Certificate of Education which is now replacing the GCE.

The staffing of these schools has been mainly expatriate. In 1967, 72% of the teachers were expatriate and the teacher-pupil ratio was 1:19.6¹. To enable secondary schools to be staffed by graduate Tanzanians, approximately 60% of the bursaries at the university in the Faculty of Arts and Social Science and 85% in the Faculty of Science have been

considerably reduced, and today, the number of such teachers is minimal,

This region, especially the Moshi/Rombo districts, is renowned for its efforts in providing private schools either through Missionary help or through the parents. So far there are three private secondary schools in Arusha and seven in Kilimanjaro. These private schools run by TAPA find it difficult to compete for staff as they cannot offer a permanent career. Some have been able to attract qualified teachers, but as a whole they tend to rely heavily on untrained school certificate teachers. These schools are short of equipment and materials. But they can do little to counteract this because their only source of money is through fees whereas government schools are fully financed by the tax payer. Yet the fact that parents willingly pay higher fees indicates the keen demand for secondary schools that exists, particularly where primary education is already well developed - as in the Moshi, Pare, Rombo and Arusha districts.

The private secondary schools should concentrate more on the lower forms of education, but there should also be opportunities to combine technical and practical skills with a general education, and once manpower needs can be defined more clearly some secondary schools or their equivalents should provide training more closely attuned to direct entry into skilled or semi-skilled occupations. Further, as in the primary schools there is need for rural orientation.

(C) OTHER EDUCATIONAL ESTABLISHMENTS

There is a dearth of training opportunities outside the schools in the region. The opportunities for further training for primary school leavers and for people with School certificate are very limited. There are the technical secondary schools (e.g. the one at Moshi) and a few smaller institutions giving full post-primary and post school certificates training, most of which is suitable for urban occupations. Some of the bigger industrial concerns have their own training schools and there are government institutions giving professional training. These include the

agricultural training institutions - e.g. that at Machame, Tangaru and Marangu; the new National college of Education at Monduli etc.

At Moshi, we have the Moshi Co-operative College tied in with the Co-operative movement. It trains accountants and other management staff associated with co-ops. Its students come from all over East African and some from other parts of Africa. Also at Mweka, in Kibosho, there is the Mweka Wildlife College - The only college in Africa specializing in wildlife management. It takes students from all over Africa and trains them in all fields of wildlife care and management and conservation. Recently it has expanded to meet the ever growing demand for places.

Lastly, there is a new Military Academy now under construction at Monduli expected to be finished at the end of this year.

For the majority of the people in the rural areas there is limited opportunity for a little further training or a little further knowledge. The Community Centres and Farmers Training Centres (e.g. Marangu) give short courses in farming methods, co-operatives organizations, the leadership of youth clubs, women's clubs and self-help groups and courses for adult illiteracy and nursery teachers.

Technical Schools

At present there is only one operating technical secondary school located at Moshi, teaching all aspects of technical subjects for four years after primary education. The subjects taught here include mechanical electrical and other engineering subjects; masonry, carpentry etc. After the initial training most students go for direct employment^{or} for further training at Dar Technical Institute or Ifunda where specialization is possible.

Two other technical schools are now under construction one at Tengeru in Arusha and the other at Mandaka . . . (Kilema) in Moshi. The Arusha

Technical College is being financed by a 60/- mil grant from the Federal Republic of Germany. On completion the college will conduct a three-year diploma course for technicians, including a years practical work in the fields of mechanical, electrical, automobile and civil engineering.

The college is expected to accommodate 440 students who will be trained by a group of German teachers until Tanzania can train its own staff.

The other technical school is the Kilimanjaro Youth Technical Centre being built at Mandaka estimated to cost 6.8/- mil. It is being built by self-help system and so far 350,000/- has been collected. The government is also giving help - e.g. in 1973 the government gave 800,000/- as its contribution for this project.

The primary aim of this centre is to train some of the thousands of youngsters in the Kilimanjaro Region who after completing standard VII cannot get a place in secondary school and in most cases these youths are too young to go into direct employment in the towns. Thus, instead of letting these young men roam the villages or towns without jobs, parents have volunteered to build this centre which will train them the various trades needed in the rural areas - e.g. carpentry, masonry, engineering etc.

When completed the centre is expected to take 500 students every year. Mbulu, Masai and Pare districts could do with such a centre to train their youth.

Teacher Training Colleges

This is a significant educational facility geared towards the training of teachers of varied grades for both the primary and secondary schools, in the region.

The existing system requires that every potential teacher undergo training before beginning his teaching career. This means that the teacher

training system not only has to catch up with a tremendous backlog but a constant ^{15/10/69} class-teacher ratio, provision must be made for training an increasing number of teachers to meet the net increases in the primary school-going population.

Spatially, we find that the distribution of the TTC is neither related to the distribution of school facilities nor to the distribution of the population. As a result, we find that all the region's three TTCs are all located in the Moshi District - Mandaka, Singa Chini and Marangu. The first two were established by the Roman Catholic Mission and the last one by the Lutheran Church. The first two train primary school teachers and the last one trains teachers both for primary and secondary schools.

Obviously, there is need to open ^{some} TTC in the western districts of Arusha, Mbulu and Masai.

Nursery Schools

There has also been a growing interest recently in nursery schools, encouraged and supported by Community Development through the local authorities. At present there only a few nursery schools in the towns of Moshi and Arusha, the majority of which are very small and run privately.

The YMCA nursery at Moshi is run very efficiently and its demand is growing very fast as more mothers now take paid employment. For the rest, however, these are run by teachers with little or no training, many of whom have not even completed primary school themselves.

The nursery school tend to prepare children to do better in primary schools and they also care for children who are otherwise a nuisance at home. As more people become affluent and with more wives taking up paid-employment, demand for such schools is bound to increase especially in Arusha where EAC staff and families may increase in number. For the other towns there should be at least one such school.

16.5. ADULT EDUCATION AND LITERACY

Adult Education in this region has been on the forefront though the District differences are strikingly great - e.g. Kilimanjaro sub-region has 56% of its people literate on one hand whereas Arusha has only 26%. Among the Massai the percentage is even very much lower. Very few know how to read or write.

Progress has been slow because of the shortage of teachers; or the women teachers who volunteered to teach got married or lack of transport means to attend such classes and laziness on the part of the citizens. Several adult education centres are scattered in both the urban and rural areas attached either to missions or government establishments. Most classes are held in Community Centres, Church centres/halls, or in primary schools when the pupils go home.

Adult education should be a continuous tool in the exercise of catching up on the past and preparing the population for the future. It is the means by which the population is enthused with the will to participate and to learn how to do the things which will promote its welfare. An exercise of this nature cannot be achieved through literacy programmes. These will never end and the society will in time have to carry a larger and larger burden of unemployables and delinquents. Thus, adult education should not be merely to master the alphabet and to solve arithmetic problems. It must be more functional. That is to say, knowing how to read is useful only if it helps the readers to acquire through relevant books greater knowledge and skill for enhancing their productivity and chances of survival.

Knowing how to write is useful only when it helps to impart this newly acquired knowledge and skills to as many members of the community as possible because in socialism the means of production must be socially - not privately-owned. Thus in the adult education classes apart from

learning how to read and write they are taught how to make articles like, cooking utensils using clay or any other materials; table mats, table cloths and so forth.

The development of the transistor points the way to the solution of the problem of imparting knowledge. The farming population can be instructed by radio ^{about} ploughing, sowing and reaping periods and an agricultural news prog. could expand the internal market for agricultural produce.

The government is to stamp out illiteracy by the end of this year in the Kilimanjaro sub-region and in 1978 in the Arusha sub-region. The above targets are a bit optimistic and if they have to be achieved great encouragement in this sphere has to be made. The whole question of literacy will be examined in detail below.

Literacy (3) and Education

Literacy by sex and age shows a general fall in percentage of those without education, with the younger generation recording the lowest rate of illiteracy since their chances are highest. Generally, although illiteracy has also fallen for women this has been slower showing a bias against formal and informal education for females not only in this region but in the whole of Tanzania in general. In fact, female literacy never exceeds 47% in the country, whereas the male age group between 10-34 have 49% or more literate.

There is also rural/urban differentials with the people in the urban areas being more literate. Urban males are a select group with 74% literate, and at the other end of the scale rural females barely exceeds 17% literate. This disproportion has been caused by the lack of educational facilities in the rural areas.

TABLE 90 REGIONAL POPULATION 10 YEARS AND OVER BY LITERACY AND SCHOOL ATTENDANCE

Region	Literate (%)	Attending or have attended school	GDP per cap. shs.
Kilim'ro	56	57	660
Arusha	26	26	534

Source: Census 1967. op.cit.

The variation in literacy rates in the region, presented above may be explained by a combination of factors. The ranking of literate rates corresponds closely to ranking by economic level (e.g. GDP per head). The differences in literacy rates prevailing in districts such as Kilimanjaro and Masai also reflects the unequal earlier impact of missionary work.

To conclude, it is therefore seen that the region still suffers from a high illiteracy rate in the Masai/Mbulu districts, although there is evidence that the literacy rate is advancing in recent years. It is possible that the Kilimanjaro area can stamp out illiteracy in the next year or two, the others have a longer period to do this. It should not however, be forgotten that the disparities in educational opportunities are demonstrated in many ways. Firstly, the more economically developed districts of Arusha, Moshi and Rombo show higher literacy rates than the less developed. Secondly, urban areas enjoy higher literacy rates than rural areas and thirdly, the sex differentials in literacy rates are in favour of males compared with females. Of those who are educated, the ratio of those who have had higher education (15 years and over) to those with secondary education is exceedingly small; about 1 in 25 has received some tertiary level education. The educational attainment and location of facilities is mainly a result of the past performance of the educational system and the general colonial attitude towards education for indigenous population.

Finally, if the analysis is limited to the economically active population it appears that in general those with the highest educational

attainment are in non-agricultural occupations. Further the sex differential is inversely related to the general level of educational attainment and this is highest in the agricultural population and lowest among the relatively well educated non-agricultural classes.

The above disparities in spatial location of educational facilities must be corrected especially in the districts of Masai, Mbulu, Hanang and to some extent - rural Arusha. There is need to provide more secondary schools in the region to cater for the number of pupils who finish primary education and fail to get a place for further education. If all the targets set by the government for all levels of education are to be attained, then the L.A.s and the Government plus private agencies have to invest a lot of funds in this social service. The region has tremendous potential manpower from its present educational establishments.

SECTION C LIBRARY SERVICES

15.9 LIBRARY SERVICES

In the entire region there are only two main public libraries - one at Arusha and one at Moshi - both housed in spacious new premises located in areas where most people can use the available facilities. Other small and private libraries exist in the minor towns.

The majority of the people who use this facility are students or people engaged in various studies and of course the general public.

On the whole the region is poorly served with library services and the need for them is crucial if the urban and rural population is to be provided with general education so as to stamp out illiteracy according to the government policy.

All the urban centres, Mbulu, Same, Babati need to be equipped with some sort of a public library and all rural centres both existing and planned, should have a branch of a size adequate to serve a population of

about 40,000 people.

As an incentive to encourage people to read more, the Tanzania Library Service Branches at Moshi and Arusha run mobile libraries but these cover only the urban areas and the adjacent areas. Serving the rural areas is too difficult a task to administer. In future this service should extend to the rural areas - may be operate on market days or in conjunction with adult classes sessions. Thus, mobile libraries should be provided emanating from Rural Centres and visiting all Market Centres at regular intervals.

SECTION D

16.10. SOCIAL AND COMMUNITY CENTRES

Although most of the Urban and Rural Centres have social halls and community centres about 25% of the small service centres lack this facility.

No definite pattern or criteria exists for locating social halls, as their construction is very much dependent on the initiative of the local people as well as the local authorities and the respective churches. This being the case, in districts like Moshi and Rombo, where the church is very well established and the people more advanced than in other parts of the region, there are several community halls scattered in the rural areas especially in the mission centres. Arusha district is also well provided with community halls. In the districts of Mbulu and Masai these are non-existent in vast areas.

These community halls are built on self-help basis except where the local authority has stepped in to provide them. Sometimes the church lends one of its buildings to be used as a Community Centre, by its parishioners.

Social halls play an important role in the life of the local people

for social gatherings, political meetings or church meetings. Often they are also used as educational centres for holding adult literacy classes and often as nursery schools or places where cinema films can be shown for educational and entertainment purposes.

To spread the spirit of community development the government has built a Community Development Training Centre at Tengeru near Arusha. The centre holds 120 trainees who eventually work as government and local authority community development staff both in the towns and in the villages. The staff guide people in self-help schemes - e.g. building bridges, roads, schools ^{or implementing new} agricultural programmes to help them raise their standards of living and so forth. A lot of progress has been achieved in the Moshi/Arusha area in this respect although more effort has to be made in the other parts of the region in order to encourage greater participation.

In view of the social and cultural importance of community centres, it will be a good idea that all the Urban, Rural and Market Centres (existing and planned) should have a social hall large enough to serve a population of approximately 5,000 people within a five-mile radius. In places like Masailand where some of the people are still nomadic this venture is difficult to implement, although wherever these people have started to settle permanently, such a service will become a very beneficial asset.

15.11. SELF-HELP IN THE PROVISION OF SOCIAL SERVICES

The self-help movement has acquired a lot of momentum of its own not only in this region but in the whole of Tanzania since Independence. The movement has been so successful that it has spread to almost every corner of the country and currently regions compete against each other to see which can carry out a higher number of projects.

Through this movement - a brainchild of President Nyerere - there is a lot of value of contributions, cash and materials and labour from

different sources. The bulk of the contributions come from local sources, relatively little from central or local government. The local press and even the national press is full of reports of astonishingly large collections at meetings to launch new projects: maternity wings for local health centres, extra wards for hospitals, new classrooms and teacher's houses in schools etc. Civil servants, politicians and local leaders have all encouraged self help schemes and it is clear that there is an enormous amount of local funds and labour that people will readily contribute to projects of this kind. It is important that these local contributions be directed into useful development activities.

The value of the self-help projects in the region is almost impossible to quantify in full but suffice to say that several projects have been carried on in this region saving the regional authorities a lot of money. For example, 350,000/- was collected from the people of Kilimanjaro as their contribution to the construction of the Kilimanjaro Youth Technical Centre at Mandaka. In the year 1973/74 Self Help Schemes in the Kilimanjaro sub-region was estimated to be 120,000/-. In the Moshi District, self help schemes cost were valued at 87,000/- being money spent on building primary school extensions, two dispensaries, one clinic and a few small projects. In Pare, Self help schemes were valued at 18,000/- being the cost of building 6 dispensaries in various parts of the district and in Rombo district the sum of 15,000/- was saved being the cost of building one dispensary and four teachers houses ⁽¹⁾ (KAP.op.cit. pg.172).

In this year, self help schemes in the Moshi district alone are expected to cost 621,000/-. Again most of the money going into building new classrooms, community centres, bridges, clinics, teachers houses and a host of other projects.

Details of self help schemes in Arusha are not available, but even here several projects have been carried on and it is expected that many

will be executed in the future.

In nearly all districts, over 50% of the contributions are for educational purposes: new classrooms, teachers houses and the building of health facilities which include health centres, dispensaries, clinics etc. The remaining contributions go to finance a variety of projects.

Other self help activities include group cultivation or bush clearing and the provision of other social facilities.

The contribution to self help projects are all capital contributions to provide facilities for programmes that will continue in the future. Many of these involve considerable recurrent expenditure, and it is here that the movement breaks down. Self help groups used to assume that the government; central or more often local, would provide the staff and equipment once the facilities were built. Once they built a new school, they expected the government to take it on and run it as any other government school. But in most cases the government officials were not brought into the initial planning, and it is very difficult for them to take on all the new schools and health centres that were built. It still seems to be true that district development officials fail to consult the appropriate authorities early enough in their planning. Even though the project may not have started when a regional/district council first hears about it, it may be too late to stop it if the self help group has already mobilised local support and started collecting the funds.

It is not necessarily a bad thing for local communities to be involved in recurrent as well as capital financing, even if it means that their schools are of a lower standard than the officially supported ones. With the uncontrollable pressure for an expanded programme of primary education, especially in the Kilimanjaro area, it may be best to let local communities run sub-standard primary schools. But there is scope for more effective guidance and direction of self-help efforts than the Community

Development staff appear to be able to give. There have been vague government statements about the need to control the self help groups and to channel their efforts into more productive activities, but this has not yet been translated into effective control.

The self help committees must have access to technical advice and assistance if they are to channel their activities into more productive fields. They need to be made aware of alternatives which they have not considered, a water project that could be undertaken instead of a road, a community hall which might serve their purpose better than an extra room at the school and so forth. They also need advice on the benefits of the different projects from which they choose and the way in which their projects might fit in with local development, and how much assistance they might get from interested government departments. And they need advice on the planning and the execution of projects, particularly those in unfamiliar fields. Most self-help groups can organize the building of a teacher's house or an extra classroom at the school. Many would find it much more difficult to organize the construction of water project new to a area. This reinforces the bias towards health and education rather than productive activities.

The existing staff cannot be expected to provide all the information and expertise required. Professionals should be recruited, possibly working as staff of the community development committee as well. Alternatively there should be staff in the Community Development Department with this particular responsibility.

The region cannot waste such a potential valuable resource, nor can we expect to rectify the situation without spending some money on recruiting necessary additional staff.

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SECTION B

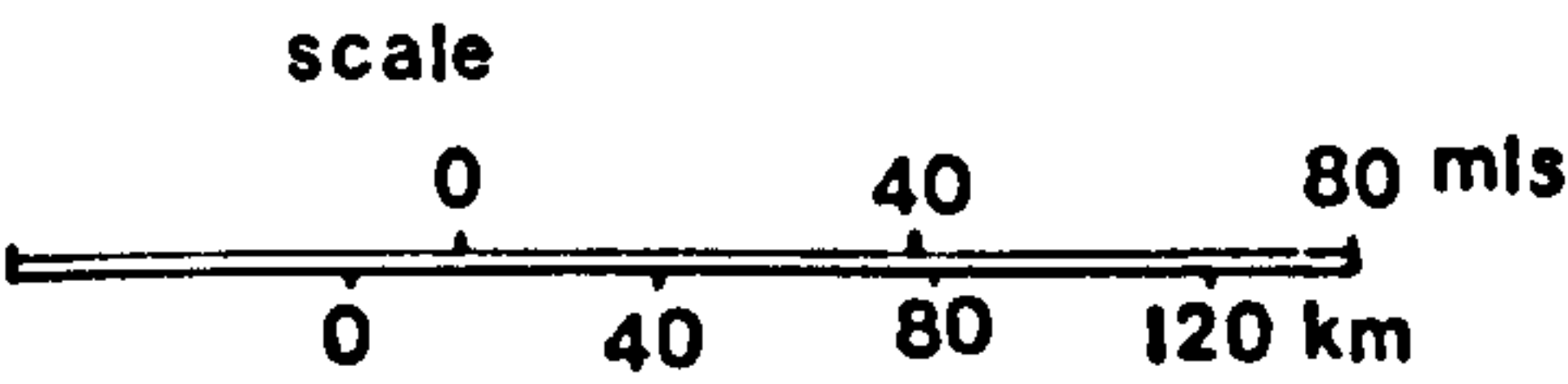
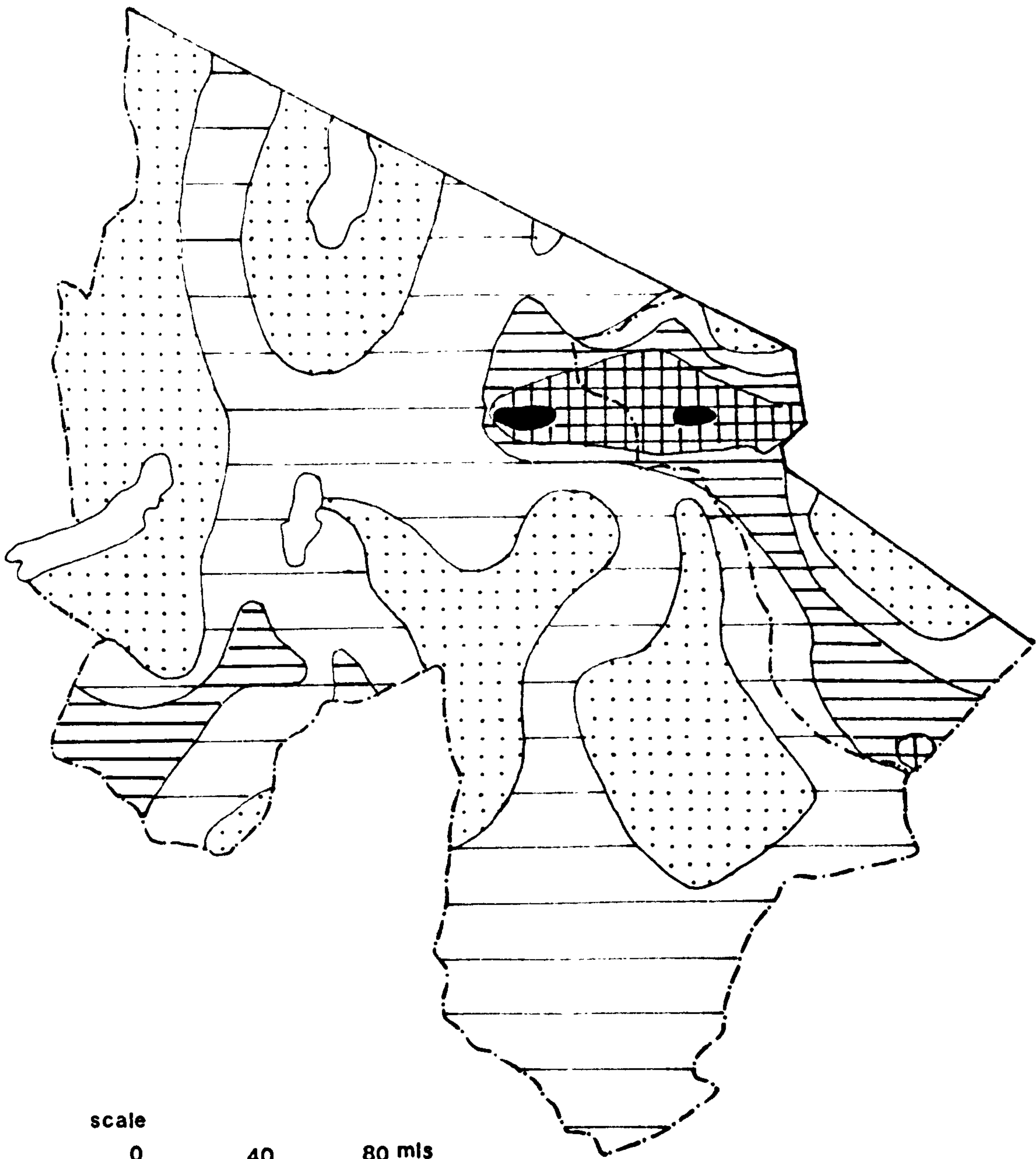
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SECTION D

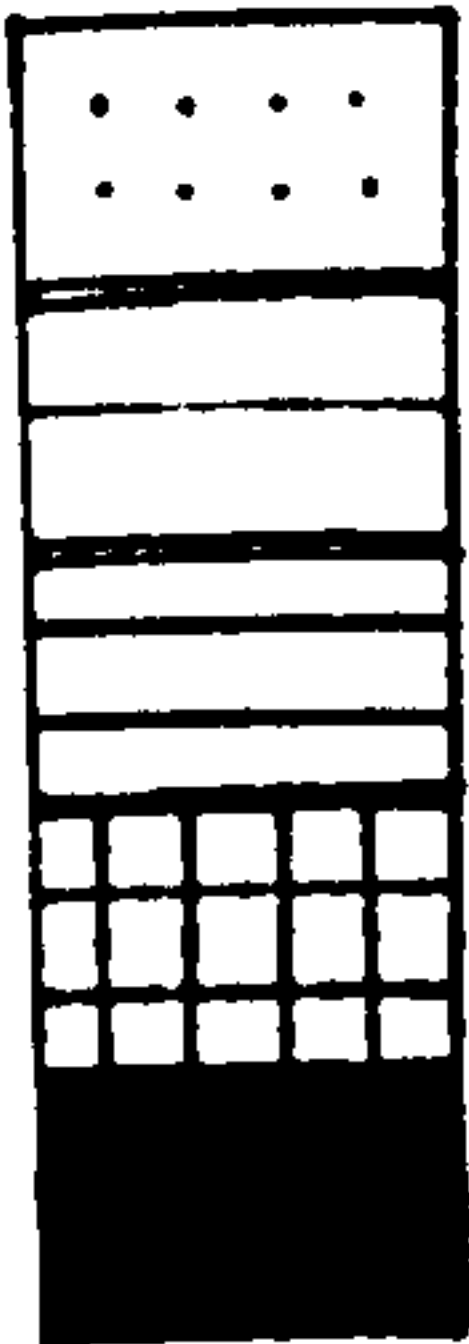
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Density of Road Network .

MAP 13.



MILEAGE PER $\frac{1}{4}$ SQUARE



- Less than 10
- 11 - 30
- 31 - 50
- 51 - 70
- Over 70

As can be seen, the area around Moshi and Arusha is the best served ^{area,} followed by Pare district served mainly ^{by} the trunk road to Tanga and Dar and then Hanang District. As for the rest of the region, road density is very low because of the vast unpopulated and inaccessible plains of Masailand. The two main centres of Moshi and Arusha are well connected by main tarmac road. Feeder roads branch off to the rural areas on the mountain. From Arusha westwards, there are two major roads: one leading off to Mwanza, Musoma; and the G. North road to Dodoma. These roads apart from serving the people in the western districts, they are also the main tourist network to the National Parks in the region - Ngorongoro, Manyara, Tarangire, etc.

The main and minor road network in the region is shown on Map 14

Road Transport Network

Regional Roads

In the region the length of usable roads is well over 5,000 kms. composed of bitumized roads, all-weather roads Grade A and B and other sand and gravel or earthen roads. Overall, bituminized roads are passable all year round and in the region these are 521 km long with the Moshi district having 84km, Pare 139 km. Arusha 130 km., Masai 123 ^{km.} and Mbulu 45 km.

In the Moshi District the road is part of the National Trunk road Tanga - Moshi - Arusha and the Himo - Taveta - Kenya Boarder. (84 km). The other 96 km. of bituminized road is composed of the road from Moshi to Arusha Chini (TPC); Moshi - Machame and Himo - Marangu.

In the Arusha and Masai Districts, the bituminized roads are composed of the National Trunk Road - Moshi - Arusha - Namanga (Kenya Border); and part of the Great North Road from Arusha - to Babati.

After these come Grade A Roads, including both tarmac^ked Roads and all weather roads and these are 1,835 km long in various parts of the region. Some of these roads include the Makuyuni to Ngorongoro Road, Babati to Singida road; Arusha - Engare Nanyuki road etc.

Lastly, come Grade B, both sand and gravel roads which are numerous in the region. They also include earthen roads which are passable mainly during the dry season. Their total length is 2,729 km.

TABLE 92 ROADS IN THE REGION BY DISTRICTS

<u>Region/District</u>	<u>Bituminized Rds.</u>	<u>Grade A Rds.</u>	<u>Grade B</u>	<u>Total</u>
<u>KILIMANJARO</u>				
Moshi	84 km.	522 km.	1,178	1,784
Rombo	-	110	64	174
Pare	139	450	547	1,136
<u>ARUSHA REGION</u>				
Arusha	130	227	50	407
Mbulu/Hanang	45	325	180	505
Masai	125	201	739	1,065
TOTAL	523	1,835	2,758	5,071

Source: KAP pg. 54 for Kilimanjaro. Reg. Statistics.

The road network is very well maintained especially in this region not only to serve the needs of agriculture but also to serve industry and commerce and the tourist industry particularly in the western part of the region. The access roads to the major national parks in the region are in good condition most of the year except some stretches of these are sometimes impassable during the rainy season. All the roads in the National Parks are sand and gravel or earthen. This is to discourage which are high speeds detrimental to the animals in the parks, and also to leave the areas as natural as possible.

The tarred roads are conveniently motorable throughout the year if well maintained even though from the point of view of quality the standard of the road stretches varies. In some places - e.g. along Moshi/Arusha; or Himo/Voi Road - the roads have been overused without adequate repair and maintenance. The gravel roads are in varying states of disrepair too. They too bear the imprint of excessive use especially in the Kilimanjaro area, without the corresponding adequate maintenance. A proportion of these can be used only during the dry season.

Great efforts are being taken to improve the communication system in the region. Well over 300,000/- are spent annually to maintain and keep the above roads in good order. In the past, a number of roads have been improved and upgraded and new access roads have been opened up.

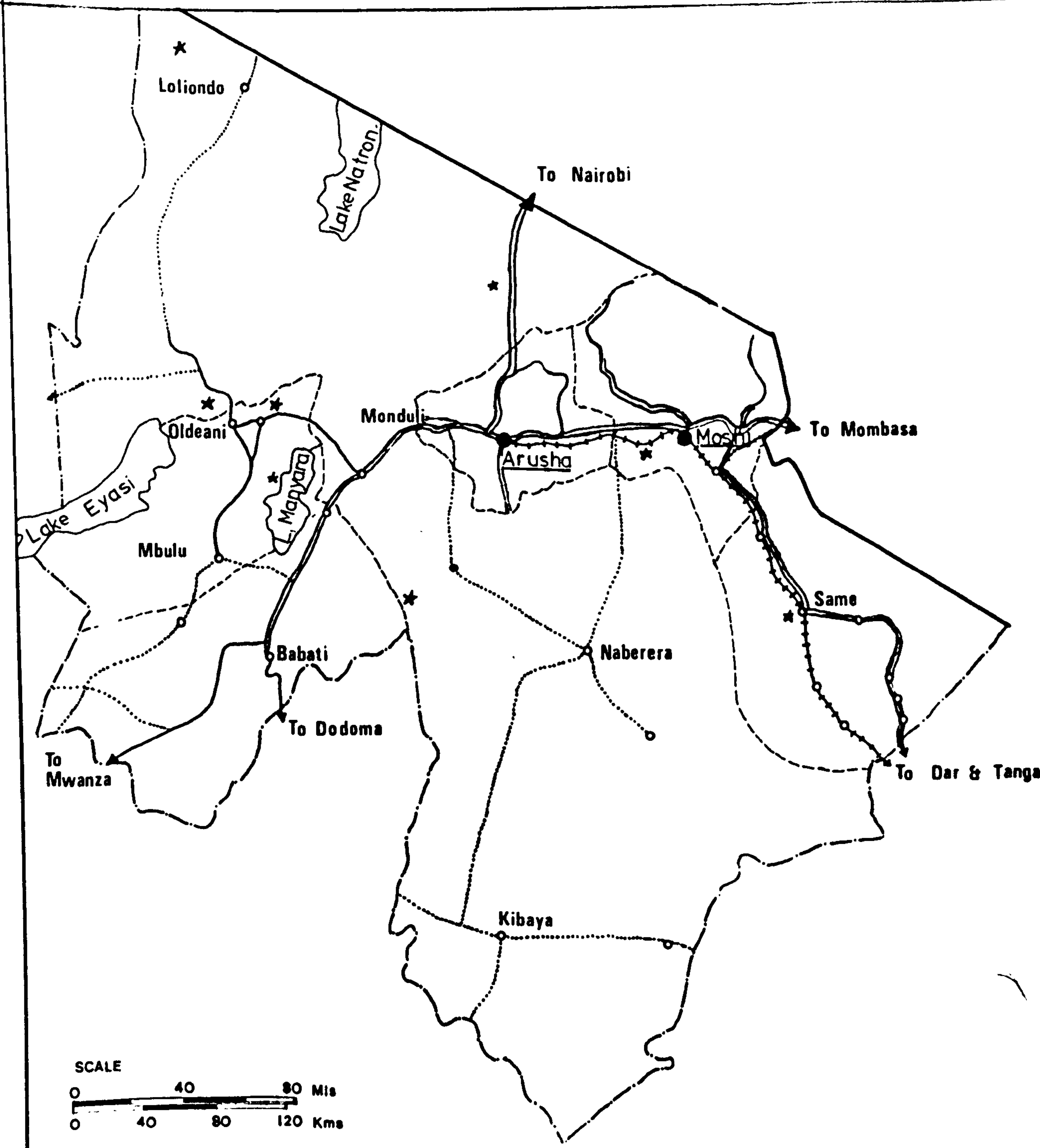
The current programme includes the improvement of feeder roads to provide for the economic transport of an ever increasing quantity of produce and other goods, while minor feeder roads are being improved or constructed to provide satisfactory access to developing areas. For example there are plans to build a bridge at Mulo in Kirua Vunjo, build an 8 km. road from Sanya Juu to Naibilie to serve the coffee and maize farmers here and other roads e.g. Masama-Lewira Co-op; Old Moshi Tella Road, Mikochei Road in Pare and some in Mbulu District.

Where necessary, preliminary economic feasibility studies have been, or will be undertaken to ensure the economic soundness of each major project. Construction of any roads is expected to conform to certain set standards which have been calculated by setting the economic benefits which are expected to accrue, against the costs of financing the construction and the increased maintenance costs.

The Government takes care of the 'Regional Roads' which form the national Trunk roads and other important main roads, and the District authorities maintain the minor or 'district roads' within their areas.

Transportation Network

MAP 14.



Key

- Main roads - Tarmac
- Other main roads
- Secondary roads
- Railway
- Airfields

However, the inability of the district authorities to maintain their roads due to lack of funds and adequate manpower, has resulted in a plan for the central government to take over and maintain some of the important main roads. In 1967, Regional Road Boards were formed to assist the Ministry of Communication and Works in the improvement of this part of the road network. The Local Authorities of Arusha and Kilimanjaro, still play an important role. Self-help schemes in the region have helped to build several feeder roads in the rural areas especially in the Kilimanjaro/Arusha area,

Competition

Since agriculture plays such a dominant role in the economy of this region, one primary function of roads is to facilitate the marketing of farm produce. However, the tariff structure of the railways ensures that, road transporters are effectively excluded from all long-distance movements of such commodities - e.g. coffee to Tanga or Mombasa ports. Roads in the Kilimanjaro/Meru areas are only a means of access to the nearest railhead of Moshi and Arusha railway stations.

Hence feeder roads can generally perform this function as well as routes with higher surface standards, and it is with the necessity of moving agricultural produce over fairly short distances within their areas of origin that the adequacy of the road network should be judged. To do this ^{map 13} should be used in conjunction with the various maps of agricultural produce.

As a general precaution, however, it may be worthwhile pointing out that many of the roads now in existence have a relatively less traffic density, and considering the very heavy expense of road construction and maintenance, sufficient use is not being made of them for moving agricultural produce. It is therefore desirable that every effort should be made to increase agricultural production in those areas where roads already

exist rather than to embark on new construction.

Roads are not only needed to serve areas of existing production and thus remove bottlenecks in the marketing process, but they can also be a powerful means of opening up areas which are at present under-utilized. Any new road into an undeveloped region sets off a chain reaction in the use of resources and general development: an unworkable mineral deposit becomes economic because of cheaper transportation; vegetable and food gardens become industry when it is possible to truck products to the town; a health clinic is opened because a doctor can drive there once a week; bus services begin; service stations and hostels open; people have the incentive to purchase bicycles; then perhaps landrovers or jeeps and a change takes over from barter to banking. The all-weather road brings about this extraordinary catalysis; this is to because it is so flexible: Unlike the railway the bus can stop anywhere, the jeep can branch off onto dirty tracks and service remote settlements. The railway is good for heavy goods, but it lacks the human touch of the road.

In the region better roads in the western zone could open up the rich agricultural areas in Mbulu and Hanang Districts for wheat, maize, beans, castor seed etc. The produce would reach the Market through Arusha town where there is a railhead.

The existing areas of most advanced agricultural growth are also, on the whole, areas of high population densities, and here the shortage of land is already becoming a major problem. To relieve this pressure, resettlement in new areas must take place. This can only be done if a number of the areas which appear in the map cited as having poor access to the road network are given connections to a wider market, and hence can play their part in increasing agricultural production.

Bus Services and Passenger Transport

In the past, there was no urban bus network in any of the region's

towns - especially the main towns of Arusha and Moshi. Only recently after Decentralization we find the regional authorities (Kilimanjaro Development Corporation and Arusha Development Corporation) providing town bus services. This service is only available in Arusha and Moshi towns. It serves the towns and the intermediate settlements. It started off being very successful and with better management its future is very bright.

As for long-distance travel, we also find this region very well served by buses and coaches. There are daily bus services run by the national bus company (DMT) and a Kenya-based bus company - OTC - from Moshi and Arusha to Nairobi, Mombasa, Dar-es-Salaam and Tanga. In addition, there are also bus services, run by private operators, to Mwanza and Musoma on Lake Victoria. East African Railways also operate a service from Arusha to Dodoma and Iringa three times a week. On all routes too, there are private buses supplementing the above services, and the best stretch of road is that between Arusha and Dar where the number of private operators on this route is more than four. Thus, it is possible to get connections to any part of Tanzania and East Africa from this region.

The towns of Moshi and Arusha are very well served by a frequent service of buses and mini-buses. There are buses between these centres almost every 15-30 minutes daily. Some of the buses also pass through the new airport at Sanya Juu.

Rural Bus Services

All intra-regional buses are operated by private individuals and carry people from the rural centres to the nearest towns for shopping, or to catch connections to other destinations in the region or elsewhere. The distribution of such service depends on the population in the particular area, and on whether there are rich people in the village who can purchase a bus for passenger service.

On the whole, the populous rural areas round MT. Kilimanjaro get the best rural bus service and in some areas in this zone eg. Marangup Momba, and Kilema there are buses to and from Moshi almost throughout the day. Another well served area is the Machame and Kibosho area. On the other hand the remote areas, or those with scattered population - for example Masailand and Mbulu - buses are very infrequent, sometimes only one bus service a day. In such places, the vast distances to be covered in order to reach an urban area are so big that fares charged sometimes deter people from travelling too often.

Obviously, there is room for the L.A.s concerned to try and improve the services in some of the districts where travelling is too difficult. In some of the heavily populated areas, round the towns of Moshi and Arusha, the urban bus service could be extended to such areas to ease the pressure put on private operators who frequently overload in order to satisfy the demand and whose observance of timetables is very inefficient and neglected most of the time. Any suggestions for a more rational bus network, however, would require a study of origin-destination travel desire patterns, and potential load factors. Plans are at hand to connect this region with a very good up to date road with Mwanza on Lake Victoria. Surveys have already been undertaken and it is expected that money will be allocated for this project in the coming Third Five-Year Plan. Apart from making the possible exploitation of the areas around Mbulu for agriculture, this road will make passenger travel west shorter and more comfortable.

1.72. RAILWAYS AND RAILWAY TRANSPORT

Relatively reliable and independent of the weather is the railway. This region is served only by a short rail service which links with the ports of Dar, Tanga and Mombasa in the south and east and with the city of Nairobi in Kenya. The railway is part of the East African railway network run jointly by the three East African countries under the management of the East African Railways and Harbours (part of the Community Services).

The line which serves the region is the Tanga line which is 271.5 miles long, and connects Tanga with Arusha. The first portion, the 218 miles from Tanga to Moshi, was begun by German private enterprises in 1893 and taken over by the government and finished in 1911. The extension to Arusha was built by the British administration, and was opened in 1929. From Moshi there is an extension to Kahe and Voi, in Kenya, which was built by the military authorities during the First World War. The line was built specially to link the agricultural areas to the outside world, with particular regard to the main cash crop here of coffee.

The railways move a lot of cargo yearly from this region. The main crops include coffee, sisal, cotton, wheat etc. For example, in 1967, the produce through Moshi station amounted to 140,000 metric tons. In addition, the bulky imports like heavy agricultural machinery, petroleum, animal feed and other commodities come in by rail from Tanga, Dar or Mombasa and in 1967, these amounted to over 190,000 metric tons worth of goods. Today there has been an increase both in the export and import tonnage following new investment both in agriculture and industry in the region.

The railways also operate a passenger service from Moshi and Arusha to various destinations both in Tanzania and even Uganda and recently the frequency has been increased to several destinations. However, there is still competition with coaches and buses which are faster and more frequent. This is a challenge which cannot be ignored and if the railways are to stem-off this competition, some improvement in the current time tables and the present poor state of third class travelling are called for. However, Tanzania alone cannot take a unilateral action since the railways are managed by the EAC therefore, the three countries of the Community must act together.

The aim of any efficient traffic allocation policy should be to encourage the railways to carry those products to which their kind of service is most suited, and allow the road transporter to do the same.

Railways can most efficiently carry bulky traffic over long distances while road transport is generally cheaper for moving smaller loads over short distances. There have been signs over the last few years that this kind of division of labour has been developing and there are plans to replace the whole operation of the railways in Tanzania in the near future. Diesalization will be completed for the the whole system by 1976.

Future plans concerning railways in the region, include an extension of the railway system from Arusha to Mwanza, and a link of Moshi to Nairobi by a direct line via west Kilimanjaro.

Thus the importance of the railway system in the region cannot be overemphasized. It helps the agricultural sector and industry too, As industry expands in Arusha and Moshi, so too will be the tonnage to be handled by the railways. The rail connection between Moshi and Arusha is likely to diminish in importance as road traffic develops.

1.2.3. AIR TRANSPORT

With respect to air transport, there is a daily direct communication between Moshi and Arusha, Nairobi, Mombasa and Dar, by East Africa's domestic airline - East African Airways, Air transport is particularly suitable to the vast distances and good climatic conditions not only in this region but for the whole of Tanzania.

Currently, the main airport in the region is the Kilimanjaro International Airport - the second International Airport in Tanzania - built mid-way between Moshi and Arusha - at the Sanya Juu plains, There are also other airfields dotted all over the region.

There are three categories among the classified airfields. Airfields inspected daily (category A) are generally used for normal commercial traffic while those inspected once a week (category B) carry light aircraft on unscheduled flights. The only category A airfield in the region is in the Kilimanjaro International Airfield.

which replaces the functions of the former Arusha and Moshi airports for passenger transport (scheduled). Those at L. Manyara and Same are category B. In category C, the airfields are generally used for special services, and there are no inspection reports. Such airports are at Loliondo, Oldeani and Ngare Nairobi - all tourist-serving airports.

A large number of emergency landing strips are also found throughout the region. All the airfields inspected daily can handle Dakotas, which until recently were the main type of aircraft used locally in East Africa. The new KIA can handle the larger Fokker Friendship which are replacing the Dakotas on the busier routes and can also handle even the Boeing 747 although it is sometimes before much large planes land here since most of the operators prefer the established staging point at Nairobi.

The number of passengers handled per year exceed over 15,000 and the number may increase in the future when KIA is well established. Freight carried also has gone up, for example the freight loaded at Moshi (before transferring business to the new airport) went up from 30,107 kgs. in 1968 to 52,995 in 1969. ⁽¹⁾ Apart from passengers and freight, air transport also includes mail transport, for the Post Office. (see the Tables below).

With the continued increases in tourist traffic and the potential growth of freight, international traffic is likely to continue to grow rapidly. It is expected that tourists will fly direct to this region's attractions through this airport, and hence net more money which is currently being spent in Kenya. This Northern Tourist Circuit benefits not only the national airline but also local air transport which carries people from Arusha to the various National Parks - L. Manyara, Serengeti, Ngorongoro etc. Tim Air is one of the private airways which seems to be doing very well out of the tourist traffic in the region, and works from its base at Arusha.

EAA regularly acts as a host to a number of parties of overseas

travel agents, escorting them on tours throughout the territories. The Special Tours Section is permanently expanding to meet growing interest of overseas visitors who want to spend their holidays in the game parks and amidst magnificent scenery which the countries provide.

TABLE 93 AIRFIELDS BY TYPE AND BY REGION AS AT 31 DECEMBER, 1969.

<u>Airfield</u>	<u>Elevation</u> ¹	<u>Dimension</u> ²	<u>Class</u> ³	<u>Category</u>
<u>ARUSHA REGION</u>				
Arusha	4,550	1,594	G	A*
L. Manyara	4,150	1,220	G	B
Loliondo	6,800	1,097	G	C
Oldeani	4,600	1,006	G	C
<u>KILIMANJARO R.</u>				
Moshi	2,801	1,480	G	A*
Same	3,000	1,143	G	B
Ngare Nairobi	4,300	1,237		C
1975 - Kil. Int. A.	2,801	N.A.	G	A

Notes: 1. Approx. above sea level

2. Length in metres of main runway

3. G = Government

A. Those inspected at least once daily

B. Those inspected at least each week

C. Aerodrome for which no inspection reports are received.
pilots and operators of aircrafts, intending to use such
aerodromes to obtain information about the serviceability
of the landing ground before its use.

* Passenger traffic (scheduled) shifted to KIA.

Source: Regional Perspectives, pg. 100.

Kilimanjaro Region. Ifil.

TABLE 94 COMMERCIAL AIRCRAFT MOVEMENT - PASSENGER, FREIGHT AND MAIL.

Airport	Year	<u>No. of Passengers</u>			<u>LOAD (Kqms.)</u>				<u>Mov'ts</u>
		<u>Embarked</u>	<u>Dis'd</u>	<u>In Tras</u>	<u>Freight</u>	<u>Mail</u>			
					<u>Loaded</u>	<u>Off-L'd</u>	<u>L'd</u>	<u>O.L'd</u>	
Arusha	1968	6633	6545	3374	36722	71730	14984	3569	3440
	1969	7021	7031	2759	28119	76442	12334	18364	4244
Moshi	1968	6529	6244	12415	30107	60337	17257	26283	2480
	1969	5920	6575	14176	52995	48098	16575	3405	2776

Source: Regional Perspectives - Kilimanjaro Region, IFIL.

17.4. TRANSPORT SERVICES

Transport services comprise petrol stations, filling stations and duka petrol outlets. These are found mainly along main transportation routes and at road junction points. Petrol is available in all the existing Urban and Rural centres but less than half of the Market or Local centres.

Fully equipped service stations are only found in the large centres of Moshi, Arusha, Same and Mbulu since they are all (except Mbulu) on the trunk road system to and from Dar and Nairobi.

An assessment of the potential for the establishments of new service stations would require a forecast of the increase in motor vehicles ownership in the region. It is safe to say that since the government has tightened control buying of private cars by severe import restrictions, future need for the above services is limited to the need of passenger vehicles, lorries and farmer's needs for fuel to run their agricultural machines. In some places the established services stations may close down due to the lack of demand. In addition, the current high price of petrol limits the number of people who can afford cars anyway, and hence the demand for service stations in the region.

Summary - Transport and Communication

On the whole, this region is very well served both by road, rail

and air. Areas needing improvement are the Masai and Mbulu districts where the present services are very low. The future demand of these services will encourage great development in the region and this in turn will increase the income of the people. Most of the transportation problems experienced at the moment will take time to solve and care should be taken to have an integrated transport policy that ensures efficiency and avoid duplication of services.

REFERENCE

1. Tanzania in Maps - B.L. Berry, ed. Dar-es-Salaam 197. pp 82.

CHAPTER 18 - SETTLEMENT AND URBAN DEVELOPMENT

Settlements in the Northern region can be divided into two categories: Urban settlement and Rural Settlement. Subsequently, the rural settlement can be further sub-divided into traditional settlement and the new Ujamaa settlement.

There are only a few major urban settlements in the region and within their boundaries reside high income Africans, normally government officers and European and Asians and other African workers and their families. The best residential areas are mostly occupied by the high income Africans, Europeans and non-trading Asians. Asian traders tend to concentrate in the centre of the town, since they prefer to stay permanently on their trading premises. The low-income urban Africans live either in the low income housing estates or crowd in slums and shanties on the periphery of the town.

Rural settlement is composed mainly of Africans, although some few Asians traders can be found in the rural trading centres. The Africans in the rural area have preferred to build their houses widely spread over large expanses of land. The land surrounding their houses is used for cultivation of both subsistence and cash crops. Due to the rising expenses of supplying for a big family, individuals of nuclear families is increasing. Other families have now moved into the new ujamaa villages established by Government for a wide variety of reasons - e.g. in this region - to relieve the population pressures on the highlands of Kilimanjaro, Meru and Pare.

With the above background, this chapter goes to examine the three settlement types in the region, starting first with the original traditional villages then Ujamaa villages and then finally - urban settlements.

18.1. TRADITIONAL SETTLEMENTS

The Physical Form and Structure of Traditional Settlements⁽¹⁾

The form of the traditional village settlement is the most obvious

manifestation of social and economic organization, in this region, as in most of Tanzania, the majority of the rural population live in dispersed farmsteads and only in a few areas are more nucleated clusters to be found. There was no motive for such nucleated villages, because the population had no motive of being gregarious. The provision of goods and services from one central place is not important enough in the lives of most people to persuade them to move from their farm, where they are best placed to carry out their daily tasks. Where no threats from an enemy or from wild game exist, family habitations are scattered fairly uniformly through the cultivable land. Thus in the Pare area, the village settlement was composed of a family cluster of two or three huts and a cattle pen on every knoll and spur. Market centres are found every few miles to serve the surrounding community. A similar pattern is found in the Chagga area and in Meru, although here the houses and accompanying banana groves are sometimes interspersed with more open clusters. On the other hand, the establishment of Missions, Administrative Centres and railway stations has given rise to new concentrations in some areas. However, the detailed distribution of houses in relation both to each other and to the land which the household farms varies considerably according to the social organization and to the form of the economy.

In general four types can be distinguished. Among dispersed settlement forms can be recognised those with complete individualization of homesteads such as in the Meru and Kilimanjaro areas; a second sub-type is the scattered impermanent settlement of the pastoralists, notably the Masai. Nucleated settlements can be found among the Sonjo who cluster for defensive needs or among people in the dry areas of lower Kilimanjaro. These people cluster mostly along or near a traffic junction and have farms surrounding their village.

These types of village settlement will be described below to give a picture of the range of variation which may be found between some of the

large ethnic groups in the region. It must be remembered, however, that what is described is essentially the traditional form. As social and economic conditions in the region, and in the rest of Tanzania, change, so too do the settlements.

(a) The Kilimanjaro Chagga Settlement Pattern

As is known, this area is densely populated and very fertile for the growing of various crops. It is characterized by a banana-coffee economy plus other minor crops like maize, beans, various vegetables etc.

The settlement pattern is essentially dispersed, each homestead being sited on the family holding over which it has individual rights of tenure from the clan.

The family plot, or "kihamba", is intensively cultivated. Banana is the traditional crop with beans and sweet potatoes. Maize and millet are the dominant grain crops grown mostly in the lower plains of the mountain and coffee is the major cash crop. Sheep and goats are reared and stall fed because all the vacant land is almost all cultivated or difficult to get to because the settlements are very dense.

The traditional house is of the beehive type with internal partitions which divide the house into a number of sections for beds, for livestock and for cooking. In very many areas today this type of house has almost disappeared being replaced by a modern house for living and a separate house for animals. The modern houses are built of brick and mortar or stone and the roofing materials is chiefly iron sheets (corrugated). In fact it can be said that this part of Tanzania is the most advanced one in terms of having modern, up-to-date houses in the rural areas built through individual family efforts.

The present system of family tenure, two-thirds of which is customary, is a bottleneck to agricultural development, and also fragmen-

tation of holdings is very frequent. Right of occupancy is given under statutory tenure for 99 years with a maximum period of 5 years for initial development. A tenant may transfer to a new abode only with permission of the Regional Officer. Rights of occupancy are granted to expatriates and to N.D.C. but with respect to nationals such rights are only granted on a group basis.

Sixty percent of the tenancyship is of a customary nature, and this permits greater and greater fragmentation of holdings in this area, when, in fact, consolidation and amalgamation are required for rational agricultural growth.

Most of the Chagga settlements are now served with a number of village shops located at cross roads, market places and in other spontaneous areas (locations). Through self-help efforts, the majority of the settlements are now accessible by road, primary schools are plentiful, community centres built and now life in the villages is fairly pleasant.

(b) Meru Settlement Pattern

Their system is very similar to the Chagga except in this case it is distinguishable by its greater extent of pastures. There are considerable areas of uncultivated land on the mountain which are used as communal grazing (ngaro). Cattle, sheep and goats are reared, the small livestock being kept near the homestead where they provide manure. The cattle are often communally herded, two or three farmers keeping their stock on one communal 'kraal'.

The Meru house is in characteristic 'cone-on-cylinder' form, although it is likely that this has derived from an earlier 'bee-hive' shape. An internal circular partition divides the house into an inner livestock pen and an outer ring in which are the sleeping and living quarters and the hearth.

As in the Kilimanjaro area, most of these traditional settlements are giving way to modern houses with the settlements becoming more compact in character.

(c) The Masai Settlement

Their type of settlement is different from the above since, until very recently, the Masai have always been on the move all the time searching for better grasses for their animals. Hence, they build scattered impermanent settlements. The cattle herds dominate the social and economic life of the community.

Each household has a herd which is usually pastured in common with those from 4 to 6 related households. The cylindrical/round or sometimes rectangular flat-roofed houses are normally grouped around a circular courtyard which acts as a cattle byre 'kreal'. This is surrounded by a thorn hedge to protect themselves and the animals from wild animals or cattle thieves.

The houses vary from 2 to even 6 depending on the number of wives and grown up sons and the herd the household has. The houses's roofs are covered with branches and grass and smeared with cow dung. The strange thing about the Masai is that it is the wives who build houses and not men. The men's work is to graze the cattle.

When the shortage of grass, or water is imminent the household just pack up their belongings and travel to a better place and settle down. However, this practice is decreasing now as more Masai settle down to take up farming.

(d) The Sonjo Settlement Pattern

These live in nucleated settlements with their houses clustered - caused by defensive needs in the past. Much about this settlement pattern has been written by Griffiths, 1940; Fosbrook, 1955; Gray, 1963 etc. (2)

This is a small Bantu group living in the midst of the Nilo-Hamitic Masai . The consequent fear of attack led the Sonjo to group themselves into five large communal villages of 100-200 families each, (Samunge, Digodigo, Kisangiro, Oldonyo Sambu and Sale) situated on easily defended positions. Each village is surrounded by a thick palisade, reinforcing a natural forest barrier, and can only be entered by a small, strongly fortified gate. As much agriculture as possible is carried on within the defenses, using a well-developed system of irrigation. However, now as the danger of raids is much less than in the past, the Sonjo are spreading out their settlements.

The other group who used to have a settlement pattern similar to the Sonjo are the LRAQUOPEOPLE of Arusha Region, but these have now spread from the Kainam area into the area around Mbulu; Again demonstrating the different pattern of settlement that can result when danger no longer threatens (Fosbrooke, 1954). The earlier settlements were situated on easily defended hill-sides, and in many cases the houses were actually dug into the slopes for protection. In contrast, the areas of newer colonization contain a much more dispersed pattern of homesteads, most of them with round grass houses, which are more comfortable and healthy than the excavated type. (Mackay, 1968 pg. 39).

Thus it is seen that in general, the traditional pattern of rural settlements in much of this region consists of small, scattered groups of dwellings, except where the needs of defence give rise to clustering. Once such danger is removed these nucleations generally break down into small groups of homesteads over the cultivated area. Although in much of the region especially in the Kilimanjaro and Meru areas there are literally thousands of villages, with names, these have no well-marked physical centres and this makes the task of delineating village centres for settlement hierarchy exercise more difficult. In places like Masailand where village settlements keep changing locations, the physical planner is very much limited in his task of assessing the need for social and other

physical infrastructure.

18.2. UJAMA (CO-OPERATIVE AND COMMUNAL) VILLAGE SETTLEMENTS.

The next and newest type of rural settlements in the region, are the Ujamaa village settlements. These were set up right from Independence but the idea did not catch up till the Arusha Declaration of 1967.

In order to get the full picture of the Ujamaa movement, its aims, progress and achievements in the region a short summary of these is given here. The idea of establishing new agricultural villages has for some time been a cornerstone of Tanzania's development policy. Two basic considerations have always been part of the rationale for this approach. Firstly, there has been the desire to reduce population pressure in a number of high-density areas - notably, Kilimanjaro, Pare and Meru in the study area and Usambara and the Southern highlands - outside the study area. This could be achieved through the settling of the surplus population in less crowded, generally lowland, areas. Secondly, it has become clear that if the rural population could be concentrated into compact villages the provision of infrastructure and social services to them could be made much more simpler and cheaply. As noted earlier, over most of the region, and Tanzania as a whole, the traditional settlement pattern is one of scattered farmsteads and hamlets, and in 1962 President Mwalimu Julius Nyerere noted that:

"Before we can bring any benefits of modern development to the farmers of Tanganyika, the very first step is to make it possible for them to start living in village communities" (3).

While these two considerations have remained important, other aims have been given prominence at various stages of the programme and the form and organization of the proposed new settlements have shown considerable variation.

Even during the colonial period some new villages were set up, such as the compact settlements designed to make settler eradication more

simple. However, the major programme resulted from the recommendations of the 1960 World Bank Mission. A distinction was made between the 'transformation' and the 'improvement' approaches to rural development. The improvement approach involves the gradual improvement of agricultural methods through the existing extension service. The transformation approach, on the other hand, aims to achieve rapid progress through the concentration of investment and trained manpower in a few areas resulting in drastic modifications of existing methods production.

In the First Five-Year Development Plan (1964-69) the Tanzania Government clearly opted for the transformation approach, and proposed the setting up of the village settlements.

These villages were to consist of some 250 families and involve a total investment of about 3 mil. shs. and would resettle farmers from high density areas in potentially good sites in less well-populated areas⁽⁴⁾. Each settlement would grow one major cash crop, using new methods, fertilizers and a high degree of mechanization. It was hoped that the settlers would form a nucleus of modern farmers and act as a demonstration to farmers living in the surrounding areas. The Rural Settlement Commission was set up in 1963 to initiate this programme, and in 1965 control was taken over by a new division of the Ministry of Lands, Settlement and Water Development. Considerable investment was to be made in infrastructure to serve these schemes, and the whole investment was to be recovered over a 20-25 year period. Supervision was also to be provided for each scheme, in the form of managers, technicians and clerks. The division also took over control of the settlements set up on the sites of the abortive Groundnut scheme, and the Israel-sponsored Agridev Schemes in the Lake Victoria area. By the end of 1965 22 pilot settlement schemes had been established, consisting of a total of some 6,000 hectares.

In the study region the first village establishment in that period

was Upper Kitete in Mbulu district. This 6,500 acre wheat scheme got off the ground well and has since been very successful.

By 1965, it became clear that the Ujamaa programme was running into severe difficulties. Most schemes had been overcapitalized, leaving the settlers with a heavy burden of development. Many settlers were found to be unsuitable, and there were severe problems of discipline. The government soon appreciated these problems and the whole programme was slowed down, and there were drastic cuts in cost wherever possible.

At the same time there were important developments in the political field culminating in the Arusha Declaration of 1967, the basic components of which were an increased emphasis on rural and agricultural development, coupled with a movement towards rural socialism that stressed the building of ujamaa (co-operative and communal) villages rather than state farms, estates or individual peasant farms. A new educational policy fitted into this framework by reflecting socialist values and by emphasizing primary education and preparation for a rural existence. The whole was essentially a statement of socialism and self reliance.

With the subsequent publication of President Nyerere's policy statement on 'Socialism and Rural Development' in 1968 ⁽⁶⁾, the whole approach to new settlement took a different direction. Instead of massive outside support, the importance of rural mobilization through Ujamaa villages was stressed. The Objectives behind the creation of these villages were to synthesize the old-style of life in terms of mutual respect, holding of all basic goods in common and the obligation of all to work with a new style of life which removed both inequality, of women especially, and poverty. The goals that have been set will be achieved..." the basis of Tanzanian life consists of rural economic and social communities where people live together and work together for the good of all, and which are interlocked so that all of the different communities also work together in co-operation for the common good of the

nation as a whole" (J.K. Nyerere 1968. Ujamaa:Essays in Socialism.Dar 1968)^(f).

The pilot village settlements had always suffered from a lack of settler identification with the scheme, so it was important to encourage farmers to build up their own villages. The aim of grouping people into compact villages remained, but the transformation approach was rejected as a solution to the national problem of development.

At the same time, there was a rejection of many features of the improvement approach. Communal work on land held in common by the village was to replace the previous pattern of improving existing small holdings.

Village Location and Planning

There is no formal definition of an Ujamaa village, nor is there a standard process through which something becomes or is recognized as such. The usual procedure is for the Regional Development Committee in each region to recognize a village when some move towards co-operation occurs; subsequent stages are more exactly formulated (Table 95). The basis of minimal recognition varies between regions and is liable to coincide more with political ends than the level of social-economic co-operation; a large amount of status is attached to a large number of villages, hence the wide fluctuations in estimates.

Official criteria for recognising ujamaa villages are still evolving. The present conditions for a village to qualify for government assistance are extremely vague; firstly, it must have a minimum number of registered members and a constitution, both of which must have rights of occupancy over the area occupied, within which there must be certain degree of planned and effectively managed production with a minimum (unstated) number of hectares for cash crops under communal cultivation.

Up to 1972 there were 70 Ujamaa villages in the region with over two-thirds of these being in the Districts of Arusha, Masai and Mbulu. The 70 villages had a population of 16,500 (only 2,500 in the Kilimanjaro region),

with a mean village population size of 240. Linked with the development of the Kilimanjaro International Airport is the proposed establishment of various ujamaa villages. Some of the villages already established in the area include Meru village with a total acreage of 13,000; Ngurdoto Ujamaa village also, 3300 acres and Majengo village, 7,900 acres. Others include Makimeru, Makiba, Valeska, Kwa Ugoro, Kikati etc. In Kilimanjaro district we have Uru Chini ujamaa village, Majengo and a few new ones east of Moshi.

Other advancing ujamaa villages in Arusha district are: Oljoro village - with a population of over 150, Burawani with 325 residents; Kazemoyo village with 153 peasant farmers, to mention *a few*.

Leading in Mbulu District are the Upper Kitete Ujamaa village with 674 residents, Diyamoti ujamaa village - 313 residents, Yeeda Chini village with 263 farmers etc. Over 2,600 people live in ujamaa villages in the district.

Hanang District has over 300 villages with a population of about 8,700. Among the leading villages are Ditima, Nangwa and Maganjwa Ujamaa villages.

Well over 6,600 peasant farmers live in 22 ujamaa villages in Masai District, the leading villages being Kijungu, Dosidosi, Kilombero and Msente. Through improved farming methods these villages are fast forging ahead in development.

In Pare District the main settlements are connected with irrigation schemes along the Pangani and the Nyumba ya Mungu Dam. These include the villages of Kahe and Nyumba ya Mungu.

The majority of the above villages are in the formative stages, though we find a village like Upper Kitete being one of the most successful villages in Tanzania. The study region ranks the lowest in terms of the number of ujamaa villages so far established. This is due to a number of

TABLE 95 UJAMAA VILLAGE CHARACTERISTICS - THE NORTHERN REGION

Region	<u>Number of Villages</u>			<u>Stage(1971)</u>			<u>Reg'ded Co-op Soc's</u>		<u>Population of Ujamaa Villages</u>			<u>Mean Village population size</u>			<u>Regional population '000</u>		
	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1970</u>	<u>1971</u>	<u>(Jun)</u>	<u>Dec.</u>	<u>1972</u>	<u>1957</u>	<u>1967</u>	
ARUSHA	20	25	59	N.A.	47	11	1	1	1	5200	1400	N.A.	210	190	240	N.A.	4075 6104
KILIM'RO	7	9	11	13	11	-	-	-	3	2700	2500	3321	300	180	240	N.A.	474 653
TOTAL	27	34	70	N.A.	56	11	1	1	4	7900	16500	N.A.	510	370	480	N.A.	881 1263

TABLE 96 BREAKDOWN OF VILLAGES IN KILIMANDJARO REGION - 1972.

<u>District</u>	<u>Number of Villages</u>		<u>Number of People</u>		<u>District</u>
	<u>U. Villages</u>	<u>Co-op Villages</u>	<u>Average per Village</u>	<u>per Village</u>	
Moshi	6	-	173		1,211
Rombo	1	-	150		150
Pare	6	3	280		1,960
TOTAL	13	3	222		3,321

Source: KNP 1974/75 Plan. op.cit.

factors: People like the rich Chagga on Mt. Kilimanjaro practice a very successful capitalist agriculture and are reluctant to move to other areas. On the other hand a tribe like the Masai also do not favour settling down to do some agriculture.

Thus it is found that - in common with the general trend in the whole of Tanzania - majority of the ujamaa villages are located in economically less developed areas - e.g. Mbulua and parts of Pare and Rural Arusha Districts. Districts with the fewest villages, especially in relation to population totals - Kilimanjaro, the higher parts of Pare and Meru in Arusha District - are areas which are fairly well-off in agriculture. For example, in the Moshi and Rombo District in Kilimanjaro, no villages had been successfully established until 1971; one early attempt was very short-lived ⁽¹⁾ (Mboya, 1971-G.R. The Feasibility of Ujamaa Villages in Kilimanjaro, Tanzania. University of Dar, in Proctor, J.H. (ed.); also ⁽²⁾ Building Ujamaa Villages in Tanzania, University of Dar Studies in "Political Studies - Vol. 2"). In the Kilimanjaro area people already live in very compact villages and the land shortage is so critical that no spare land can be acquired to locate such villages. In addition most of them already have clean, sometimes, piped water and number of social facilities etc. The best location of such villages will be further down the highland zone in the plains where land is still plentiful.

In poorer areas in the region, there is a general availability of free land, and the lack of social and economic capital in these areas may make particular kinds of government sponsored innovation at least likely to meet a favourable initial reception. Yet these areas are also the least developed socially and this has resulted in some problems of reorganization and administration. In terms of levels of co-operation achieved many of the villages in the poorest areas are very rudimentary and a long way from communal operation.

In the rich areas of Kilimanjaro farmers have always opposed the movement

into Ujamaa villages. The conditions of the peasants are critical to their decision to join the ujamaa villages. Generally large farmers are unwilling since they are already successful and in the short term their production, and hence profits, are almost certain to decline. Very poor farmers are conservative for other reasons. Their low margin enables little scope for experimentation and innovation and they are concerned about co-operating with non-kin and the future of their rights after their death. Obviously this is particularly so in the poorest districts; and especially among pastoral areas; hence there are few ujamaa villages in the Masai District. Those who are keen to join are young men, often without any land, who are untypical of the general population of Tanzania.

For example, Gulliver (1969)⁽⁷⁾ argues that the extreme conservatism and resistance to change of the Masai are directly related to their ecological situation in some of the poorest area of the region, with very low and unreliable rainfall. Further, a herdsman has less margin of error than a settled agriculturalist, whilst quality improvement of cattle aimed at marketing the surplus offers little to the Masai social and cultural system. The only innovations likely to be successful are those that promise direct utility - without increasing risk, such as water supply, cattle medicine and bus services. This kind of "conservatism" is certainly not unique to the Masai and occurs in differing degrees in almost all the pastoral peoples few of whom have good reasons, based on historical precedents, to welcome any kind of government intervention.

The Physical Planning of Ujamaa Villages

There are essentially 4 different kinds of ujamaa village; Those established by regional authorities; those established voluntarily by the people; traditional villages beginning to co-operate and transformed settlement schemes. There are therefore, two different kinds of planning situations, one for a new village and one of reorganization of an old village (or old settlement scheme); the latter is increasingly

becoming more common. Where traditional villages have begun to undertake co-operative activities, little replanning is required and often the only indication of ujamaa are new community buildings (such as dispensaries and community halls) and some modern housing. There is no indication that their long establishment has resulted in more rapid progress towards communal operation; indeed the reverse is true. Since the ujamaa villages were supposed to be at least partly spontaneous, the idea of a plan to guide this spontaneity is clearly partly contradictory. Similarly, a statement of the expected final size of a village is premature, both in anticipating some kind of finality in progress towards ujamaa and in setting limits which will clearly have considerable regional variations. Consequently there has been almost no consideration of possible sizes of ujamaa villages, and already there are considerable variations, from the tiny villages in the pastoral areas which have less than 10 households and some villages with near or above a thousand households - For example Chemwino in Bagamoyo had reached 6,000 by 1971, whereas those around Kilimanjaro - had between 80-120 families.

The majority of ujamaa villages in the study region have been new creations and this itself represents a transformation and relocation of the Region's rural society, since very few peasants lived in organized, planned villages before Independence.

The village settlements are established principally according to two model layouts: either in a single, large village of 250 families around a service centre or 2 or 3 smaller villages of about 80 families grouped around a common service centre. Normally, each village occupies some 300 acres with farmlands of between 2,500 and 3,750 acres, depending on the availability of irrigation and hence the intensity of cultivation.

In general, ujamaa villages should be sited ⁽⁶⁾ in areas containing potentially productive soils and an adequate water supply; they should be near lines of communication like a good road and also a number of other locational factors are taken into considerations in choosing the optimum

site and location. Once the site is chosen, a physical plan is drawn up following a survey of the site. In the plan spaces are reserved for public buildings, roads for access, residential plots, industrial (cottage) sites etc. just as one would go about making a plan for a New Town, though this is on a smaller scale. In addition, farmers are allocated fully economic agricultural holdings; farming systems and cropping patterns are carefully drawn up according to land use capability and adequate provision is made for soil conservation. Other general principles of design are taken into account in making the layout of the villages including landscaping. Because of the shortage of planners, very few villages however, are actually planned and designed satisfactory, and the problem has to await the training of more planners.

Farmers in the majority of these ujamaa villages have usually come from within a five-mile radius of the new village centre. This short distance enables them to make a gradual move, relying on their old shambas (farms) until the new ones are producing food, and it involves little administrative assistance. In a few cases, the government has encouraged people to move longer distances away from areas of heavy population pressure to new villages in underpopulated parts of the country. In September 1969, 900 Chagga farmers moved from the slopes of Kilimanjaro to the Mwezi Highlands in Mpa District (Tabora) some thousand km. away. Moves of this kind must be carefully organized by the government, which must provide minimal rations to cover the period of establishment.

Those farmers who joined the early ujamaa villages were those subject to the most intense political persuasion. Many farmers go to these villages in search of new land, or simply some land, other have been more attracted by better services such as the planned schools, dispensaries etc. Thus the physical planning of these villages provide a better place to live than in the previous old villages which lacked a number of essential services.

It is likely that ujamaa villages will act as a major deterrent to the high rate of rural-urban migration in the region. Successful villages, like Upper Kitete, will act as alternative foci for rural migration, especially from the densely populated areas of Kilimanjaro and Meru but skill young men are leaving the early established villages to the urban-industrial economy which is developing concurrently.

The Future of Ujamaa Settlements in the Region

Currently there have been many problems, some of which are critical to the future success of rural development. There is no overall logic to resource allocation of ujamaa villages; tractors and fertilizers are not handed out according to local or regional need and there is growing competition rather than co-operation between ujamaa villages for scarce resources (cash from the Regional Development Fund or credit from the Rural Development Bank). Most significantly, no single village can yet be considered an overall success.

In the region, the success of some of the villages is dependent on the organization and as to whether more people join these villages. Definitely, the people in the Highlands of Kilimanjaro and Meru have to move down to the plains where they will live in ujamaa villages to ease the population pressure on the highlands. Others will have to move to the fertile areas in Mbulu and Hanang Districts. Steps so far to establish ujamaa villages around the Kilimanjaro Airport point to a future success at least to get people from the congested areas both in the rural and the urban centres of Moshi and Arusha.

With the latest call by government for all people to live in ujamaa villages by 1976 a lot of activity is already taking place to implement this policy though the time factor is too short.

Movement into ujamaa villages in other parts of the region like in Masai, Hanang and Mbulu will also take long to achieve because of the

conservative traditions of the people here. A lot of persuasion will be required to get the co-operation needed.

In Sum therefore, it is seen that in the not too distance future we shall see the whole population of the region, or most of it, living in planned ujamaa villages with clean piped water, schools, dispensaries, mains electricity and such other amenities. Agricultural production will go up and cottage industries will be established. These will help to keep people employed and hence go some way in solving the problem of rural-urban migration and the current problem of rural underemployment.

SECTION B -

1.8.3. URBAN DEVELOPMENT - TOWNS AND SERVICE CENTRES IN THE REGION

At the apex of the settlement hierarchy in the region, we find urban centres, which in this case comprise of the main regional towns of Arusha and Moshi, followed by the District Capitals of Babati, Same, Mbulu, Monduli and Mkuu and a few other smaller towns as Himo, Arusha Chini, Lembeni, Mto wa Mbu and Oldeani.

Most of the towns in this region are were established during or after the German period. During this period, the establishment of an administrative structure, the evolution of a communication network, and the establishment of social services, the development of commerce and a monetary economy all contributed to the widespread distribution of incipient towns. Since the establishment of the administration was often associated with pacification, in many of these places the boma, or the office of the administration was the largest and most important physical structure.

The twin towns of Moshi and Arusha and Same were all established during the German rule as administrative centres along the communication network in the form of the Tanga-Moshi railway built to exploit the rich areas along this line. Extension of the railway to Arusha came much later.

After the First World War, all these towns passed into the British hands until Independence in 1961.

In the Township Ordinance passed early in the British period, the centres of Moshi and Arusha were officially gazetted with others in Tanzania as towns. They were to function as centres for local government, commerce and agriculture etc. These townships, had boundaries, could fix and levy rates and had a comprehensive set of laws pertaining to health and government.

The Growth of Towns

Since the establishment of these two main towns, numerous other small towns have sprung up in the region and the early towns have changed in size tremendously due to development both in the region and the whole of Tanzania in general. Tanzania government policy in the Second Five-Year Plan was to re-orientate urban growth and development from the established centres of Dar, Tanga and Mwanza. Arusha and Moshi were among those towns picked as growth centres where industrial and other development was to be channelled.

During the 1948 Census, Moshi had a population of 8,048 and Arusha 5,230 and occupied the following positions in the rank order of towns - 8 and 10 respectively. Moshi then served as the capital of the then Northern Province (present study area) of the colonial administration. Arusha was an important centre for an African settlement. Table 97 shows where these towns stood in 1948 in relation to 1967.

By the 1967 census both Moshi and Arusha had passed the 25,000 population mark while Dar and Tanga continued to occupy the top two positions. Special mention must be made of Arusha which has risen from the 10th position in 1957 to become the fourth largest town in 1967, with a population of 32,3000 inhabitants. Its position in relation to Kenya and Uganda made it the logical choice in 1965, for the headquarters of the East African Community. The

TABLE 97 MAINLAND: POPULATION AND RANK ORDER OF TOWNS

Position	1948		1957		1967	
	Towns	Population	Towns	Population	Towns	Population
1	Dar City	69,227	Dar City	128,742	Dar City	272,821
2	Tanga	20,0619	Tanga	38,053	Tanga	61,058
3	Tabora	12,768	Mwanza	19,877	Mwanza	34,861
4	Mwanza	11,296	Kigoma/Ujiji	16,255	<u>Arusha</u>	32,425
5	Dodoma	9,414	Tabora	15,361	<u>Moshi</u>	26,864
6	Lindi	8,577	Mtwara	15,266	Morogoro	25,262
7	Morogoro	8,173	Morogoro	14,507	Dodoma	23,559
8	<u>Moshi</u>	8,048	<u>Moshi</u>	13,726	Iringa	21,746
9	Iringa	5,702	Dodoma	13,435	Kigoma/Uj	21,269
10	<u>Arusha</u>	5,320	Lindi	10,315	Tabora	21,022
11	Bukoba	3,247	<u>Arusha</u>	10,038	Mtwara	20,413
12	Mbeya	3,179	Iringa	9,587	Musoma	15,413
13	Musoma	2,967	Musoma	7,207	Lindi	13,352
14	Kigoma/Uj	-	Mbeya	6,932	Mbeya	12,479
15	Mtwara	-	Bukoba	5,297	Bukoba	8,141

Sources: Recorded Population Changes - 1948-67. Vol. II Census. 1970.

impact of this decision on Arusha had been similar to the impact of Independence on Dar. Previously Arusha was a market town with national and interterritorial linkages, but the Treaty helped to accelerate industrial development. The move of an administrative staff from Nairobi and elsewhere to Arusha and the growth of the institutions of the Community have contributed to this vast growth. Moshi on the other hand moved from 8th to 5th. The district capitals also increased their size with Same and Mbulu gaining higher status.

In most cases both in this region and in other towns in Tanzania, the increase in population has been due to the extension of the town boundaries than to natural increase or to an influx of migrants. For example, there were substantial boundary changes and increase in the urban

areas of Arusha - 1959 and 1964/65, and Moshi had its boundaries extended later too, to cater for expansion.

The minor towns in the region were trailing behind with populations like 6,018 for Arusha Chini, 2360 for Mbulu, Same 3,300 population, Monduli 2,172, Babati 1,544, Sanya Juu 1,934; Tengeru 1,416; Mto wa Mbu 1,140; Oldeani 1,050 and Himo with a population of 967. The total population in 1967 was 103,828. Today, all the above settlements and towns have recorded further population growth especially those settlements in which employment opportunities are greatest.

Urban Area Growth Rates: Population Change

Again analysis of the towns is based on the twin towns of Moshi and Arusha in comparison with growth in other towns in Tanzania. The changing pattern in the population size of the urban areas between 1948-67 is summarized in the table below. It shows ^{again} that town growth was the greatest in Arusha Town.

Between 1948-57 average growth rate for the 25 urban areas was 7% and between 1957-67, the overall annual growth rate of urban areas had declined to 6.5%. Both towns of Arusha and Moshi had above average growth rates in both periods with Arusha, because of its original small size, having the most spectacular increase of 12% p.a.

The average growth rate for the two towns was 9.5% p.a. It is estimated that by the year 2,000 the rate of urbanization will be about 20% and over unless measures to restrict growth are introduced. With this rate of urban growth and the present high population growth the urban centres will not be able to absorb the natural population increase for a long time to come. It will mean that in order to catch up, a number of urban services will have to be planned for and land has to be reserved for future allocation of services and infrastructure. Fortunately, land is still plenty within the existing town boundaries. The only constraint will be the availability of funds for the provision of services etc.

TABLE 98 RECORDED ANNUAL GROWTH RATE 1948-67.

Town <u>Town</u>	<u>Average Annual Growth Rate</u>		Town		
	<u>1948-57</u>	<u>1957-67</u>		<u>1948-57</u>	<u>1957-67</u>
ARUSHA	7.3	12.4	Musoma	10.4	7.9
Bukoba	5.6	4.4	Mtwara	-	2.5
Dar City	7.1	7.8	Mikindani	1.7	3.9
Dodoma	4.1	8.6	Mwanza	6.5	5.8
Iringa	5.9	7.1	Tabora	2.1	3.2
Kigoma	10.1	7.1	Tanga	7.0	4.8
Ujiiji	-	6.7	Ave. Growth	7.2	6.5
Lindi	2.1	2.6			
Mbeya	9.1	6.0			
Morogoro	6.6	5.7			
MOCHI	6.1	7.0			

Source: Census Vol. II. op.cit.

Town Distribution: Regional Variation

The majority of the towns in the region are concentrated along the communication (rail and road) line; hence Arusha, Moshi, Lembeni and Same are all established along the Arusha-Tanga railway line. Most of the rest are established along the main roads in and out of the region. Himoia established and located along the Moshi-Mombasa route; Mokuuni, Oldeani and Mbulu along the route to the West (Mwanza and Musoma); Namanga, Mto wa Mbu and Babati - on the Great North Road (Cape to Cairo route) and the other small towns act as Service centres for the region.

The towns serve the national park tourist traffic especially in the western part of the region where the majority of the parks are located. Tourism has brought great development in both the towns of Arusha and Moshi. New hotels are being built every year to cater for the ever increasing number of tourists coming into the region. This tourist development is also providing jobs and brings money into the region which is used to

develop the other sectors of the economy.

The region is too large a unit and internally too varied in resources for any rigorous detailed relationship to be established between towns and regional development. One area though stands out and this is the highland area around Mt. Kilimanjaro and Meru. Here the two centres of Moshi and Arusha have been influenced and also do influence development in the region because of the wealth generated from the rich coffee farms in the hinterland. The position of this region with a high percentage of town dwellers is indicative of the developmental advantages of these areas.

While not ignoring the fact that a number of inter-related factors account for the growth of the region's towns, for purposes of analysis, reference will be made mainly on three aspects.

First, the influence of the administrative structure on the town growth will be discussed. Secondly, the mechanism of urban population growth through migration will be examined and Finally, the livelihood of the people of the major towns will be elaborated on. These three aspects simultaneously represent aspects of the creation of towns, the manner in which towns in the region are populated and finally how the towns perpetuate themselves through the livelihood of their inhabitants.

The administrative set up of the country will remain an important aspect of the continued existence and growth of towns in this region. The former Provincial Hqs had a head start and was assured of growth because the colonial administration was the main source of wage employment in the non-agricultural sector. Another town which is experiencing growth similar to the above is Arusha, which is now the regional Hqs. for Arusha region.

In the changed situation it is particularly relevant to note that the administrative aspects are more comprehensive and less passive than during the colonial administration ⁽¹⁾. (census vol. 6).

The next level of hierarchy of the regional administration comprises districts, of which there are seven, the newest addition being Hanang and Rombo. The de facto situation is that each district has a capital which may be a town or a settlement with a recognizable cluster of population and services. Regional capitals also function as district capitals. Thus Arusha town is the capital of both Arusha region and Arusha District, so is Moshi town being the capital of Kilimanjaro region and Moshi District. The range in the size of the district Hqs. is summarized in the table below.

TABLE 99 DISTRICT CAPITALS

<u>Region/District</u>	<u>District Headquarters</u>	<u>Population (1967)</u>
ARUSHA	Arusha Town	32,452
Masai	Monduli	2,472
Mbulu	Mbulu Town	2,360
Hanang	Babati	1,544
KILIMANJARO	Moshi	26,853
Rombo	Mkuu	5,792
Same	Same	8,105

Source: Census Vol. 6.

With the process of decentralization, it is likely that the district headquarters will gain importance and size. The population growth of the District Hq will be accelerated because of the location of services there, justified on the grounds that these will serve the district population. Rombo district with its new Hq at Mkuu has experienced growth of late. A new masterplan for the new HQ has been drawn and already several offices and houses to cater for the needs of the district HQ staff have been built. Further growth is anticipated in the future.

Secondly, the rate of growth of the towns has been influenced by the productivity and development of the areas in which the towns are situated.

In this respect, Moshi and Arusha are centres for the coffee and tourist

industry, Mbulu, Oldeani, Babati are centres of the rich wheatlands; Arusha Chini has grown because of the sugar industry and others small towns like Ngorongoro, Mtwara Mbu etc. have grown due partly to the tourist trade. In the more developed and rich areas of Kilimanjaro for example, business is very brisk and various transactions have led to the mushrooming of several rural centres and market centres. These have been expanding tremendously as the income of the people in this area has been improving gradually. In contrast, in the vast dry lands and national parklands there are very few centres.

Overall, the fast rate of growth of the region's economy has been an important factor in the growth of the region's towns. The rate of growth of the region's economy, determines the rate at which urban employment opportunities become available. As the GDP has been increasing especially in the rich highland area, so has the purchasing power of the population. This in turn has stimulated the demand for manufactured goods and urban services such as retailing, banking, insurance and entertainment and has resulted in economically healthy towns - e.g. Arusha and Moshi with their successful commercial and industrial development - with increasing employment opportunities. These have been exerting a strong "pull" upon the rural population, tending to encourage migrants from the rural areas to the towns.

Thirdly, Transportation, especially where the break of bulk occurs, is another important factor which influences urban growth. Hence Arusha and Moshi owe their importance to their position in the road - rail network. So also are the small towns dotted along the railway especially in Pare district - e.g. Lembeni, Kahe, and Same. Most of the others are established at road traffic routes and junctions - e.g. Himo. These are resting places for travellers and also provide services to travellers - e.g. petrol, food water etc.

Fourthly, a combination of rural-urban migration and high natural

population increase rates accounts for big urban growth in this region. In this region, the scarcity of agricultural land is important in determining the rate of migration to the towns. In the areas where there is sufficient land available, e.g. in Mbulu and Hanang Districts, the natural increase can be absorbed by expanding the area under cultivation and the rate of urbanization will be low - as it is now. But where there is a shortage of agricultural land, e.g. Kilimanjaro, Meru and Pare, an excess of births over deaths will cause rural population densities to rise and a decrease in average farm sizes and farm incomes. With this already happening in these areas, people are 'pushed' into the towns whether or not there are employment opportunities for them. Wage rates are highest in these towns, employment prospects seem best there and many people are attracted by the amenities and social life summed up as "the bright lights". The rapid natural increase results in part from the preponderance of young adults; but also, in contrast to 18c. Europe medical facilities are such that death rates, particularly infant mortality rates are lower in the towns than in the countryside.

The ratio of the immigrants to those born within the towns is of the order of 2:1 $\frac{1}{2}$. Two types of immigrants can be distinguished, those from within the region in which the town is located and those coming from other areas. The proportion of the two types of immigrants varies with the different towns. For example, in Arusha, immigrants from within the region comprise 3% of the population of the town whereas those who come outside the region make the rest of the population. Most of its immigrants are Chaggas, (from the Kilimanjaro area), and other East African nationals working with the community at Arusha (1).

Thus to summarize, the rapid urbanization in this area has been caused by the fast rate of economic growth, the overall natural population increase and the scarcity of agricultural land in the rural areas especially in Kilimanjaro and Meru Mt. areas due to population congestion

and in Masailand since most of the land is now reserved for National Parks. Present trends show that all these factors will continue to play an important role in rising urbanization. Any measures to stem this rapid urbanization will therefore have to deal exclusively with the above causes.

The Function and Character of the Towns

The major characteristics of the region's towns can be obtained by taking into consideration three background factors: First, the imbalances are largely a product of immigration of people from the rural areas. Natural increase within the urban areas is still insignificant. Secondly, during most of the colonial period the indigenous people were considered as temporary inhabitants of the towns to provide skilled labour. Thirdly, towns were concentration areas for the non-African population. With these points in mind, now let us examine the function of these towns and the characteristics in detail.

The functions of the towns here are now less dependent on the alien initiative, but basically they have changed little since Independence. Administration remains one of their chief roles, and allied to this are such social services as education, medical facilities etc. The second main function is invariably commerce, and there is a close correspondence between the ranking of towns as administrative and commercial centres. Industrial development is now following a similar pattern for it is tied to resources but largely market-oriented and often rises from the town's trading functions - and there Arusha stands out as the main industrial town in the region. There is very little specialization, most towns being remarkably similar in function.

The similarity is reflected in physical form, which generally closely matches a single simple model - whereby in the regional capitals of Moshi and Arusha or in a typical district headquarters, there are distinct administrative and commercial zones and separate area scheduled

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for industry. Few people live within these zones, while the residential areas themselves are sharply divided still in some areas though not all. Until recently the division was in fact, though not in law, largely racial; each town had a low density European zone. Such areas referred to as 'Uzunguni' were well planned, and landscaped and very pleasant to live in. Then there was a medium density zone for Asians, although most Asians tended to live above their shop premises on the upper floors; while Africans lived in either high-density zones or around the periphery where housewives remained as cultivators.

The non-African quarters of the town are generally adjacent to the service establishments, offices and commercial areas and are served by most urban amenities as piped water, lighting and surfaced streets. In most towns the zone of government offices and services is distinctly set aside from other functional zones. Stretches of open spaces separate the different services. In addition, town parks are common.

Almost all Europeans and nearly all Asians live in the towns, they have always formed minorities there. Their average numbers are constantly going down as more of ^{them} leave the country. For example, during the 1957 census, non-Africans made up more than quarter of the urban population of Arusha (40%) and Moshi (31%) in this region. In the 1967 census, things had changed with non-African population highest in Arusha being 13%.

Another characteristic shared by most towns in the region, is a demographic structure showing a heavy preponderance of adult males. For Tanzania towns in general the average sex ratio is 110 males to 100 females. Arusha has 132 males per 100 women, whereas Moshi's ratio is 129:100. - all above the national average. Some of the adult males are young single men, but many are married men who have left their wives and children on the family farms. They often return there after working for one or two years, and never really identify themselves with the town.

In part, these features of the town's physical and social structure reflect their origins. Most have developed within the modern period of town planning under government with authority to impose planning policies and similar policies have been applied ^{to} each town. If the towns had evolved from the areas in which they stand, they would probably have differed more; and undoubtedly they would have had a less mixed and more stable population. It remains to be seen how the structure change as urban growth continues in a new political situation which aims at balancing out rural and urban development.

Squatter Settlements

As in any developing country, the rapid influx of migrants from the rural areas to the urban areas is leading to the growth of squatter settlements on the periphery of the main towns - especially Arusha and Moshi. This is not a main problem in the region at the moment, but as the number of squatters rises, the situation will be aggravated in the future if action is not taken now. In Moshi the main squatter areas are in Majengo, Fasua and Kiboroloni. In Arusha the main squatter areas are also in Majengo and Kaloleni.

In addition some land owners invest in crude shelters which bring a much lower yield per hectare in rent than cultivation would produce.

These settlements pose problems to the planners in this area. Opinions differ about the squatter settlements; traditionally condemned as unsightly and unhealthy as 'septic fringe', they may in fact provide an appropriate transition between rural and urban life, reflecting a welcome spirit of self-help. Meanwhile the rising middle-class and elite are often moving into houses formerly occupied by Asians and Europeans, so that even the de facto separation of the races is ending. The Arusha Master Plan (PADCO) has put forward plans to deal with the squatter settlements in Arusha. As for Moshi and other smaller towns action will be

required soon before more huts are built and the situation gets out of hand.

The problem belinquering some^{of} the towns, here is non-planning caused mainly^{by} the shortage of planners. It is only very recently, action has been taken to start making plans for all the District capitals and other important towns in the region. This situation can be remedied by a national programme to educate more planners both within the country and outside it.

18.2. Service Centres

As seen earlier on, towns provide services both for themselves and for the rural areas around them. Hence it is important in planning to pin point and develop the service centres in the region because in the future the quality of life and stimulation for the development of the rural areas will increasingly come from service centres.

Work on this in Tanzania, has been done by A. Mascarenhas (Tanzania in Maps - pp.133). He has located the major service centres in the whole country by using several criteria. His survey data is used to show the distribution of service centres in this region as it is at present.

The distribution of service centres was analysed by using the Central Place Theory developed by Walter Christaller. A survey of the location of a wide range of services was made. Four very broad categories of services were defined, namely administration (administrative offices, courts, police stations and fire protection) communication (post offices, service stations, bus services, railways and air strips); commerce (shops, markets, banks, and hotels) and social services (health, facilities, schools, libraries and community halls). Information was also sought on employment, water and sewage disposal. It was noted that some services were attracted because of location. For instance junctions were considered as a service because these sites often attract amenities. Economics dictate that for most of the

services there will be a hierarchy. For instance, the judiciary services have primary courts, district courts, resident magistrate courts and at the apex there are high courts with puisne judges. There are over 800 primary courts in Tanzania but high courts at only four places. High courts handle only major offences and appeals from the low courts.

The collected information was plotted on Basic Information Sheets using a point system. Table 100 gives the variety of services and an allocation of points on a scale 'high', 'medium' and 'low'. A high level of service (e.g. a hospital, fully equipped service station or a police divisional headquarters), counted 3 points; a medium level service (e.g. a health clinic, filling station or police station) counted two points; and a low-level service (e.g. a dispensary, duka petrol outlet or a police post counted one point. Where two or more levels of service or two or more of the same level were available at the same place (e.g. a village with a secondary school and a primary school or a village with two banks) the points were not accumulated but only the points of the highest level of service were counted. For each place the total points value of all the different services were added and the centres ranked accordingly. Because of the scattered nature of the infrastructure it was decided that any development falling inside a radius of three miles of an important development (such as a market, an administrative centre or a mission complex) should be counted as part of that development in determining its ranking.

Several other important variables could have been introduced but the data for these could not be verified. Only centres with three or more points from two services were considered. On this basis there are nearly 27 centres and if a consideration of those below three are included there are well over 81 centres in the region.

Four levels of service centre were distinguished, each providing a different range and level of service and serving larger or smaller hinterland

correspondingly. These centres were termed as Local Centres, Market Centres, Rural Centres and Urban Centres. In the region, there are 2 urban Centres (Moshi and Arusha), 6 Rural Centres, 15 Market Centres and well over 60 Local Centres. (see table below).

The centres analysed and presented on the table can be upgraded and provides the basis for a growth centre policy if this line is taken in the Strategy section. A growth centre strategy if refined and further developed could play a vital role in rural development of the region. If appropriate centres are identified they can form a vital link between rural and urban sectors but they must be chosen with care.

TABLE 100 CATEGORIES OF SERVICES FOR SERVICE CENTRES

<u>Variety of services</u>	<u>High (3 pts)</u>	<u>Level Medium (2 pts)</u>	<u>Low (1 pt)</u>	<u>Max. pts</u>
ADMINISTRATION				
Administration	Regional office	District off.	Div. office	3
Legal	High court	Resident mag.	Dist. Mag.	3
Finance	-	Senior rev. officer	Revenue clerk	2
Security	Regional hq.	Dist. hq.	Police post	3
				<hr/> 11 <hr/>
TRANSPORTATION				
Telephone	Exch. with 24 hrs service	Service over limited time	Limited service	3
Postal	-	Full service	Limited "	2
Air Service	Daily	1-4 times weekly	Airstrip	3
Rail	-	Daily Serv.	Limited Serv.	2
Road	150 buses per week	25 buses per week	10 buses per week	3
	-	Major road junction	-	2
Petrol	-	Service st.	Petrol outlt	2
Port	-	Lake & ocean ports with 10 or more departures.	-	2

COMMERCIAL

Retail Trade	100 shops	Townships	Trading centres	3
Banking	-	Nat. Bank of Commerce	-	2
Co-operatives	-	-	Co-op Union	1
State Trading Corp.	-	-	State Trading Corporation	1 ²
				<u>7</u>

SOCIAL

Education	Post Secondary School	Secondary School	-	2
Health	Fully equipped hospital	-	Bedded dispensary	3
Accommodation	-	Tourist hotel	Rest house	2
Others (1 pt each)	-	-	Lib, Advocate, Piped water, Elect, Private doctor, Cinemas.	<u>6</u>
				<u>13</u>
			GRAND TOTAL:	<u><u>50</u></u>

TABLE 101 SERVICE CENTRES

<u>Score</u>	<u>Level</u>	<u>Service Centres</u>
0-3	LOCAL	Karatu, Katesh, Usa River, Bashenet, Tengeru, Ngorongoro, Arusha Chini, Usangi, Ugweno, Kisangiro, Kibong'oto, Sanya, Lembeni, Kisiwani, Makanya, Bagamoyo and various centres in rural Kilimanjaro including, Kirua, Kilema mission, Mwika..Umbwe, Machame, Uru, Mamba, Mashati et In Arusha other Centres include Sonja, Arash, Namanga, Mto wa Banga, Suiya, Tingatinga, Loriboru, Olduvai, Eduleni, Karangai, Uahoga Chini, Makuyuni, Kwa Kuchinja, Liviseki, Lolbene, Kibaya, Bereku, Njoro, Njoro Lengai and a few others.
4-9	Market	Mto wa Mbu, Oldeani, Marangu, Mkuu, Machame, Usseri, Kibosho, Sanya Juu, Himo, Kahe, Gonja, Lembeni, Loliondo, Longido.
10-16	RURAL	Monduli, Hedaru, Oldonyo, Sambu.

<u>Score</u>	<u>Level</u>	<u>Service Centres</u>
17-23	Rural	Same, Mbulu, Babati.
24-30	Urban	None
31-37	Urban	None
38-44	Urban	Moshi and Arusha
45-51	Urban	None

Source: [Berry L., Tanzania in Maps. University of London Press. 1971. pp. 130.

Summary - Service Centres

From this analysis it is seen that some areas - eg.. Kilimanjaro, are very well served with service centres whereas in places like Masai and Mbulu and Hanang Districts lack service centres. In these districts there were ample low-level centres, but lack centres with sufficient concentration of development to qualify as Market or even Rural centres. For future growth of this region investment in the rural areas will be channelled into the above service centres. Some of these will have to be upgraded if they are to serve the need of the surrounding level of population.

Linking Ujamaa to Urban Development

The policy of ujamaa vijijini (socialistic or familyhood villages) has already contributed to the springing up of new settlements most of which are still in the formative stage although villages like Upper Kitete serves well over 800 people now.

Most of these villages fall in the lower hierarchy of the Service Centre hierarchy and make it easier to provide extension services to clusters of farmers cultivating large areas collectively instead of straining scarce resources to provide individual farmers farming small shambas (fields) scattered over extensive areas. Also it is easier to extend social facilities such as water supplies, medical and education services to a larger group of people.

It is necessary to get villages involved in primary and secondary processing and fabrication; also basic industries should be introduced later on. Third, since one of the major logistic justifications for ujamaa villages is to minimise unproductive distance, centres large enough will have to be established or be developed to service clusters of small satellite ujamaa villages. Such villages, which may fall under the Market Service Centre Hierarchy level, could distribute improved seed, have specialized facilities above the rudimentary needs, store fertilisers and have sub-wholesale facilities.

18.3. DETAILED DESCRIPTION OF THE TOWNS OF MOSHI AND ARUSHA

Arusha Town

Arusha town is the regional capital of the administrative region of Arusha. It is 4,260 ft. above sea level and 297 miles from the port of Tanga with a population of 32,300, growing at a rate of 12.4% pa. This extraordinary growth rate, can in part, be accounted for by the extension of town boundaries in 1966. It is the business centre, the EAC headquarters - chosen because of its centrality, railhead and regional headquarters of an extensive and fertile district on the slopes of Mt. Meru, producing coffee, sisal, pyrethrum, papain, seeds for export etc. It has a temperate climate - which accounts for the high number of Europeans in the town and its vicinity. This was the town where the major Tanzania policy of rural development and socialism was born in 1967. Lastly, it is also the centre of the tourist industry in the Northern Region of Tanzania.

Arusha lies just south of the Moshi-Nairobi Trunk road on the lower slopes of Mt. Meru. Access to this town is through 2 North-south roads lying about 2 miles apart. One is Moshi road at the eastern edge of town and the other is a branch of the Great North Road. These, in turn, join with the principal east-west road through the centre of town (Uhuru Road) to create a rectangular road structure about 2 miles long a mile wide.

This basic structure has existed for many years and until recently provided adequate access to the town. The pattern of interior streets has never been well developed. In part, there has not been the need because most of the residents move about on foot and, therefore can follow the variety of paths which mark the main channels of movement. Also, the topography, which slopes rapidly down from the Moshi-Nairobi Trunk road from 4,600 ft. to 4,525 ft. contour is bisected by several valleys (Temi river, Naura and Goliondoi rivers) which make the development of east-west connections difficult.

The existing pattern of land use still largely reflects the planning done in the colonial era. The "European" residential area was the very low density east of Temi river in the Sekel area. Plots in this area are typically one or two acres. The "African" sector of the town is the much higher density area west of Naura River laid out on a grid pattern. This area (Majengo) is focussed on the main town market and is close to the oldest industrial zone of Arusha, frequently referred to as Unga Ltd. Between the two main residential areas lies the principal commercial and institutional section of Arusha, centred on the Clock Tower. While the previously planned segregation of ethnic groups no longer exists, the economic distinctions between areas have barely begun to change.

One of the problems of Arusha has been the failure to expand the town at the rate at which population growth was actually occurring. New residential development in Kaldeni, construction by the NHC and, more recently, the Temi Corridor area and other areas have been far from adequate to meet the actual demand for residential space. As a result, officially unplanned development has occurred on a major scale just outside the old town boundaries. Many of these areas were taken into the township with the expansion of boundaries so that, over 50% of Arusha's population lived outside the area of regular urbanization. Meeting the demand for

urban space is a major problem that Arusha, like most of Tanzania's principal towns, must meet in the future.

There has been considerable commercial and industrial development in recent years, resulting both from the growth of tourism and the general increase in incomes and employment generated through the accomplishments of the First Five-Year Plan Development Plan. Most of the major commercial growth has occurred through the renewal of existing commercial sites and the utilization of undeveloped sites within the centre of town. The commercial activity along Uhuru Road is gradually being completely renewed with the modern stores, typically including apartment accommodations on the upper floors, as part of a roadway widening programme. A major new industrial area has been developed in the Temi Corridor on land held by the Town Council. Some of Arusha's newest, largest and most modern industrial plants are located here, including the Kiltex plant and Kilimanjaro Breweries.

Arusha has been selected by government as a major centre for urban investment and growth during the ending Second Five-Year Plan period. This is part of a national policy decision to promote a pattern of multiple urban centres and to avoid the continued concentration of investment and growth in Dar during the last Five-Year Plan period. The towns of the Northern Corridor (Tanga, Arusha, Moshi and Mwanza) are being concentrated on, with Arusha ranking third in the nation (behind Dar and Tanga) in terms of planned investment and anticipated increase in employment.

In addition, the decision to promote Arusha is supported by its own local and regional growth potentials. These potentials can be briefly summarized as follows:-

- (a) The proximity of Arusha to the Mt. Meru and the West Kilimanjaro agricultural zone - two of the most highly developed and productive agricultural areas in Tanzania. Arusha acts as a marketing and

processing centre for the agricultural products of these regions and provide alternative work opportunities for those who cannot obtain (and in the most densely settled and most productive agricultural zones.

- (b) Arusha's position is favourable to industrial location in Tanzania - good climate, raw materials, markets at hand etc.
- (c) Arusha is well linked with other parts of East Africa by a good trunk road system.
- (d) The designation of Arusha as the HQs for the EAC, which has been a major factor in recent growth and will add on additional stimulus.
- (e) The proximity of Arusha to the major game parks of Northern Tanzania and Mt. Kilimanjaro and its own attractive climate and physical setting. Arusha's role as an international tourist centre is now enhanced by the opening of the new Airport on the Sanya Plains.
- (f) The high quality of the labour force, the climate, the presence of sufficient water resources, and ample electric power supply. These are local factors making Arusha a desirable location for certain types of industry.

Population Growth

Between 1957 and 1967 Arusha grew from 10,000 persons to 32,300 or 12.4% p.a. It is certain that growth will continue at a high rate over the next five years and beyond. The population projections prepared by PADCO (Arusha Master Plan - pg.22 Table 1) show estimates to 1989 at gradually decreasing annual rates being 200,000. Table 102.

These projections show a very rapid growth and with limited resources this spells disaster for the future. The main issue is how to

accommodate this growth.

TABLE 102 TWENTY-YEAR POPULATION PROJECTIONS FOR ARUSHA

<u>1967 Actual</u>	<u>1974 Estimated</u>	<u>1989 Estimated</u>
PADCO 32,300	62,000	200,000
II 5-Year Plan 32,300	73,000	250,000

Investment in this town during the last Five-Year Plan period was to include among other things, new hospital extensions and a maternity wing for Arusha Hospital, some L.A. housing, some industrial development projects by the NDC, development of roads and other infrastructure. The Arusha Town Council projects included a new bus station, investment on social services (community centres, HC's, schools etc.).

The PADCO team thus prepared a master plan to deal with all the above problems in the town and its basic development strategy for Arusha centred on the following:- Arusha is to become a major urban centre of Tanzania, functioning as:-

(a) The East Africa's market, and

the processing and the consumer goods requirements of the regional agricultural sector.

(b) An international centre serving:

The northern Games Parks tourist circuit of Tanzania.

The EAC headquarters, and

Major institutions desirg a location central to East Africa and international in character.

The investments in urban infrastructure required in this plan are designed to reinforce this strategy within the context of given resource constraints and the requirements of the projected population growth of Arusha.

Briefly, the recommendations for physical development of Arusha are as follows: By 1989, this plan projects that Arusha will be the home of approximately 200,000 persons or 50,000 to 60,000 families, including probably some 2,000 families of representatives of the EAC member states stationed at the EAC HQs or other EAC-oriented institutions located at Arusha. Arusha will be a major international and national centre of tourism for thousands wishing to visit the northern game parks - Mt. Kilimanjaro complex - or simply to enjoy Arusha's own attractive climate and physical setting. With the further economic development of East Africa in general, and Tanzania in particular, and the general build up of the national road system, Arusha will become an important centre of East Africa. A physical development plan to accommodate this economic growth has also been presented with the various land uses - new residential areas taking account of squatters too, an expansion of the existing industrial areas to accommodate growth, a revitalized commercial area near the Clock Tower and a L.A. and EAC centre in the town centre near the present Arusha Town Hall. Various infrastructural developments - e.g. roads, water, sewage, etc. have also been taken care of.

Thus it is fortunate that this town has a master plan to guide its future development since a lot is happening in this town. It will continue functioning as the main centre in the region supplying most of the needs of the rural areas in its hinterland.

Moshi Town

Historical Development

Moshi township, at an altitude of 2,657 ft. lies on the slopes of the Mt. Kilimanjaro. It is one of the few larger towns in Tanzania with a rich rural hinterland, enclosing within its boundaries approximately 6½ sq.mls. (1683 sq.km.). It is the HQs of the Kilimanjaro Region and one of the centres of the tourist trade in the Northern Circuit.

The rapidly expanding town is the trading centre for a prosperous farming community and serves a district which, within a radius of 25 miles produces agricultural export annually to the value of many thousands of pounds, with most of this coming from the main cash crops of coffee and sisal.

The original site at Old Moshi; some 4¹ miles to the North-East of the present town, was a German town during the occupation, having a large Mission Station and Native School. By 1919, the town of Moshi on the present site had been established, administered by a few government officials, and comprising of the present market and commercial area.

There was a little progress during the years between the World Wars and the physical growth too was very gradual during this time.

During the 1935-45 war, however, the concentration of troops at Moshi encouraged progress, and since then there has been moderate growth in the town.

Physical Setting and Growth

Moshi township is built on an impervious rock of volcanic origin underlying a clay subsoil with the terrain sloping (1 in 40 slope) from N.W. to S.E. Climatically there is a relatively minor seasonal variation but diurnal variation, more particularly of temperatures and humidity, is considerably greater.

General Structure

The general structure of the town falls into five main areas of distinct character and are known as sections.

Section I. The first zone is the Central Business Area, radiating from the Post Office Tower (Clock Tower), forming a closely developed commercial area, with many modern buildings, including hotels, banks, garages, shops

and offices. This area may be considered as partially residential as many of the commercial premises (shops) have flats above them and hotels provide temporary accommodation for many visitors in transit throughout the year.

Section II. An extensive low and medium residential area situated in the Northern part of the town. This is the former 'European' development section where we find single, detached high class residential housing. Now a number of well-to-do Africans are slowly moving here.

Section III. This third zone, is the Bazaar area. It consists mainly of high density housing units. Multistorey commercial-cum-residential development is found along the main streets in this zone - e.g. Market Street and Mawenzi Road. This area extends in the direction of Pasua towards the old Moshi airport. On the fringes of this, a few squatter settlements are found although efforts are now being made to eradicate these.

Section IV. The fourth zone is a high residential area which lies to the east of the town (Majengo), which although only partially developed at the present time, it is intended for residential purposes only. It has already shown signs of squatter settlements with lots of small private shacks being built on the periphery of the zone.

Section V. The final zone is an extensive industrial area situated to the S.W. of the town. The main area is south of the railway line and is served by a link line and sidings. There are many industries here including the Kenaf and sisal bag making factory, coffee curing factory, rice and flour milling, a few breweries (mostly soft drink), textile and cloth-making factory and several other minor industries.

To the east of the town is a suburb of Moshi known as Kiboroloni, where we find the District Offices, a number of shops, small industries like tyre retreading, skins and hides tanning etc.

Services in the Town

Moshi town is fairly lucky in having several educational facilities both for elementary and advanced education. The total number of secondary schools in the whole Kilimanjaro Region amounts to 12, out of which three are located within the township of Moshi. These are Kibo, Old Moshi, and Mawenzi secondary schools. In addition to this, there is a technical secondary school with 600 pupils just outside the township and a co-operative college, situated right in the heart of the town.

As far as Primary schools are concerned, out of 360 primary schools in the whole region, 10 are located in the township. Most of them are single stream and provide primary education up to Std. VII.

The town is also provided with medical facilities - with two big hospitals - Mawenzi Hospital with 250 beds, and KCMC Medical Centre. In addition there are also two clinics - H.H. The Aga Khan Clinic and the Moshi Town Council clinic.

Other infrastructural services are provided including piped water, electricity, sewerage, police, ambulance etc. Most of these services are almost adequate at the moment but have to be developed to catch up with the rising population growth.

Population Growth

As with Arusha, this town is growing fairly fast and the main problem is how to contain this growth. Population in the town went up from 8,048 (1948) to 13,720 in 1957. From 1957 to 1967 the population had nearly doubled - reaching 26,864. The annual growth rate is 7%. At this rate (without taking into account figures about fertility, mortality and migration), it has been estimated that the 1974 population was 50,000 people and by 1987, there will be 155,000 people in the town. (Moshi Master Plan, pg. 12). Such a high population concentration will demand more

residential accommodation, employment, services etc. and a great strain will be put on the resources available by the Local Authority.

New residential areas have been developed by the NHC in various areas of the town - e.g. south of Arusha Road and to the west of the town, but this does not go far enough to meet the ever increasing demand for housing by the town's residents. This lack of housing has led to the establishment of squatter settlements in Majengo, Kiboroloni and Pasua where action is needed urgently before it is too late to act.

Employment Problem

The second main problem facing the town is the lack of employment opportunities to cater for the need of the existing potential labour force. The employment opportunities have been rising very slowly and are not keeping pace with the population growth. Sectors which have increased their employment opportunities are construction - because of the new developments in the building industry of the region and services. The influx of the class VII school leavers yearly, makes this problem even worse.

The town, with its rich hinterland, has experienced a fair growth commercially and industrially. New shops have been established and old ones expanded. With the tourist trade booming, existing hotels are doing a brisk business.

Future Growth

The town is one of the designated growth centres of the nation, where development will be encouraged in order to balance growth in the country. It will act as a stimulus and complement to rural development. Its future growth too will continue because of its locational advantages which include the following aspects: The fact that it is very accessible and has connections to other main centres like Nairobi, Dar, Mombasa etc.; it has a big pool of labour force to choose from; its rich agricultural hinterland

will continue providing the raw materials for industry (processing industries); again it has ample water supply, cheap electricity and a readily available market for its products. Its tourist trade has been boosted by the opening of the new airport. So the future for tourism here is also bright. Lastly, enough land is available to accommodate the increasing population and any new industries to be located here in the next few years.

SECTION A

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2. Mackay, East Africa Geographical Review, 1968, April. pg. 38
3. J. Nyerere: Inaugural Address, Dec. 10. 1962.
4. Ministry of Lands, The Planning of Ujamaa Villages, Dar 1965.
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7. Gulliver, P.H. - "Social Control in an African Society - A Study of the Arusha - agricultural Masai of Northern Tanganyika. Routledge, Kegan P. London, 1955.
8. See Rural Settlement Planning pg. 2-3 etc Ministry of Lands Dar.

SECTION B

1. Tanzania - 1967 Census - Vol. 6, pg. 8 - Dar City, 1969.
2. S.F. Claesson - Egero - Movement to Towns in Tanzania - BRALUP Research Notes - Vol. II - Dar 1971.

CHAPTER 1.9 - URBAN AND RURAL HOUSING

Introduction

A. THE HOUSING PROBLEM

One of the major factors affecting the character of any society is the quality of its housing. This is a particular problem in a developing nation, with rising demands on its limited resources especially at a time when thousands of people flock into towns each year. This creates rapid urbanization and its subsequent problem of slums and uncontrolled settlements.

This region, as any part of Tanzania, faces the ever increasing problem of housing. Although present standards of rural housing still have room for improvement, the inevitable limitation on resources that can be devoted to housing improvement mean that for a long time the government has to concentrate mainly on the problems of urban housing. It is in the urban areas - particularly Moshi and Arusha - that the worst housing problems manifest themselves.

In spite of considerable progress since Independence, the general standard of housing is unsatisfactory for most of the urban population. There is over-crowding and unauthorised construction of unplanned development of dwellings built of unsuitable materials and without proper sanitation. A lack of basic infrastructure, such as water supply, sewerage and roads in ^{un-}authorized building areas has prevented any significant improvement. This type of housing creates an unacceptably low standard of environment, with a danger of epidemic diseases and outbreak of fire.

The housing shortage is also the direct cause of exorbitant rents and also in the case of Arusha and Moshi, the increase of workers following the Government's policy of "Decentralization", thereupon more members of staff from various organizations have been transferred from Dar to these

centres. In addition, the rapid natural growth of the urban population; the increase in building costs and the fact that up to 40% of the urban population cannot afford to rent even a low cost "standard" housing have been other factors which have brought about the situation described above.

Whereas the existing arrangements can meet the increasing demand for high income housing the building size of the numbers of low cost housing required poses entirely new problems. The solutions to these involve continuous and intensive research, considerable planning, improvement in the administration of the programmes and greatly increased investment in minimum cost housing units.

The number of low-cost housing units in the past have been insufficient for a number of reasons some of which are:-

- (a) The complex nature of low cost housing raised problems, particularly of policy, organization of finance, the solution to which have caused considerable delays.
- (b) A persistent shortage of skilled personnel restrict the planning of and research into housing the lowest cost category.
- (c) ✓ L.A.s did not always initiate housing schemes, particularly in the lowest cost brackets, as promptly required mainly because of lack of funds and qualified staff.
- (d) Lack of capacity for planning, financing and implementing essential infrastructural services, hampered housing construction.
- (e) Delays in land acquisition and carry out necessary survey work slowed down the pace at which sites could be identified for planning and for the issue of title deeds.

More high-cost housing units were therefore constructed at the expense of low-cost housing, with the result that fewer units than those planned were built at a higher average cost. The housing shortfall has, therefore, seriously increased in the low-cost brackets.

Annual expenditures on housing in the region is growing annually. In the rural housing areas, there has been a marked improvement in design and materials.

In the following section, a detailed examination of the housing situation in the urban areas at present is carried out focussing on: housing types, tenure, amenities in households, occupancy rates, housing density etc. Unfortunately, little can be said of the housing situation in the rural areas because the problem here is not as acute as in the urban areas and secondly, because there is shortage of data to date. Thirdly, because rural housing varies so much and is so scattered that to cover it adequately there needs to be a specific study geared to this subject - which is not the intention of this study.

19.1. URBAN HOUSING CHARACTERISTICS, GROWTH AND TRENDS.

Present House Building Programme in the Region

Due to the enormous problem facing housing in the region and the lack of finances, progress in providing houses, especially by the public sector, has been going at a moderate pace.

Within the urban areas, provision of housing has been by the government through its arm - the National Housing Corporation, and also through private institutions and individual effort. Currently, still a number of people still depend on the Local Authorities to find them a place to live.

In the region, much progress has been achieved in the provision of housing units. In the last Five-Year Plan, the NHC had plans to provide

minimum standard houses in Arusha, Mbulu, Babati and Moshi; and medium-standard houses where necessary in the region. The scheme also included making available serviced plots for development by individuals through self-help and building co-operatives. These schemes were estimated to cost 34.7/- mil.shs. in the Arusha region⁽¹⁾. Out of this sum 24 mil. was to be spent in building medium standard houses.

In Arusha Town itself, a target of 3,950 single family residential plots was recommended by PADCO⁽²⁾ (PADCO pg. 119) as a minimum effort to meet the demand for new residential land during the Second Plan period. This target was based on projected population growth, population that must be resettled from traditional housing areas as the result of urban housing expansion, and evidence of overcrowding within the town.

The five year target for production of residential plots was broken down into annual targets as shown in the following table:-

TABLE 103 RECOMMENDED ANNUAL TARGETS FOR NEW RESIDENTIAL PLOTS IN ARUSHA - 1969-1974.

<u>Fiscal Year</u>	<u>Plots Targets</u>	<u>Gross Acres</u>	<u>Net Acres</u>	<u>Approx. Population</u>
1969/70	500	73	56	3,525
1970/71	675	98	75	4,725
1 1971/72	800	115	89	5,600
1972/73	925	134	103	6,475
1973/74	1,050	151	116	7,325
Total(69-74)	3,950	571	439	27,650

Source: PADCO, Master Plan for Arusha Town.

To achieve these targets the plan recommended new residential development in Levulosi, Unga, Sinoni, Tingatinga, Maweni and Kijenge areas. To date, although progress has been slow, some parts of these areas have been developed and residents have moved into their own houses.

Of course other houses have been built by individuals through

obtaining loans from the National Housing Bank and other houses have been built by institutions like the EAC, who at the start of the Second Five Year Plan had plans to build 777 housing units for senior officers and junior staff in Arusha town.

As for the Kilimanjaro Region, the NHC, in the Second Five Year Plan, had plans to build 200 units of minimum housing in Moshi and Same. The associated Site and Service Scheme was also expected to provide residential plots for development by private individuals through self-help and housing co-operatives. The expected expenditure was estimated to be 2.6/- mil.

Currently, there are plans to build 20 medium houses at 25,000/- each at Rombo and 100 at Moshi ⁽³⁾. (KAP pg.53). In addition, there are plans to build 8 multi-storey residential blocks in Moshi town - estimated to cost 1.2/- mil. These projects are to ameliorate the existing acute housing shortage in the urban areas. Sites have been cleared for new housing at Pasua and the old Moshi Airport. The majority of the houses to be built here will be low-cost housing.

In addition, a number of houses have been built and more are planned in the vicinity of the new airport of KIA to house the airport staff and their dependents. On the whole, therefore, we can see that every effort is being taken to provide decent housing for all types of urban dwellers.

Urban Housing Characteristics

(a) Housing Types

Essentially there are three types of houses - (1) permanent, (2) semi-permanent, and (3) other structures. Permanent houses are considered to be "a house which is constructed completely of hard manufactured material". (walls made of bricks, concrete etc. and the roof

covered with tiles, concrete, iron sheets etc. (4). However, semi-permanent houses may be partially made of hard manufactured materials (cement floors, tin roofs, etc.). A third category - "Other structures" include structures which are roughly built of waste material such as scrap iron or old boxes or branches of trees or straw or such like materials.

In the region, variations among individual towns is great, with Arusha and Moshi towns coming off best. Generally the smallest number of households in the towns dwell in the category "others" and the majority live in semi-permanent structures especially in the smaller towns of Babati, Mbulu, Himo etc. This represents areas where the influence of modernization and economic development has been weak. (This conforms to the national trend).

Moshi and Arusha town represents centres where comparatively more affluent rural communities have invested in better housing over a longer period of time - hence have more permanent houses.

Because of special circumstances in which housing is provided by an institution Arusha is an important exception to the pattern described above. First, arising from its responsibilities as the capital of the EAC there was an influx of low income workers and an acute shortage of housing which meant that in the first years of the HQs being established here, a relatively high proportion (9%) lived in temporary structures. Many on the high and middle-income groups did not move to Arusha until much later. However, the EAC is an institution which has a comprehensive housing policy. Therefore the housing shortage problem here is a changing one and is expected to improve in the future. In addition the L.A. of Arusha had plans to develop 571 acres for residential purposes to house 27,660 people in the period between 1969-74.

While the category "others" is more frequent in the smaller towns, they also occur in the periphery of the big towns - Majengo and Pasua in

Moshi, and Majengo and Kaloleni in Arusha. These variations have to be looked at in the context of the 'de facto' racial segregation which existed in the urban settlements during the colonial period and of the closely related racial basis of economic opportunities. Thus permanent structures in the past tended to be constructed by the affluent non-African communities and this feature is still reflected in the distribution of house types - e.g. the well laid out European areas are in the best side of town with very big and nice houses. This is followed by the Indian quarters with houses above shops in the Business District and the Africans usually got what was left over-roughing it over in the periphery of the towns. In such areas, the density is very high and the structures are mostly semi-permanent. These historical features, though rapidly changing, have a bearing on such aspects as amenities, level of congestion and house rents.

TABLE 104 PERCENTAGE OF HOUSEHOLDS IN TOWNS BY TYPE OF STRUCTURE - 1967

<u>Towns</u>	<u>Total No. of H/holds.</u>	<u>% Living in permanent Structures</u>	<u>% living in semi-perm'nt Structures</u>	<u>% living in Other Structures</u>	<u>% Stated</u>	<u>% stated</u>
Arusha	9255	38.9	49.1	3.8	97.8	2.3
Moshi	7726	26.0	26.0	3.3	98.5	1.5
Dar City	83431	34.8	57.4	5.7	97.9	2.1
Av. all urban areas	6080	33.5	53.7	6.0	97.5	2.5

Source: Census Vol.2. Statistics for Urban Areas. Tables 118,CBS,Dar 1970.

(B) Tenure

An important feature in terms of tenure is that the majority of house occupants in the region's towns are tenants. In Arusha town 68.5% of the residents are tenants and only 19.1% are owner occupants. In Moshi, the same thing prevails with 74.5% being tenants and only 15.1% owner occupiers.

The fact that the towns here have so many tenants is not surprising

since they have one of the highest number of immigrants from the rural areas and from other areas in the country.

The growth of towns by the influx of immigrants rather than natural increase, the high cost of putting up structures, the ease with which structures can be sub-let and the difficulty of acquiring land contributes to the pattern in which tenants outnumber owners by nearly three to one.

TABLE 105 HOUSEHOLDS BY TENURE

Urban Area	Total no. of Households	Type of Tenancy in Percentage			Stated
		Owners	Tenants	Others	
Arusha	9255	19.1	68.5	9.9	97.5
Moshi	7726	15.1	74.5	8.7	98.3
Average all Urban Areas	6081	33.2	47.8	14.3	97.3

Source: Census op. cit.

(c) Amenities in Households

Information on amenities in households in the region's towns is available only for electricity and water supply, and these are examined below.

Electricity

Although electricity is abundant in the region, only a small proportion of the households in the urban areas have electricity; nearly 70% are without it (Table¹⁰⁶). Moshi stands out as one of the towns where 37% of the households avail themselves with electricity (highest total in the country in 1967). Nearly a quarter of the households in Arusha has electricity. This high rate in these towns can be explained by the fact that these towns have a high proportion of people in the high income group¹.

TABLE 106 ELECTRICITY CONNECTIONS AND TYPE OF HOUSE

<u>Towns</u>	<u>Total no. of H.Hs</u>	<u>Percentage of Households with Electricity In</u>			
		<u>Permanent Structure</u>	<u>Semi-Permanent Structure</u>	<u>Other</u>	<u>With Electricity</u>
Arusha	9256	21.5	0.5	0.1	22.1
Moshi	7727	35.0	2.0	.1	37.0
Dar	83429	21.3	5.1	0.2	26.5
Dodoma	6107	16.0	2.2	0.2	18.3
Average all urban areas	11,721	17.1	2.3	0.2	20.15

Source: Census Vol.2 Table 122a +b.

A significant aspect of the use of electricity among households is the variation in its use in the different categories of housing (see Table 106); For obvious reasons an overwhelming number of households using electricity dwell in permanent structures and conversely the least number using the amenity live in temporary structures. The pattern is well illustrated in Arusha where 22% of the households have electricity and out of these 21% live in permanent structures.

Access to Piped Water

In this analysis one of the major questions of interest is the extent to which water is conveniently available within the plot of the structure occupied by the Households. On average 27.6% of the households do not have access to water on the site of the building, with Moshi (18%) coming off better than Arusha (36%).

TABLE 107 POPULATION WITH ACCESS TO PIPED WATER

<u>Town</u>	<u>Population</u>	<u>Percentage with Access to Piped Water</u>				<u>Stated</u>
		<u>In Private</u>	<u>Shared</u>	<u>Outside</u>	<u>None</u>	
Arusha	31,549	19.9	17.9	23.3	36.4	97.5
Moshi	25,590	27.3	43.2	9.0	18.8	98.2
Tenz.Ave.		21.8	17.5	33.4	28.0	97.3

Source: Census Vol.2 op.cit.

For those households with access to water, we find sharing is very common. Again Moshi has higher households than Arusha with access to water sharing and private water use.

Most institutions - e.g. schools, colleges, missions etc. have private water supplies where public water supply is difficult to get.

(d) Size of Household and Occupancy of Rooms

Before examining the details of the size of the households and the occupancy of rooms it is necessary to give some idea of the contribution of each category to the total number of households in the region's towns. All the urban areas have more households in the single person category than in any of the others. Table 108 shows the trends for the towns of Moshi and Arusha.

TABLE 108 PERCENTAGE OF PEOPLE BY SIZE OF HOUSEHOLDS

<u>Town</u>	<u>Numbers of Members of Households</u>									<u>Total %</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9 or more</u>	
Arusha	24.9	22.7	14.3	11.4	8.5	6.6	3.9	2.7	5.0	100.0
Moshi	27.4	20.6	14.8	11.8	8.8	5.6	3.8	3.0	4.2	99.9
Ave. Tanz Towns	27.2	19.1	13.8	11.4	9.0	6.5	4.3	3.1	5.6	100.0

Source: Census Vol.2 pp. 205-52.

In this region, as in the rest of Tanzania, overall, there is an inverse relationship between size of households and the contribution to the total number of households. Thus single person households in Moshi and Arusha constitute only 25.5% of the total number and the 8 person household category is at the bottom of the list contributing to only 2.8% of the total number of households. Since the 9 and more households represents an accumulated group, there is generally not a decline but a slight increase in the total percentage belonging to this class.

One more generalization can be made and that is with an increase in

the household size one is probably incorporating more and more of the households with large nuclear and extended family structures. Migration for such large numbers is unlikely and it is probable therefore that they constitute households who have been caught in situ in the process of urbanism. Such households would tend to retain buildings with 4 or more rooms rather than rent them to individuals. This statement excludes the few who migrated, have large families and who could still afford to pay rent for the entire house structure.

As is known, occupancy of rooms is influenced by rents, availability of people, housing, migration patterns and family structure. In addition, the architecture is an important consideration. In common with other towns in Tanzania, the towns in the region have the largest number of households occupying one room (Table 109). The great concentration in both Moshi and Arusha - where 65% and 62% respectively, fall in the single room category of occupancy - has been due to: large absolute numbers of immigrants, the relatively high cost of rents and the inability of the low cost housing to keep up with demand. This is evidence of overcrowding which needs action soon.

TABLE 109 PERCENTAGE OF PRIVATE HOUSEHOLDS BY NUMBERS OF ROOMS OCCUPIED

<u>Town</u>	<u>Total No. of Households</u>	<u>1 Room</u>	<u>2 Rooms</u>	<u>3 Rooms</u>	<u>4 Rooms</u>
Arusha	9254	61.9	18.3	9.4	8.3
Moshi	7726	64.9	17.6	6.7	9.0
Ave. for Tanz. big Towns		52.5	19.7	11.6	13.9

Source: Census Vol.2. Table 126.

The pattern of 2-roomed households is fairly uniform in most towns in the region. The fact that most institutional housing (e.g. EAC housing in Arusha or other) is two-roomed accounts for a number of towns having a sizable proportion of households living in two rooms. For the other sizes, the proportion falls gradually with the really large houses being few and

in here may be the landlord occupies part of the house and lets the remaining bit.

(e) Density of the Occupancy of Rooms

The density of the occupancy of rooms is defined as the numbers of people per room. This has been calculated for each of the 4 categories of occupancy differentiated.

The average density (i.e. calculated by adding occupancy of all categories of households and dividing by the total number of rooms available) of two persons and over is found in Arusha and Moshi. This comes to near the national average of 1.8.

The density of persons per room without exception is highest in households occupying single rooms. Both Arusha and Moshi have high densities - 2.6 persons per single room.

Overall, the density of 2 room occupancy is lower than that of single-room occupancy and the density per person occupying 3 rooms is generally lower than for one or two room occupancy.

Another general comment is that densities are lower in households with 4 rooms than in any of the other categories.

TABLE 110 PERSONS PER ROOM

<u>Towns</u>	<u>Persons per room in Households with</u>				<u>Average Ratio</u>
	<u>1 Room</u>	<u>2 Rooms</u>	<u>3 Rooms</u>	<u>4+ More</u>	
Arusha	2.6	2.2	1.7	1.2	2.9
Moshi	2.6	2.1	1.8	1.1	2.0
Tanz. Ave.	2.3	2.0	1.7	1.2	1.8

Source: Census Vol.2 pg. 204-230.

Urban Housing - Conclusion

First, contrary to popular belief, the quality of life in the urban areas of the region, particularly Moshi and Arusha is far from satisfactory

or desirable. Secondly, there is shortage of housing in the towns, there is over-crowding and the quality of amenities available to the urban dwellers needs great improvement. Third if provision of amenities is already proving a strain then very careful planning is necessary if the maximum is to be obtained from investment or if improvements are to benefit the maximum number of the people.

HOUSING IN THE RURAL AREAS

Little can be said about the housing situation in the region's rural areas since conditions differ from place to place. Much has been said about building materials and house types of the various areas in the region in the section on Settlements. What follows below is only a general comment, for to understand the problem in the rural areas would demand a whole detailed study, clearly out of reach of this study.

The rural housing situation shows stark contrasts. In the Kilimanjaro Rombo and Arusha Districts there is tremendous progress in modern residential houses. Due to the affluence of the people, with money coming from the coffee farms, most families now live in a modern house - made of concrete bricks, or stones, iron-sheet-roofed and cement floored and usually with glass windows. The size of the houses vary from 2 rooms to 6 depending on the size of the families. In the areas around Mt. Kilimanjaro it is the pride of every family to build a modern house. As a result, very few traditional houses now exist. Even where they exist, these are accompanied with a small modern house for the household.

The building materials for the different house types in the region vary as seen earlier, from sand, stones, clay bricks, timber poles etc. Every area uses the building material suited to it and material which is found in abundance in the particular area.

In the highland zone the traditional roofing material of banana leaves or straw is giving way to corrugated iron sheets almost everywhere.

This is very effective in keeping off the heavy rains which fall in this area yearly especially during the period of the heavy rains. Hence, here, there is no actual shortage of housing as such, the problem is just how to improve the existing stock and finance the building of new houses by those people capable of doing so.

Rural electrification has already reached the Kilimanjaro area and some of the people who can afford it are already connected to the mains. This service will soon spread to the whole area around the mountain. Some families have private generators to supply them with power.

Although some areas still suffer from the lack of water, lots of houses now are within reach of clean piped water - A service now being provided by the L.A. At a moderate fee of 120/- one can even bring water from the communal pipe to his own home and a lot of families have availed themselves of this service.

In the other areas, e.g. in Mbulu and Masai and some parts of lower Pare, the existing housing situation and the availability of clean water leaves much to be desired. In these rural areas, most houses with an exception of a few are traditional structures - built of wood and straw thatched, with some plaster with clay. Overcrowding does occur and the actual conditions in the houses are rather abominable. In the same residential house one can find a whole family, a few goats, sheep and some cows. The ventilation is also rather poor and the risk of fire is very great indeed. As for the Masai, since they are nomadic, they hardly build permanent structures. Perhaps they will soon start building permanent houses when they settle down to do some farming. Most of the Masai have the finances to build a decent house, but due to their traditions, they do not bother to do so.

Apart from these tribes, there are still a lot of people who live in fairly bad housing due to the lack of finances to build better houses.

Some of the existing huts are in need of repair and improvement. The housing furniture is simple and inadequate.

Thus to conclude, we find that the rural housing problem is of a different nature to the urban problem. Here the problem is the lack of decent housing whose prescription is to improve the existing housing, use better building materials and build more housing units to avoid household overcrowding. There is need to improve amenities like water supply especially in the dry areas of the region.

RURAL AND URBAN HOUSING POLICY

(A) TANZANIA'S POST INDEPENDENCE HOUSING POLICY

It is not the intention of this study to examine the evolution of the housing policy in Tanzania. This has been done elsewhere.⁽⁵⁾⁽⁶⁾ Here it is intended only to touch on the highlights of the present policy and its development since it is this policy which affects the direction housing takes in this region.

Tanzania's present housing policy might be described as a traditional welfare state approach complicated by a few vestiges of a colonial housing policy. The welfare state approach to housing is characterised by an acceptance of the need for government assistance when the desperate need for housing is evident. It generally restricts this assistance to the provision of some minimal aid to those in need and fails to deal with the fundamental causes of the problem which are connected with the market mechanism. The result is a series of stop gap measures which never solve the problem and rarely affect a significant improvement. More seriously it often prevents the problem from being tackled in a more fundamental and comprehensive manner. A complication to be found in many ex-colonies is the paradoxical feeling that government is also obliged to provide housing for higher civil servants and other senior officials.

From its inception Tanzania's housing policy was based on this welfare state approach to the problem. The colonial policies in this area were significant only on account of their devisory size, which made them no more than token gestures. Early attempts in this area were replete with the naive notion that somehow the problem would solve itself if only a little more easily or if some other minor defect of the market was eliminated. After Independence, it was soon recognised that the problem was more intractable than this and it was wisely decided that what government assistance could be provided should be used to actually build low-cost houses. This represents an improvement but merely led to another dead end, at a slightly improved level. The basic welfare state orientation has not been changed by these developments. The government uses its resources more effectively but the problem of low-cost housing is still regarded as separate from the problem of housing as a whole. This failure to relate the low-cost and high-cost housing questions remains the major shortcoming of present policy.

That this approach has led to a dead end has become increasingly clear over the past couple of years. Simple arithmetic has shown that the government is likely to be able to set aside for this sector and with the expected increase in demand for urban housing the shortfall in housing will continue to grow. The inexorable logic of these constraints has focussed attention on the idea of site and service schemes.

Within the limits of the welfare state approach this is indeed the conclusion one is forced to accept. Hence the limited resources available and the feeling that some assistance in housing must be given to almost all urban dwellers if housing standards are to improve, has led to the conclusion that available resources must be spread to cover the greatest possible number of people. Although this solution is the logical outcome of present policy it involves numerous problems and in at least one sense it is a retrograde step, back towards the old policies when government

attempted to solve the housing problem through various forms of encouragement without any concrete assistance. Under this scheme, the government still provides its assistance in concrete terms, but depends on the market to complete the projects it begins.

CONCLUSION

There has been a rational development in the country's housing policy, however, in that there has been a growing recognition of the magnitude of the problem and of the need to provide assistance to the majority of low income earners. Unfortunately the recent moves in this direction may have adversely affected the effectiveness of government assistance. There also remain some irrationalities in the overall policy due to the old colonial attitude of providing civil servants with houses.

In the country, the positive influences of the market are far outweighed by its negative aspects. Its worst feature is the extent to which it channels resources into high-cost housing. It is shown that the total resources now earmarked for housing, are sufficient to support a programme that could lead to a virtual solution of the problem, and that the process of allocation involves heavy economic and socio-political costs.

A final point is that more action is needed in the rural areas, and this is what is considered next.

(B) CURRENT HOUSING POLICY AND ITS OBJECTIVES

1. RURAL HOUSING POLICY IN THE REGION

Under the present housing policy, government assistance has been concentrated on the problem of urban housing. There is an implicit assumption here that rural housing will take care of itself. In a situation where over 95% of the population live on the land such an assumption needs a justification.

"Rural housing looks after itself" (7). This is really more an

acceptance of an unavoidable fact than a policy. The rural housing problem is so vast that the application of government resources to it would appear to be all but futile. Nevertheless, the magnitude of the problem does not in itself provide justification for the lack of emphasis placed on it.

Indeed one might argue that just the opposite should be the case, with the proviso that more care should be exercised in channelling resources into this sector.

At present, of the total resources earmarked by the last Five-Year Plan, less than 2% were devoted to "Rural Housing Development". Though in addition some institutional houses for government officials are built in the rural areas, the proportion of total resources going to the countryside would not be far above 5%.

In part these policies have been forced on the government by its welfare state approach to the housing problem. Thus present policies have no chance of coping with the urban housing problem and since there are the more socially disruptive and explosive it is necessary to do what one can in this area. This simply does not leave resources to tackle the rural problem. It will be argued that if one is willing to break out of the constraints imposed by the welfare state mentality then a more rational application of resources could allow somewhat more resources to be applied to the rural areas while increasing the effectiveness of the urban programme. So, how should government resources be applied to rural housing in this region?

Housing is an important element of the social fabric and its design, its ownership and its contribution must be integrated into the relevant context. Although it is dangerous to generalize one might say that presently the dominant feature of the rural housing policy, not only in this region, but all over Tanzania, was its shift from the subsistence to the monetary sector of the economy. At the best of times the market finds it difficult to satisfy the need for shelter and it requires the existence

of relatively sophisticated institutional arrangements to achieve even its limited potential. It is unlikely, therefore, that the rural sector demand for housing can be moved into the monetary sector in the near future, since part of the peasant population has only a marginal foothold in the monetary economy and the position of most others is made more precarious by their dependence on the weather. Why then should one be trying to move this area of demand into the monetary economy at this stage?

Bienefeld ⁽⁸⁾ argues that there are two interrelated reasons for attempting to move housing into the monetary sector: to improve the standard of housing or to take advantage of the increased efficiency due to the greater specialization of the monetary economy. In this context the first of these is of greater relevance, since the efficiency argument loses in importance due to the seasonal nature of farm employment. This means that at certain seasons of the year the farmer is essentially unemployed and can therefore build his own house at an opportunity cost of zero ⁽⁹⁾. The potential superior efficiency of more specialized labour is hence of little importance until other employment opportunities arise. On a more dynamic level one might however argue that specialization in one area will itself create opportunities for specialization in other areas. Hence the efficiency argument has little validity in the short run but could well be important in the long run.

An improvement in the quality of rural housing in the region must necessarily be the primary aim of any rural housing policy by government since the problem is entirely one of low standards and there is not an actual shortage of housing. Rather, the entire problem is a stock of housing that is thought to be in need of improvement, though the issue is complicated by the fact that the people living in the houses are often not the ones who most feel this need. The shift of housing into the monetary sector can bring about the desired improvement to standards in two ways; through the introduction of new materials brought from other areas or

through the greater skill of a more specialized labour force.

On one level this shift is the automatic consequence of development in the countryside. Indeed to judge by present experience construction is one of the few small-scale industries that will spring up without special encouragement as sufficient cash comes to be available in the rural areas. This is very true of the area around Mt. Kilimanjaro and the area in Meru near Arusha town. The overall impression of housing is one of gradual or more or less steady movement into the monetary sector. This will progress from the purchase of a few local materials as these cease to be freely available, through the purchase of such "foreign" items as Mabati (corrugated iron sheets) or cement and the employment of local builders to do specific parts of the work, right to the engagement of one man who will construct the entire building using almost exclusively purchased materials.

Unfortunately, under present circumstances, it may well be that the scope for improving one's rural house is limited unless one is in a position to make the jump to the 'modern' house.

If this situation does exist it could be a reflection of the almost total absence of an intermediate technology in this field. Hence peasants shift their housing demand marginally into the monetary sector but then meet a barrier which they cannot surmount for along time. Under these circumstances the government policies should concentrate to making a progressive improvement in rural housing possible. Unfortunately, present policies are in danger of reinforcing this discontinuity and could conceivably worsen the rural housing position in the long run.

At present, peoples' skills tend to reflect the housing situation. There is a group with traditional building skills and a much smaller group with "modern" building skills, and present training schemes, both in this region and elsewhere, are designed to train more men in "modern" skills. There is little emphasis on producing traditional craftsmen, trained to

approach their craft in an innovative and scientific manner. It is this kind of person however, who would eventually produce the intermediate designs that are needed to permit a progressive improvement in rural housing. The process of training traditional craftsmen in "modern" methods eliminates them as potential innovators since they are now concerned with a different kind of building and, if they are seeking improvements, will go forward from there.

This process may even lead to a deterioration of traditional skills. This replacement by "modern" skills may not provide an alternative since only a small proportion of the rural population will for some time be in a position to make use of these "modern" skills. There is thus a danger that an extension of present policies may in time lead to deterioration of housing standards, as traditional skills are lost and effectively "useless" ones are put in their place. Hence, as in the urban areas, there is a prospect of creating an over supply of skills to produce houses for the small proportion of wealthy farmers while neglecting the creation of skills that would make possible the progressive improvement of the general housing stock.

It is of great importance therefore, that the government's rural housing policy, housing research and craft training be organized and co-ordinated in a way which might lead to a bridging of the technological gap. There should be efforts to train people in the traditional building methods and to encourage them to experiment with modifications. It would be a mistake to believe that all the innovations needed should be expected to emanate from some special research institution, and at this level one should and must rely much more heavily on the actual living practice. The important functions for government then become those of collective, testing and dissemination of ideas and innovations as they occur. There would also be a role for a research unit but this must not be regarded as the fount of all wisdom from which all answers will come.

The government's approach to the rural housing problem should thus concentrate on gradual improvement of present skills and methods. Building a few modern houses, even building quite a few such houses, will not and cannot make any appreciable impact on rural housing. Even the construction of housing for ujamaa villages appears to be a questionable policy. If and when strong, viable and stable co-operative communities emerge in the countryside they will be more able to look after their housing needs.

2. URBAN HOUSING POLICY

If in the countryside housing will to some extent look after itself, will it also do so in the urban setting? In other words is the urban housing problem in the region qualitatively different enough to warrant a different degree of government involvement? It is the contention of this study that it is fundamentally different problem.

As seen in the study, the market has difficulty in satisfying the demand for housing for a number of reasons centering around the bulky nature of the demand which makes the construction of housing and its financing so complex that only a few people can take advantage of it. In the rural setting it was shown that the basic problem which is the indivisibility of the demand is ameliorated by the fact that the demand moves into the monetary sector only gradually and that if the present discontinuity in this gradation can be removed then there is some hope that housing could be left to local initiatives and still achieve a progressive improvement. In the urban setting a whole set of circumstances conspires to make such an easy solution impossible.

Urban housing is provided through the monetary sector and possibility of circumventing this condition by partial reliance on something akin to the subsistence sector are slight. The reason lies in the socio-economic nature of urban life: Because of the density of settlement in these communities suitable sites are difficult or impossible to obtain:

building materials are rarely freely available, for someone building his own house there is a problem of temporary accommodation, because of the greater degree of specialization in the economy there is much less free time available and this reinforced by the essentially non-seasonal nature of urban activity; because of higher opportunity costs, so called unemployment cannot be equated with free time and generally involves either looking for work or at least being ready to grasp an opportunity should one present itself; because of the greater mobility and insecurity of urban life people are less likely to tie themselves down with a house; people are less likely to be able to obtain free labour from friends or relatives; because of the physical density of urban life housing must be better designed and this is reflected in the building regulations that exist; and finally services must in general be centrally provided. All of these factors cumulatively ensure that urban housing is necessarily in the monetary sector even though there are individual cases to the contrary. The bulk of the need must be met through the monetary sector of the economy, but it has been pointed out repeatedly that the housing market does not cater for a large proportion of the population. Here lies the crux of the dilemma.

Two of the special problems of urban housing require some elaboration. The land problem can be serious. An American authority on urban development describes this problem succinctly: "Compounding the squatter problem in the cities of the underdeveloped countries is the problem of land speculation and high land prices.." Abrahams, C.⁽¹⁰⁾. Fortunately, the Tanzanian government has seen fit to take measures to control the development of these excesses. The rationalization of land and the curtailment of the free sales of land have done much to control speculation in this area, but some problems have merely reappeared in other areas. Hence, to some extent the speculation that would have taken place on land has shifted to buildings but appears to be flourishing nonetheless, based on the one hand on the shortage of accommodation and on the other on the fact that outright ownership of a building implies effective ownership of the land.

of the land once the market no longer is entrusted with this role. This requires the establishment of a planning mechanism with a greater capacity than the one which exists at present.

The second point to require discussion concerns the building regulations. There is some confusion concerning their proper function. They may represent a minimum standard below which one cannot allow building for reasons of health and social welfare, or they may be a means of raising the standard of housing in a city. Neither of these views makes any sense so long as the regulations bear no relation to reality, in the sense that they set standards which only a tiny minority can meet. Since housing is a necessity, people who cannot build up to the standards build below them and better houses by changing their real material situation. They build outside of the law because they cannot build inside it - not because they are lazy or do not want better houses.

The building code must lower its haughty gaze and deal with the specific problems encountered in the construction of the majority of housing.

Such a change in the regulation is of particular importance under present circumstances when most urban dwellers must find their own housing.

The effective use of Housing Resources in Urban Areas

The private housing market looks after the housing needs of only a small proportion of urban dwellers, and even the L.A. concerned cannot build enough houses for the people. What can be done? There is a range of possible responses, which include; self-help, provision of mortgage or credit; use of building codes; hybrid schemes such as site and service; and the actual construction of housing by government. These will be discussed below in short.

The literature on the subject bears out this interpretation of the

problems involved. The experience with such schemes is almost invariably the same. Most schemes do not get past the model settlement stage. (11) The provision of Mortgage Finance is a solution of sorts but it assumes that lack of finance and credit is the major problem standing in the way of the potential house owner. In practice, for obvious reasons this is a solution for the housing needs of the more resourceful sections of the middle classes only. Even in the developed world this approach generally leaves substantial sections of the population without housing.

The failure of this approach in Tanzania, if it needs documentation, cannot be more aptly summarized than by reference to the experiences of the First Permanent Housing Finance Company who were the only source of private mortgage credit. Their major problem from their inception had been to find borrowers of their funds. Hence by 1969 they had managed to lend only about a quarter of their deposits and these loans were heavily concentrated in luxury housing.

The establishment of Building Codes is not a contribution to the solution of the housing problem at all. We have discussed the ambiguities in the provision of such codes and can only repeat here that building codes do not help people get houses built. They may regulate the kinds of houses built at the margin but they cannot get people to build better houses if those people do not have the means to do so. They can however discourage the improvement of low standard housing and this the present Tanzania byelaws certainly appear to do.

Thus the planner is forced to accept that the solution lies in the construction of housing by government. In Tanzania's this was accepted as early as 1963 with the establishment of the National Housing Corporation. It soon became evident, however, that with given resources constraints the houses built by NHC could not begin to cope with the problem that was developing. In the desperate search for a solution it was decided to attempt to solve the problem through the "hybrid" scheme of "site and

service". It is a hybrid because it involves elements of all the approaches outlined so far.

In one sense this is a retrograde step in that it moves away from the recognition that the solution to the urban housing problem lies in the actual construction of houses. Nevertheless, it is a rational solution given present resource constraints in that it realises that the great majority of urban dwellers need assistance with housing. However, this system encounters a lot of problems and is therefore not all that ideal.

Thus eventually, we find that the best way to provide housing is by government, for this is the most efficient and desirable policy. Construction of housing on a massive scale by the public sector makes possible a highly efficient use of resources through standardization and eventually through fabrication. It encourages the rationalization of designs and the use of mass produced standardized building materials and components. Finally it could increase the scope for rational urban planning and contribute to the construction of a socialist social order. If the above policy is implemented, it is hoped that the region's housing problems will be solved with time.

HOUSING INSTITUTION

The institutions directly concerned with housing in the region, and the nation as a whole, include the Housing Division in the Ministry of Lands, Housing and Urban Development which gives overall guidance to the housing sector and implements the government's housing programme through the N.H.C.; the National Rural Housing Bank, the National Housing and Building Research Unit under the Ministry of Lands and other agencies.

The National Housing Corporation's activities include the channelling of government funds to L.A.s for the construction of low cost housing; the provision of technical assistance to L.A.s and the management of housing estates in those cases where there is a lack of capacity in the L.A.

concerned. Its role in this region is very conspicuous with a lot of new housing blocks already built and managed by this agency. It operates from the Northern region Planning Zone at Moshi. All residential programmes, layouts etc. are done here with housing experts advising the local authorities concerned. This will continue being the main agent for house building in the region for a long time to come.

National Housing Bank

The Tanzania National Housing Bank started its business on January 1, 1973, after taking over the assets and liabilities of the former Permanent Housing Finance Company of Tanzania.

Since the take over, the bank has already offered loans amounting to over 2 million shs. to individuals who want to build their own houses. It has also granted loans to the value of 4.5 million to institutions (e.g. the NHC) in the country to undertake building projects.

The bank provides special loans to the public to facilitate modifications or replacement of the existing houses which are in a state of deterioration. The maximum amount an individual may be granted ranges up to 40,000/-.

Individuals seeking to apply for loans to build private houses are required to have legal mortgage over the Right of Occupancy of the land on which the house is to be built. Similarly loans are granted according to the annual income the applicant earns. For instance, to qualify for a housing loan of 12,000/-, one has to have an annual income of 5,725/45 whereas a loan of 36,000/- is granted to those who earn more than 15,325/- p.a.

The maximum repayment period for any type of loan secured by a mortgage over the Right of Occupancy is 15 years and 10 years if the security of the loan is otherwise.

In most cases, as seen earlier, it is only those earning high salaries who benefit a lot from this source of money. At any rate, it is now possible for one to build a house of his liking, and this eases the chronic housing shortage a bit.

The ultimate goal of the government's strategy in low cost housing is the use of local building materials and the techniques in the modern environment. To this end, the government has already established a research Unit called the "National Housing and Building Research Unit" under the Ministry of Lands, Housing and Urban Development.

The immediate task of the research unit is to provide knowledge and facts on the following:-

(a) The existing Conditions

It is a necessity to have an accurate picture of the existing conditions. This will enable planners to formulate a realistic policy, or choose the right goals, to ascertain that the priorities are corresponding with real needs and priorities of the people and to make sure that the nation's efforts will have the greatest effect.

(b) Possibilities of Development

Research on utilization of local raw materials, improvement of building products, development of traditional and new construction, improve building techniques, design etc.."will give us knowledge to do a conscious choice of alternatives for development"⁽¹²⁾.

(c) Consequences

By programmed research the nation can gear itself to a better foresight of what it is doing.

The general aim for the research unit is therefore to take up field problem - from the society, according to the national goals and the priorities set up in the nation's Five-Year Development Plans. The unit emphasizes housing problems to rural areas, permanent village housing and housing problems of low income groups.

The following agencies and institutions also play an important part in the housing sector:-

- (a) The Ministry of Works, in the provision of housing for government staff and in the organization of the building of industry.
- (b) The larger municipal councils in research, planning and implementation of housing schemes particularly in the low-cost brackets;
- (c) The Zonal Planning Department at Moshi in preparation of housing reports and land use plans, and detailed layouts for housing estates. It also lays plans for the provision of infrastructure. This is by way of paved roads, water supply and sewage networks etc.
- (d) The private sector particularly the building, industrial, commercial, Social Organization (e.g. the EAC, private missions, companies etc.) in initiating housing schemes for their employees.
- (e) The commercial banks for the provision of mortgages and loans.

CONCLUSION. IMPORTANT FEATURES OF HOUSING IN THIS REGION

The housing problem in the region exists both in the rural areas and in the urban areas, but it is in the urban areas, this problem becomes

more acute. Rapid urbanization and the drift to towns from the rural areas coupled with the inadequacy of skilled manpower has dampened such efforts as have been made to solve the housing problem. In the towns especially Arusha, there is housing shortage, inadequate facilities, overcrowding etc. In the rural areas the conditions although different still show lack of facilities, and inadequate and unhygienic conditions and overcrowding.

No 7 The local authorities of Arusha and Kilimanjaro are as worried as the masses who are homeless or underhoused. The present situation can be summarized as: inadequate policy, low investment in residential accommodation on and no enough initiative taken to solve the problem, Drastic solutions are called for to solve this problem and these include; a reduction of the drift to towns by providing alternative employment opportunities in the rural areas etc.; finance for residential development through the National Housing Bank; greater housing building by the government, use of local building materials, standardize building materials and many other solutions. Since future urbanization is expected to take place mostly in the main centres of Moshi and Arusha and to a lesser extent to Mbulu and Same, then greatest effort in housing will be centred here and later gradually spread to the other minor towns and settlements.

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6. M.A. Bienefeld, A Long-Term Housing Policy for Tanzania, ERB Paper 70.9. Dar University, Tanzania.

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9. Several tricky problems about leisure foregone may be raised here. It is true that if the free time that is being sacrificed by the farmers is valued by him as free time then the loss of it clearly represents a cost. The issue is skirted here by assuming that the farmer is effectively unemployed which implies that he is looking for work, though there is little agreement on how hard he has to be looking in order to be so classified. It is of course possible that the assumption that he is "effectively unemployed" is false though in that case one might sustain the argument by pointing out that at present the national policy of development does not place a heavy weight on the cost of forgone leisure in the countryside.
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