

FOREWORD

This District Development Plan was prepared by the District Department Heads of Ministries under the coordination of the District Development Officer and the Executive Committee of the District Development Committee. The Rural Planning Division of the Ministry of Finance and Planning provided overall guidance through seminars and formulation of Plan guidelines and was responsible for editing and publishing the plan.

The Plan is divided into three sections. Chapter 1 provides background information on the District's resource base and the state of development. Chapter 2 spells out District policy orientations and strategies for the major development sectors. It also lists in order of priority by sector the major projects which the DDC wishes to see implemented over the 1984-88 Plan period.

The third section is the Annex. It indicates the Annual Development Programme, of which 1983/84 is the first; the Two-Year Rolling Plan for 1983/85; and Detailed Implementation Schedules for selected projects to be carried out during the first year. The Annex is envisioned as an on-going document to be updated every year. It both feeds and is fed by the annual budgetary cycle. This first version of the Annex to the District Development Plan is not complete because some ministries were unable to disaggregate their estimates. In order to make the annual Annex a more effective product, timely budget disaggregation by each ministry will be a future requirement.

Selection and prioritisation of development projects and programmes and final approval of the Plan was vested in the DDC in conformity with the directives on District Focus for Rural Development recently issued by the Office of the President. The specific criteria for prioritisation were drawn from the central national policy documents and emphasised by the Rural Planning Division. They included attention to underutilised existing infrastructure; to incompleting on-going projects; to food production; to employment generation; to overutilised existing facilities; to preventive and promotive health care; and to underserved areas requiring new facilities.

**Ministry of Finance and Planning
Rural Planning Division**

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CHAPTER ONE

DESCRIPTION OF THE DISTRICT

The district is situated in the western part of Kenya, within the boundaries of the Rift Valley. It is bounded to the north by the district of Kericho, to the east by the district of Nakuru, to the south by the district of Nyeri, and to the west by the district of Baringo.

The district is a high-altitude area, with an average elevation of about 2,000 meters above sea level. The climate is temperate, with a maximum temperature of about 25°C and a minimum of about 10°C. The rainfall is moderate, with an average of about 1,200 mm per annum.

The district is a major agricultural area, with the main crops being coffee, tea, and wheat. There are also some small-scale farmers who grow maize, beans, and other food crops. The district is also a major area for the production of dairy products, with many small-scale dairy farms.

The district is a major area for the production of timber, with many large-scale timber plantations. The main timber species are pine, eucalyptus, and acacia. The district is also a major area for the production of leather, with many small-scale leather tanneries.

The district is a major area for the production of handicrafts, with many small-scale handicraft workshops. The main handicrafts are baskets, mats, and other traditional crafts. The district is also a major area for the production of tourism services, with many small-scale tourism businesses.

The district is a major area for the production of minerals, with many small-scale mineral mines. The main minerals are gold, copper, and iron. The district is also a major area for the production of energy, with many small-scale hydroelectric power stations.

The district is a major area for the production of services, with many small-scale service businesses. The main services are retail trade, health care, and education. The district is also a major area for the production of housing, with many small-scale housing projects.

The district is a major area for the production of infrastructure, with many small-scale infrastructure projects. The main infrastructure projects are roads, bridges, and water supply systems. The district is also a major area for the production of social services, with many small-scale social service projects.

PHYSICAL, DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE

Physical Profile

Physical Location. Turkana District forms the north-west corner of Kenya and shares international boundaries with Ethiopia, Sudan and Uganda. Nationally, it borders Marsabit, Samburu, West Pokot and Baringo Districts. The District, with a total area of some 64,048 sq km, occupies one ninth of the area of Kenya. Lake Turkana, which forms part of the District, has an area of 2,000 sq km. The Lake is alkaline and contains high concentrations of sodium chloride and sodium bicarbonate, lead and iron. Its waters cannot support crop growth, neither is it suitable for human consumption. The Lake, however, abounds in various types of fish which have formed the basis of a lucrative fishing industry. (See Map 1).

Topography, Vegetation and Climate. The District is predominantly a low-lying plain in the Great Rift Valley, between 660 m and 900 m above sea-level with isolated mountain massifs and escarpments. The three major drainage basins are the Lotikipi plains in the north, the Kalokal/Turkwell/Kerio lowlands along the western shores of Lake Turkana, and the Suguta Basin in the south-west.

The majority of the District is composed of unconsolidated materials which include sandy and clay plains, lakebeds and mountain footslopes. Volcanic rocks cover about a third of the District, and are formed from a widely varying complex of ash, cinder and flow material. Basement system outcrops are confined to the Uganda escarpment in the west of the District, to the mountains south of Lokichar, and between Lokichar and Lodwar.

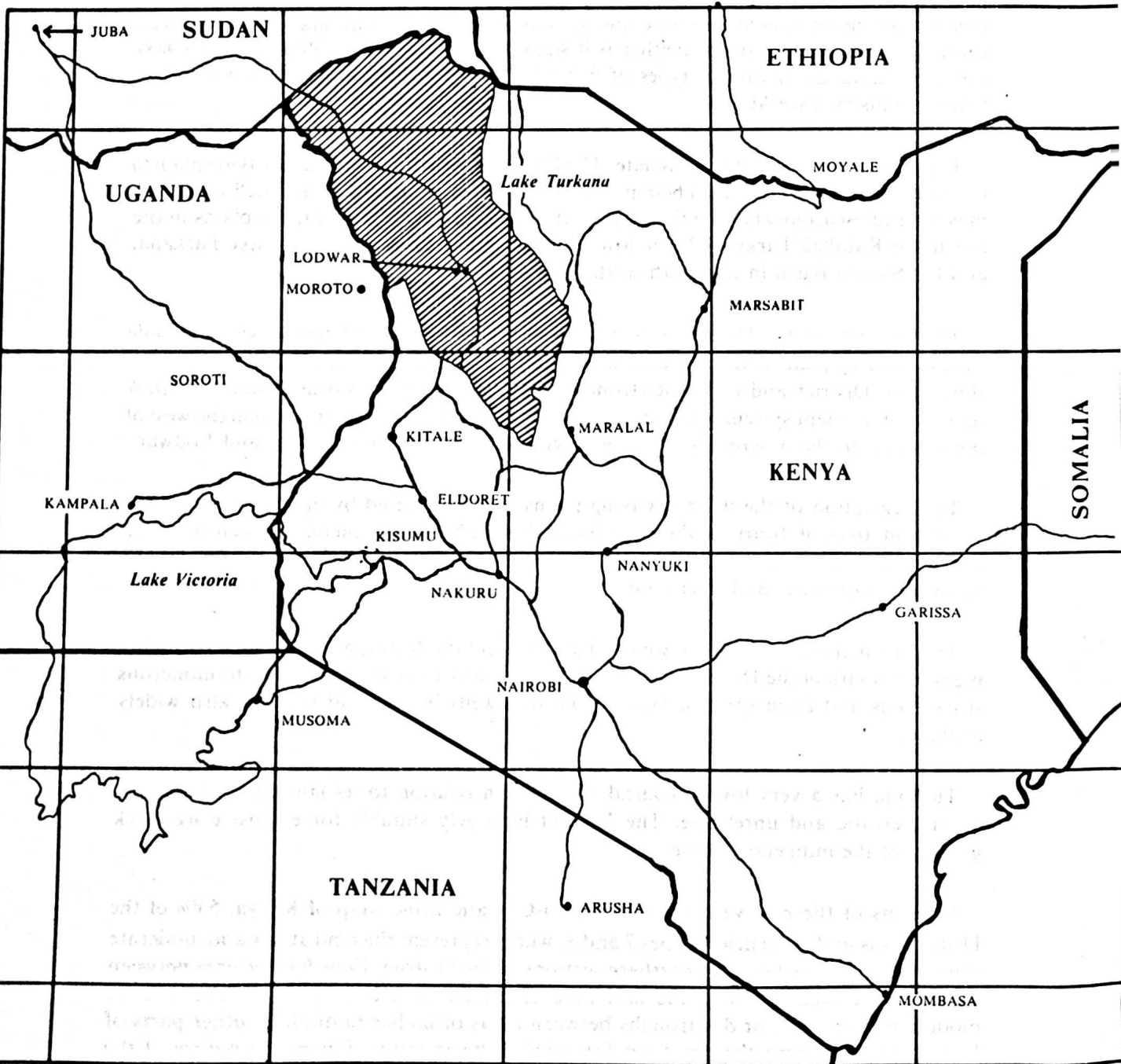
The vegetation of the drier low-lying plains is characterised by light bushlands with significant areas of dwarf shrubs and grasslands. The bushlands increase in density along the moisture and elevation gradient. The few areas of forest woodland are confined to the major drainage ways and river courses.

The two major river systems are the Turkwell and the Kerio, both of which rise in the highlands south of the District. Other water resources can be found both in the numerous streambeds and from springs. Water from dug wells in the sand rivers is also widely available.

Turkana has a very low ecological potential in relation to its land area. Rainfall is scanty, erratic and unreliable. The District is largely suitable for extensive livestock grazing of the indigenous animals.

In terms of the new version of the Agro-Climatic Zone Map of Kenya, 53% of the District falls under the driest zones 7 and 8, which represent the land at low and moderate elevations in the eastern and northern sections of the District. Zone 6 is the area between the extensive highlands and the arid core of the District. It consists of footslopes at moderate elevations, or dry troughs between areas of higher rainfall. In other parts of Kenya, zone 5 forms the dry limit for rainfed maize crops. Given the nature of the Turkana District, zone 5 cannot be regarded thus, because the rainfall is not well

MAP 1 LOCATION OF TURKANA DISTRICT



distributed during the rainy season. Therefore, only zones 4 and 3 (3% of the District) can be regarded suitable for limited rainfed maize cultivation. This implies that only irrigated agriculture and some other water augmentation method are the possible alternatives for crop farming in the District. Otherwise, only few areas can support a maize crop such as the crests of the hill ranges and a few isolated pockets within the Uganda escarpment. However, zones 3, 4 and 5, having limited dryland crop production, can contribute in a modest way towards the district development policy of increasing food production. These zones, constituting an area of 18,890 km² (29.5% of the District), can be regarded as agricultural development areas, be they of limited potential.

Turkana's climate is arid and hot, and rainfall is sparse and erratic in both time and space. Lodwar, in the middle of the District, shows an annual rainfall of 162 mm, with extremes of 16 mm and 662 mm. Rainfall is higher around the periphery of the District and in areas of higher elevation. Two rainy seasons are recognisable: April to July and October to November (though not constant). The driest periods are January-February and September. The rain falls in brief violent storms, resulting in flash floods, and surface runoff and evaporation are very high. Relative humidity varies between 40-60%. The yearly, mean maximum temperatures vary between 38°C and 36°C, with mean minimum temperatures of between 22°C and 25°C.

Administrative Organisation. Turkana District is divided into 5 divisions: Central, Kakuma, Lokori, Lokitaung and Katilu. These are divided into 22 locations and 39 sub-locations*. In terms of National Assembly and local government constituencies and wards, the District is divided into 3 constituencies of Turkana West, East and South. There are 23 local authority wards (See Map No. 2 and Table 1.1).

Table 1.1

Administrative Set-up — Turkana District

Division	Location	Sub-Location
1. Lokitaung	1. Ngikwatera	1. Kamothia
		2. Loyasa
		3. Loitanit
		4. Lokomarinyang
	2. Ngisiger	5. Kataboi
		6. Lowarengak
	3. Kaaling	7. Mornoreth
		8. Kanakurudio/Kakoloyei

*N.B. The number of locations has recently changed to 22, and this figure differs with some of the tables whose information was gathered earlier.

Table 1.1 (Cont.)

Administrative Set-up — Turkana District (Cont.)

Division	Location	Sub-Location
2. Kakuma	4. Lokichoggio	9. Lokangai
		10. Lokudule
		11. Nanam
	5. Kalobeyei	12. Loreng
		13. Songot
	6. Pelekech	14. Lopusiki
		15. Nakalale
16. Tarach		
3. Katilu	7. Loritit/Ngiyakwar	17. Loritit
		18. Loperot
	8. Kalabata	19. Katilu
		20. Lochwangamatak
		21. Loiya
	9. Lorengippi	22. Kataruk
		23. Loyapat
4. Lokori	10. Kaputir/Ngigebotok	24. Lotongot
		25. Lochodin
	11. Lobokat	26. Kangetot/Lububai
		27. Katilia
		28. Kangelationa
5. Central	12. Ngibila	29. Kapendo
		30. Napeiton
	13. Loriu	31. Lodwar Town
		32. Nakwamoru
	14. Lomelo	33. Kawalathe
34. Tiya		
15. Lodwar Township	16. Ngikajik	35. Lokiriama
		17. Loima

Table 1.1 (Cont.)

Administrative Set-up — Turkana District (Cont.)

Division	Location	Sub-Location
5. Central	18. Ngisir	36. Lorogum
	19. Kangatotha	37. Ille
	20. Kerio	38. Nakurio
	21. Kalakol	39. Kalakol

Source: DC Office, Lodwar

Demographic Profile

Population Distribution. According to the 1969 Census, Turkana District had a population of 165,225 people. In the 1979 Census, the District had a population of 142,702 people. This shows an intercensal negative growth rate of 1.29% per annum. This might be attributed to the drought which had set in at the time of the Census. At that time, large populations had moved out to neighbouring districts and countries in search of pasture and water for their livestock. The 1982 Ecosystems Aerial Survey put the total population at 169,400.

This increase reported by Ecosystems may be due to neither in-migration nor natural increase, but rather as a result of greater efficiency of aerial survey method in sampling the population, in the pastoral areas as compared to ground census methods. Given this realisation, one should not solely rely on results of the 1979 National Census as the guiding figures to plan for the District. It has been argued that the low figure on the count in 1979 resulted from the out-migration to other Districts, like Samburu, and also to outside Kenya. However, available information indicates that migration trends within the District (from the north or south to the central) were more dominant than out-migration. We recommend that the count be checked again, especially now that Ecosystems will make another survey this year. At the moment, we will use the available information from CBS as we wait for more reliable data, as set out in Table 1.2.

MAP 2 TURKANA DISTRICT ADMINISTRATIVE BOUNDARIES AND CENTRES

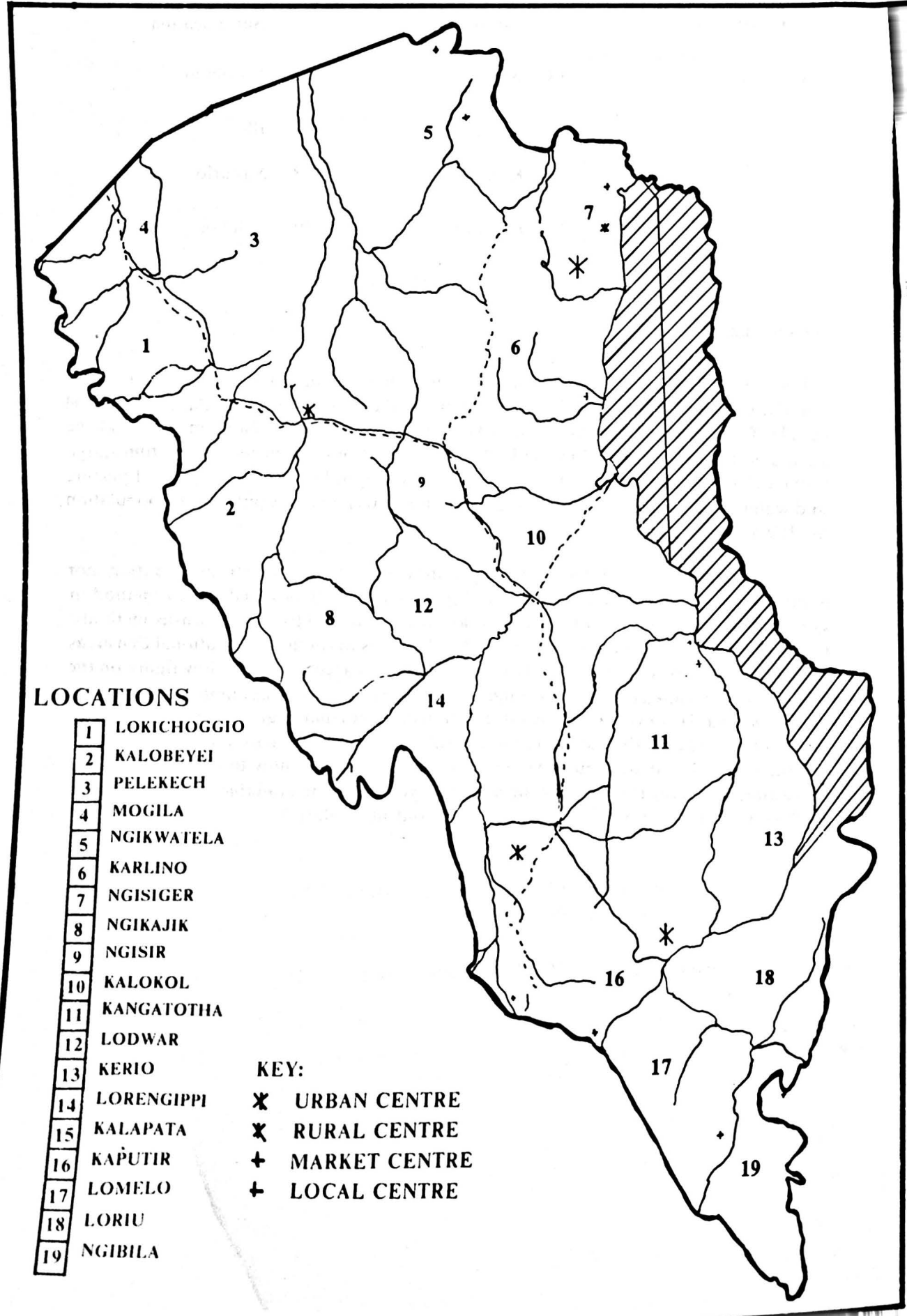


Table 1.2

1979 Population and Population Projections, 1983, 1985 and 1988

	1979	1983	1985	1988
MALE	72,273	75,879	75,953	74,938
FEMALE	70,429	74,159	74,280	73,442
TOTALS:	142,702	150,038	150,233	148,380

Source: CBS, "Population Projection For Kenya, 1980-2000", 1983.

From this information, it appears that over the Plan period the population will be constant at around 150,000 people. This is one of the reasons why we question these data. From the Ecosystems Survey, it would appear that by 1988 the District population will be around 190,000, while the MOH at Lodwar estimates the figure to be 200,000 people. Therefore, it remains a question what the population growth rate is and, therefore, the right figure of total population. It is recommended that for planning purposes an average of 190,000 instead of 150,000 people should be used. Finally, although the real figure for the population is not known, the population structure has some interesting features to note, which should be analysed from the available data (see Table 1.3). Table 1.4 provides the divisional population figures for Turkana District, based on the 1982 Ecosystem's estimate.

Table 1.3

Possible Age Structure of Population (% Distribution)

	1983	1985	1988
School-going Age (Primary)	28.9	28.8	28.7
School-going Age (Higher)	21.5	21.8	22.3
Working Population	30.4	30.1	29.7
Others	19.2	19.3	19.3

Source: CBS, 1979 Census

Table 1.4

Population Distribution by Division — 1982

Division	Location	Population	Density (per km ²)
Kakuma	Lokichoggio	7,064	2
	Kalobeyi	4,538	1

Table 1.4 (Cont.)

Population Distribution by Division — 1982 (Cont.)

Division	Location	Population	Density (per km ²)
Kakuma	Pelekech	6072	0.8
	Mogila	1753	3
Lokitaung	Ngikwatela	6148	1
	Kaling	1165	1
	Ngisinger	13233	8
Central	Ngikanzik	4001	0.9
	Ngisir	6767	6
	Kalokal	13341	5
	Kangatoha	5447	1
	Lodwar	10338	5
	Kerio	13207	4
Lokori	Lomelo	2402	
	Loriu	6719	1
	Ngibila	3344	2
Katilu	Lorengippi	6501	2
	Kalabata	15583	7
	Kaptir	1485	0.5

Source: Ecosystems, 1982

From Table 1.3 it is estimated that only about 30% of the population are economically active in the District and support the remaining dependants (children and retired people). One observes that this economically active proportion of the population will decline slightly in the late 1980's.

The population of primary school-going age remains constant, which should lessen some of the pressure for school expansion. The percentage of those required to go for higher education will increase more than those required to go for basic education. The implication of this is that institutions for higher education will be required to increase to keep up with the increase in this number. It also implies that the District will benefit from highly educated locals (a manpower policy) who can manage development activities within the District. This will be a fulfilment of the National Development Plan's theme of mobilising local resources for development.

Migration Trends. Nomadic pastoralism is the dominant form of land use within the District and is bound to remain so in the foreseeable future. One of the most important

characteristics of nomadic pastoralism is mobility through which the pastoralists respond to environmental conditions by concentrating on locally abundant resources and moving away from areas of comparative resource scarcity.

The Turkana demonstrate mobility at three levels: first, local concentrations and dispersals in response to local environmental variation in fodder and water availability; second, larger scale seasonal movements from lowlands to highlands; and third, even larger movement in response to persistent drought or raiding incidents, sometimes out of the District. Such movements are becoming rather less, due to the problem of crossing international and ethnic boundaries.

Population concentrations are found in the rehabilitation camps and irrigation schemes, as well as in the main local centres of Lodwar, Kalokal, Kakuma, Katilu, Lokori, Lokichoggio and Kainuk. The Kerio and Turkwell River banks are also settled. The settled population comprises 46% of the District population, occupying about 4,630 sq km of the District, while the pastoral population comprises 54% and occupies 57,420 sq km of the District.

Since mobility is so fundamental to the self-sufficiency of the pastoral system, any restriction will have far-reaching impacts. First, the capability of the pastoral system to support people on the land will be impaired if resources become unavailable through restricted mobility. Second, the system will itself become more susceptible to drought conditions and more people will require emergency food relief. Third, the system will recover more slowly from drought conditions and will only be able to reabsorb a smaller proportion of destitutes.

Socio-Economic Profile

Employment and Income Levels. In terms of per capita GDP for the District, Turkana can be regarded as one of the least developed regions in the Republic. Thousands of Turkana people over the past Plan period can be classified as having been under-employed. This is true not only in the major District centres, but also among the settlement schemes, where a reduction in the numbers of scheme families would not reduce the productivity of the irrigation schemes overall. One observes underdevelopment in the District coupled with underemployment, and unemployment resulting in absolute poverty. A survey carried out by Oxfam, 1983, on livestock development in the District, indicates that about 46% of households have turned to the famine relief programme as a last resort, after their wealth in livestock has been destroyed by severe droughts between 1980 and 1983.

The prevailing situation in the District goes back to the traditions of the Turkana people who almost totally depended on livestock production, only occasionally supplemented with small-scale cultivation, hunting, gathering and fishing. Lately, trade and regular wage-employment have broadened their resource base to cover a few Turkana people joining wage-employment. Also, the living standards of some settled at the irrigation schemes are higher than those of their fellow pastoralists. For instance, some households in the scheme in a good year receive annually at least KShs. 10,000/- in monetary terms for the produce from a 0.5 hectare farm, while an average household with 5.3 l.s.u. receives KShs. 5,000 in monetary value.

Subsistence Patterns. As described above, it appears over 50% of the Turkana people are still living a pastoral life, while others have a mixture of small-scale cultivation along the river beds of the schemes and livestock production with an average of 1.1 l.s.u. per household.

On the whole, nomadic pastoralism is the major traditionally known and acceptable way of subsistence. However, this way of subsistence is constrained by the low resource potential in the District in comparison to population pressure on the land. There exists an underutilisation of relatively good grazing areas in the north-west, along the Turkwell, and in the south-east zones, due to the security problems caused by cattle-rustlers. The remaining grazing areas are depleted by the large herd sizes, prized for their quantity rather than the quality of the herds. Therefore, overstocking and overgrazing remain a constraint to raising the subsistence levels of the pastoralists. Improving the quality of the livestock and utilisation of grazing areas should be a future priority.

There is no organised livestock marketing or holding grounds or improved range management in the District. There exist only local slaughter of cattle and shoats and some exports of shoats outside the District. Yet it is abundant in livestock and this potential has not been fully utilised. To a Turkana household, these animals are not valued only in monetary terms, since they remain useful to such households in the provision of meat, milk, blood, clothing, and as the last hedge against famine.

Another form of subsistence is fishing. A group of Turkana along the Lake have used fishing as a way of earning a living for many years. Today this activity is flourishing, with the establishment of the Turkana Fishermen's Co-operative Society. Records show that fishing is the largest commercial enterprise in the District. The Co-operative Society has 4,500 members, 180 rowing boats and 5 motorised boats (see Table 1.5).

In the typical year, 1981/82, the Society had turnover of KShs. 4.9 million. Sun-dried tilapia is, so far, the major commodity for sale in and out of the District. Apart from selling outside the area, the local communities depend on the daily catches for their food. One feels that the nutritional standards in the District are very low, and a bias towards the use of fish as part of the diet may improve the situation.

Table 1.5

Fisheries Statistics				
Period	No. Members	No. Employees of the Society	No. Boats	Turnover KShs.
1981	4,000	120	120	4,907,024
1982	4,500	157	180	14,000,000
1983 (June)	4,500	170	183	—

Source: Fisheries Dept., Lodwar.

Finally, traditions say that some of the Turkana people have never been cattle-keepers, but earned their living by tilling small, irrigated farms. Today many families have been

settled in the irrigation schemes, with less involvement in livestock production (average of 1.1 l.s.u. per household). Irrigated agriculture started after the realisation by the Turkana people that it is risky to depend only on livestock production. Outside the major schemes, water harvesting, water spreading and rainfed agriculture are practised by other local communities who have settled through the Turkana Rehabilitation Programme or who have earned their living this way. One observes that the irrigated agriculture, in the long-run, can be used as an approach to help alleviate food-deficit situations and poverty within the District. Unfortunately at present most of the irrigation schemes are uneconomic and heavily subsidised, where participating families often have income that barely cover subsistence needs.

Indices of Poverty. It is well understood from an economic point of view that different approaches to measure poverty and national (regional) income of a community have been inadequate. However, from the simple statistics we have in the Turkana District, an ever-increasing number of destitutes and a deteriorating nutritional standard appear to affect the 60% of the population that are below the poverty line. The report by Oxfam, 1983, indicates that 46% of the population were settled through TRP as destitutes, while some others, along the Lake and the major irrigation schemes, can be regarded as destitutes. The story of famine relief goes back to 1930's, when the colonial government embarked on such a policy. It is said that by 1982, about 80,000 people were recipients of food and other foodstuffs from the GOK and TRP, although this figure had been considerably reduced by 1983.

PROJECT AND PROGRAMME IMPLEMENTATION RECORD 1979-1983

Production Sectors

Agriculture Sector. The statistics available are fragmentary and do not tell how this sector performed over the past Plan period. Irrigated agriculture has been started in the river valleys. Along the Turkwell, the irrigation schemes are Loyapat, Katilu, Kekorangol and Lotubai. Outside the schemes, crops can be grown by water harvesting and spreading.

By 1982 the hectareage within the irrigation schemes for various crops was estimated to be as follows:

Table 1.6

Period	Crop Hectarage				
	Cotton	Maize	Sorghum	Citrus fruits	Green grams
1981	60	200.4	508	15	120
1982	82	250.0	500	20	120
Target 1983	100	500.0	1000	40	150

One notices that there has been some substantial achievement in crop development in the schemes.

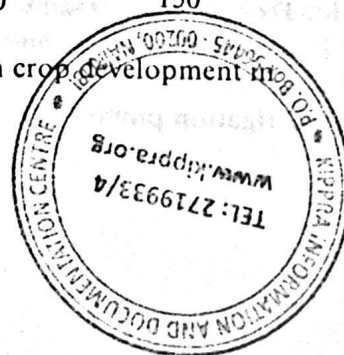


Table 1.7 lists the irrigation schemes in Southern Turkana, the date they were started, their original sponsoring organisation, their size, number of settlers and the area per settler.

Table 1.7

Irrigation Schemes in Southern Turkana

Schemes	Date Started	Sponsor*	Present Size (Ha)	Settlers	Area/Settler (Ha)
Kekerongole	1966	GOK/ MOA	28	60	.47
Katilu	1970	GOK MOA	211	520	.41
Juluk	1971	Diocese	52	215	.24
Nakwamoru	1971	Diocese	48	110	.44
Loyapat	1972	PCEA	17	45	.38
Amolem +	1975	GOK/ MOA	52	220	.24
Lokori/Lotubai	1979	AIC	80	990	.08

N.B. * List of Sponsors — GOK/MOA: Kenya Government, Ministry of Agriculture; GOK/TRP: Kenya Government, Turkana Rehabilitation Project; Diocese: Catholic Diocese of Lodwar; RCEA: Reformed Church of East Africa; AIC: African Inland Church.

N.B. + Amolem Scheme is in West Pokot District, 4 km from the Turkana border. It has always been administered as part of the Turkana Irrigation Cluster.

The Ministry of Agriculture has the longest experience with irrigation in Southern Turkana with its schemes at Turkwell, Katilu and Amolem which form the Turkana Irrigation Cluster. These schemes were originally set up with a very paternalistic style of management. The ridge and furrow system required mechanised land preparation for which the costs were never recovered. Farmer involvement in the operation of the schemes was very low. It was argued that this style of management was necessary because of the overall unfamiliarity of the Turkana settler with crop cultivation. Ultimately, however, this system resulted in an excessive cost structure, with the schemes over-mechanised and over-staffed. At the beginning of 1982, the Ministry of Agriculture employed a staff of 190 and Government operating costs exceeded the value of crops produced by the farmers. Financial constraints, which particularly affected the supply of fuel, also had a detrimental effect on scheme performance and resulted in delayed cultivation, and, in 1982, the lack of any irrigated crop at Amolem because of insufficient fuel to operate irrigation pumps.

Because of these problems the Ministry of Agriculture decided in January, 1983 that it would progressively withdraw from management responsibility for the schemes and hand this over to farmers' organisations. It was realised that this would be a gradual process, that the schemes needed re-organisation and some further investment before they could be handed over, and that the tenants would continue to require advice both on irrigation agronomy and on the operation and management of the irrigation systems. During 1983, some progress has been made towards this objective with a substantial reduction in Government staffing, the introduction of basin irrigation, facilitating land preparation by hand, the implementation of water management schedules and improved reliability of Government services associated with an assured fuel supply. At Katilu it has been decided that the farmers co-operative should, in future, assume management responsibility and steps are being taken with the recruitment of a management adviser to strengthen the Society to assume this role.

The irrigation schemes established by the missions have generally involved a considerably lower level of investment costs and have achieved a much higher degree of farmer involvement in their establishment and operation. In the past, some of these schemes, particularly those at Nakwamoru, Juluk and Lokori/Lotubai, have operated more efficiently and achieved higher yields than the Government schemes. However, in 1983 this situation has been reversed partly because of the measures taken on the Government schemes, but also because of a rapid drop of performance at the mission established schemes. At Nakwamoru and Juluk this was associated with the departure of the manager who had helped to establish the schemes; responsibility for the scheme's operation was transferred to a co-operative society and management deteriorated fairly quickly. At Lokori, the scheme underwent expansion from 28 ha to 80 ha with the number of farmers increasing to 900. The deterioration in performance was almost certainly associated with the large number of farmers, presenting an impossible task to management. Both of these experiences indicate a continued need for technical and management advice to the existing schemes. Indeed, the lack of technical back-up had previously resulted in a number of mistakes in the development of mission schemes, such as development of areas with unsuitable soils and poor design of irrigation systems.

The Turkana Rehabilitation Project (TRP), which was established to handle famine relief and rehabilitation of destitutes following the 1979-81 drought, has recently become involved with development of simple, low-cost irrigation schemes. Sites currently under development are on the Turkwell and Kerio deltas, and at Kalemunyang on the Turkwell. In addition TRP is supporting the expansion of the Lokori/Lotubai scheme. These schemes have been established with very little technical input and for this reason there must be grave doubt about their long-term future. The Kerio Valley Development Authority (KVDA) has been involved with irrigation development in West Pokot District and has expressed interest in developing further schemes in Turkana. However, no plans have yet been submitted and it should be emphasised that any such proposals should fall within the District policy framework for irrigation development.

In many respects, the Turkwell and Kerio Rivers are not ideal for irrigation. Both rivers are seasonal for much of their length in Turkana, preventing continuous cultivation, thereby precluding triple cropping at most sites. The Turkwell is also subject to flooding and frequent changes of course which remain a threat to the continued operation of the schemes established. These factors adversely affect the viability of the schemes and raise the question of whether further development can be justified.

As noted above, some irrigation families do quite well on some schemes. However, the Government schemes have not provided a basic subsistence income in the past for many families. In two separate surveys at Katilu in 1982/83, average gross income per family was calculated as ranging between KShs. 1,230/- and KShs. 1,648/-. Undoubtedly, this can be substantially increased with better management. Another factor is that little attention has been given to relate plot size to family needs; this is particularly evident at Lokori where an average of only 660 m² is allocated per farmer.

Livestock Sector. The main objective of livestock development during the past Plan period was to increase the commercial off-take in order to combat overgrazing and at the same time make livestock a source of income for a greater number of people.

The required removal of the Contagious Bovine Pleuropneumonia Quarantine was sought through intensified veterinary services, including herd health service, dipping facilities, grazing block management, as well as development of a holding ground. This project was not implemented due to lack of funds. The rest of projects in this sector are presented in the Table below.

Table 1.8

Selected Livestock Sector Implementation Record Over 1979/83 Plan Period

Project	Activity	Remarks
Kakuma Livestock Improvement Project	Educate stock owners on stock diseases, management practices and livestock marketing; replicate this in other divisions of the district.	Partially implemented and ongoing
Livestock Marketing (Small Stock)	Goats and Sheep Marketing Scheme.	Funds were released by the donor or Ministry
Livestock Marketing (Large Stock)	Development of Lotongot holding ground and water points.	No funds were released by the donor or Ministry
Sale Yards	In all five divisions.	Funds available.
Kapatur Cattle Dip	Construction of the dip in 1982	Started, but not complete as the contractor disappeared.
Five Cattle Dips	Construction of five cattle dips at Lokangai, Lorgum, Ngibila, Kaimothia and Kalabata.	Construction almost completed at Ngibila, while work at Kalabata has started. Rest of dips have been sited, materials purchased and work to start soon.
Eight Cattle Crushes	Construction of eight cattle crushes at Lokichar, Lokichoggio, Kalokol, Nadapai, Lorengippi, Kerio Delta, Kakuma, and Kaimothia.	Construction has been completed. Work on the remaining three at Lokichoggio, Kaimothia, and Kakuma to begin soon.

Forestry Sector. This sector has been comparatively inactive in the District. However, apart from some other sources of funds, NORAD has financed six activities in this sector:

- Experimental and demonstration plots;
- Protection and conservation;
- Departmental support through the provision of buildings, transport and equipment;
- Extension and education; and
- Meteorological observations.

A total of 16 fenced and 42 unfenced experimental and demonstration plots have been established. Those visited around Lodwar show high survival rates, with the indigenous Turkana species performing particularly well. Where possible, people from the famine relief camps have been used for plot establishment, tree planting and watering, although 20 people have been employed directly by the Project. To date, it is a general feeling that fencing of plots in Turkana, except perhaps in high potential riverine areas, is uneconomic and should be discouraged in future.

A most disturbing development in recent months has been the re-issuing of permits for charcoal traders to take charcoal out of the District. This follows a previous ban on charcoal trading which had operated since early 1982. The Steering Committee on ASAL/TRP Programmes has agreed that the matter should be reviewed again by the appropriate licensing committee.

Since 1982, the following facilities have been provided to the Forestry Department: office/store buildings at Kalokol, Lodwar and Katilu (under construction); two staff houses at Katilu (under construction); and a 4WD vehicle for the DFO.

There is need for the officials of Forestry Department and the Technical Assistance personnel to work together, rather than in isolation. In the future, co-ordination between the two teams is necessary as they are called upon to undertake the following measures:

- A three year project proposal should be prepared by mid-1984. This should clearly and succinctly state objectives and measures considered necessary to achieve these objectives. The resources required over the period should be detailed together with the respective GOK and donor contributions. The document should explain the institutional arrangements under which the project will operate, clearly defining the roles of the District Forestry Department staff and the Forestry Adviser.
- No further buildings should be constructed under the Programme or vehicles purchased until it is clear that these are essential to the attainment of the project's objectives, and that the necessary cooperation is present; and
- The employment of staff directly by the Programme should be phased out, as it cannot be justified when the Forestry Department itself has a large number of underutilised staff. However, this needs to be linked to the exercise of greater discipline over Forestry Department staff and some transfers to stations presently understaffed.

Commerce. The Department of District Trade Development Office was opened in January 1982, and the following paragraphs are some of the activities accomplished since then.

Under the auspices of the District Trade Development Joint Loan Board, established in 1970, loans ranging between KSh. 2,000/- and 20,000/- were granted, as shown below:

Table 1.9

Loan Allocations — 1979-1983

Period	No. of Loanees	Total Grants* (KShs.)	Government Allocations (KShs.)
1979/80	17	122,000	240,000
1981	N/A	N/A	N/A
1982	26	221,000	85,000
1983	12	112,000	45,000

Source: Trade Office, Lodwar

*N.B. Includes carryovers from earlier unexpended grants.

Licencees to traders under the Trade Licensing Act were given as tabulated below:

Table 1.10

Allocation of Licences for Trade 1982-1983

	Wholesale Licences	Caterers	Motor Vehicles Repair	Regulated Trade	Miscella- neous	Manufac- turers
1982	9	23	4	313	2	—
1983	9	17	2	212	5	—
TOTAL	18	40	6	525	7	Nil

Source: Trade Office, Lodwar

Regulated trade records the highest number of licencees and this implies that this type of trade became a major source of earning for a number of people over the past Plan period.

There exist seven authorised agents for K.N.T.C. to supply various commodities to the residents in the District. How many of these appointed suppliers are local Turkana people is not known, but it appears that all of the seven may be outsiders.

During the past Plan period only three traders benefited from the Loans scheme of ICDC totalling KShs. 180,000/-. Once more, there is little evidence as to whether the loanees were locals. Finally, no record of the repayment of the loans granted is presently available.

Physical Infrastructure Sectors

Transport and Communications Sector. Six major projects in this sector were constructed and completed during the Plan period, as shown below:

Table 1.11

Selected Transport and Communications Implementation Record over 1979/83 Plan Period

Project Name	Activity	Remarks
Lodwar Airstrip	Construction	Completed
Lokichoggio A1	Construction	Completed
Oropoi E367	Construction	Completed
Oropoi Airstrip	Construction	Completed
Lokori Bridge	Construction	Completed
Kakuma Bridge	Construction	Completed

There are two on-going projects, namely, the Kapenguria-Lodwar-Kalokol Road, which is in the process of bitumenisation, and the Kenya-Sudan Road Work. Otherwise, this sector experienced little attention or implementation.

Water Sector. Under Phase IV of the Rural Supply Programme in the District, eleven water schemes were proposed to be constructed during the 1979/83 Plan period. Construction was undertaken on nine and five had plans and designs completed. Only three have been completed entirely. (see Table 1.12). The reasons for this implementation record included technical as well as financial problems, as follows:

The general topography of the District makes it difficult for water tables to be reached easily (without use of costly drilling operations). During the Plan period, however, the Ministry of Water Development, with Norconsult, drilled boreholes along the Kenya-Sudan Road; 29 were drilled, 20 boreholes were found positive, and equipping is being considered for some 16 boreholes. Still, a number of boreholes do not have potable water for domestic consumption.

The present overstrained maintenance capacity of several of the existing supply schemes such as Lodwar, Lokitaung, Kataboi and Lokichar, requires considerable attention.

The pricing policy, vis-a-vis the inability of the local people to pay for water hampers the local demand for improved sources.

The underutilisation of the enormous run-off the Lake, where it evaporates under intense heat instead of being harnessed for economic benefits such as irrigation and ranching, represents a wasted potential.

The technical know-how for design is not available in the District.

Table 1.12 Selected Implementation Record for Water Projects over 1979/83 Plan Period

Selected Implementation Record for Water Projects over 1979/83 Plan Period

This section was

compiled during the plan period as shown below

Project Name	Planning and Design	Construction	Completed
Katilu	X		
Lorugum		X	
Kakuma		X	
Kerio Village	X	X	
Lokori Wells		X	
Lokitaung	X	X	
Namadak	X	X	
Loarengak		X	X
Kalakol		X	X
Nakwamekwi		X	X
Kaptir	X		

Source: District Water Office, Lodwar

It is the two on-going projects, namely the Kaptega-Lodwar-Kalakol Road, which is in the process of being completed and the Kerio Subur Road Work. Otherwise, the work is expected with attention on implementation.

Water supply projects in the District eleven years were provided to be completed during the 1983/84 plan period. The reasons for the implementation of the projects are given in Table 1.12. The reasons for the implementation of the projects are given in Table 1.12. The reasons for the implementation of the projects are given in Table 1.12.

The general topography of the District makes it difficult for water tanks to be sited. It is of course difficult during operations. During the plan period, however, the water supply projects were provided to be completed during the 1983/84 plan period. The reasons for the implementation of the projects are given in Table 1.12. The reasons for the implementation of the projects are given in Table 1.12.

The present water supply projects are of several of the existing supply schemes. The present water supply projects are of several of the existing supply schemes. The present water supply projects are of several of the existing supply schemes. The present water supply projects are of several of the existing supply schemes.

The implementation of the projects is not complete in the District. The implementation of the projects is not complete in the District. The implementation of the projects is not complete in the District. The implementation of the projects is not complete in the District.

Social Services Sectors

Basic Education. Table 1.13 shows current yearly enrolment and other pertinent figures for primary school education during the last Plan period.

In 1979 enrolment was low due to the terrible drought that caused famine; people died while the rest became too nomadic, along with their children. Since then, the enrolment trend can be seen to have kept on rising in both pupils and streams. Schools also have increased from 25 in 1979 to 63 in 1983. In particular, missionaries creating more schools, Government providing low cost boarding schools, parents being under the TPR in grouped manyatta camps, and Government providing both the school milk programme and the school feeding programme, have all contributed to the increase of pupils in schools. The Government also from 1979 established compulsory education for the Turkana pupils.

Under the school feeding programme for primary schools in the District, pre-primary school children are fed and this has encouraged many to stay and continue to Std. I. The pre-primary classes are 47 in the entire District. As the data show, the yearly intake of Std. I class starts with the highest number of pupils in the year. This is disrupted by parents who attract the boys back to the traditional herding and fishing systems in the District. For instance, out of 7,209 boys admitted to Standard I in 1982 only 3,014 proceeded to the next grade in 1983, a more than 50% drop out; and also of the 4,501 girls who went to Standard I in 1982, only 1,500 proceeded to Standard II in 1983; a more than 60% drop out. Parents, and particularly mothers, keep their daughters home. They believe that if they continued with learning they would lose their traditional reputation necessary for dowry purposes. The other thing which causes a lot of drop-outs is the pupils' feeling that they have now acquired enough education to enable them get jobs in any sector. This can be noted from boys and girls of Std. 7 education refusing to go to secondary schools just to find jobs as teachers (UTS).

But beyond the comments given above, one observes a lot of improvement in the local peoples' response to compulsory primary education. The overall rate of implementation was over 100% (an increase from 25 primary schools to 63, and from a total enrolment of 5,585 to 20,133 pupils). The only constraint was the high post Std. I drop-out rate.

It is also worth looking at the capital investment in basic education in the District, since 1979 when it became compulsory education.

1979/80	Ksh 1,964,900
1980/81	Ksh 2,951,712
1981/82	Ksh 4,971,860
1982/83	Ksh 4,970,929

This appears to be one of the highest Government sector expenditures in the District.

Table 1.13
Primary Schools Enrolment

Years	Std. I		Std. II		Std. III		Std. IV		Std. V		Std. VI		Std. VII		Totals		Grand Total	No. of Streams
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		
1979	1,318	687	475	375	510	256	427	215	448	174	300	84	245	46	3,723	1,837	5,560	112
1980	3,391	1,691	1,081	475	663	275	520	146	397	143	378	99	382	84	6,812	2,913	9,725	285
1981	5,630	3,056	1,642	848	938	430	612	221	462	168	380	131	348	94	10,012	4,948	14,960	336
1982	7,209	4,501	2,500	1,107	1,252	504	685	279	530	170	467	170	311	91	12,954	6,822	19,776	493
1983	5,954	3,610	3,014	1,500	1,791	699	1,031	372	607	221	596	189	596	189	13,589	6,780	20,369	545

Source: Education Dept., Lodwar

Table 1.14 provides some figures on the primary school staffing situation.

Table 1.14
Primary School Staffing

Year	Grades & Sex	S. 1	P. 1	P. 2	P. 3	P. 4	KACE	KCE	KJSE	CPE	TOTAL
1979	MALE	4	24	34	47	7	—	31	4	—	151
	FEMALE	1	—	—	1	1	—	8	—	—	11
	TOTAL	5	24	34	48	8	—	39	4	—	162
1980	MALE	3	22	34	44	12	1	33	46	3	198
	FEMALE	1	—	—	1	2	1	4	6	—	15
	TOTAL	4	22	34	45	14	2	37	52	3	213
1981	MALE	3	59	46	58	11	2	78	61	1	319
	FEMALE	1	1	1	1	2	1	7	2	—	16
	TOTAL	4	60	47	59	13	3	85	63	1	335
1982	MALE	—	85	40	45	10	—	98	22	89	389
	FEMALE	1	—	2	3	2	1	11	4	5	29
	TOTAL	1	85	42	48	12	1	109	26	94	418
1983	MALE	1	89	35	52	1	2	134	34	146	494
	FEMALE	1	2	3	3	1	1	12	8	14	45
	TOTAL	2	91	38	55	2	3	146	42	160	539

Source: Education Dept., Lodwar

On the whole, the staffing position in the District seems to have improved as a result of:

- Compulsory education raising the number of teachers.
- The TRP and SFP bringing more pupils to schools.
- The number of streams increasing and the ministry through TSC employing UTS including 125 Turkana. All the SI men became AEOS.

Finally, it must be re-iterated that the School Feeding Programme is a necessity, since it encourages more Turkana pupils to join school, hence making more teachers a requirement. Construction of boarding schools and more teachers' houses should be encouraged. The DDC and DEB meetings are working very hard to raise the number of teachers in Turkana and are trying to improve their quality by professional advice through inservice courses.

Higher Education. There are only three secondary schools in the District, namely:

- Lodwar Secondary School — Government aided.
- Turkana Girls Secondary School . — Government aided.
- Lokitaung Secondary School — Church aided.

The staffing situation in the three secondary schools is as follows (September 1983):

Table 1.15

Staffing in Secondary School

	Graduates	S. 1	UT/KCE
Lodwar Secondary School	8	—	—
Turkana Girls' Sec. School	3	2	—
Lokitaung Secondary School	—	—	3

Source: Education Dept., Lodwar

By September 1983, the student enrolment in the three schools is as given below:

Table 1.16

Secondary Student Enrolment

	Total Streams	Form I	Form II	Form III	Form IV	TOTAL
Lodwar Sec. School	5	87	41	42	35	205
Turkana Girls' Sec. Sch.	4	42	48	40	40	170
Lokitaung Sec. School	4	11	6	—	—	17

Source: Education Dept., Lodwar

Table 1.17 shows the physical facilities in the three secondary schools

One notices that, out of the three schools of higher learning started in the District, only two can be regarded to have attained the status of a full Government school. It seems that the failure to provide dormitories and other physical facilities contributed largely to the enrolment problems in Lokitaung. Also, the willingness of Std. 7 graduates to join primary school teaching contributed to low enrolment in not only Lokitaung, but also in exceptional during the 1979/83 Plan period. Secondary Schools at Katilu and Kalokol are to start from 1984.

Table 1.17

Secondary Schools Facilities

	Dorms	Class-room	Library	Phy. Lab	Bio. Lab	H/ Science Room	ADM Block	Dining Hall	Staff Houses	Stores	Laundry Room	Toilet Blocks	Asse mly Hall
Lodwar Secondary School	6	5	1	1	1	—	1	1	6	1	1	2	1
Turkana Girls' Sec. School	4	4	1	1	—	1	1	1	8	1	1	2	—
Lokitaung Secondary School	—	—	—	—	—	—	—	—	—	—	—	—	—

Source: Education Dept., Lodwar

Health Sector. During the past Plan period the major health problems have been related to communicable diseases, contaminated water supplies, and inadequate waste disposal. For instance, hydatid cyst disease (larval stage of dog tapeworm) is common due to poor hygiene and close contact with dogs. It affects mostly young women and children. A summary of the major diseases in the District is given below, together with the seriousness they represent, in terms of probable mortality rates attributed to them:

Table 1.18
Common Diseases

Disease	Target groups	Mortality
Gastroenteritis	Children under 5 years	10-15%
Broncho-Pneumonia	Children under 5 years	15%
Malaria	All population	0.5%
Measles, Whooping Cough and Chicken-Pox	Children under 5 years	1-5%
Meningitis	Children, young adult	5%
Anaemia and Nutritional Disorders	Children and Pregnant women	5%
Tuberculosis	All population	1%
Visceral Leishmaniasis	Children and Young Adult	5%
Hyena and Crocodile Bites	Men and children	1%
Tapeworm	All population	negligible
Eye Infections	All population	negligible
Typhoid Fever	5-15 years	10-15%
Infectious Hepatitis	All population	5.5%
Amoebiasis	Adults	1%
Epilepsy	Children and young adults	5.5%
Leptosy (under diagnosis)	Adults	5%
Tetanus (Neonatal)	Infants	25%
Guinea Worm	Older children and adults	negligible

Source: District Hospital Records

Below is a list of the health projects undertaken during the Plan period. Brief remarks on the health sector implementation record are provided below:

Table 1.19

Selected Implementation Record — Health Sector for 1979/83 Plan Period

Project	Activity	Remarks
1. Lodwar District Hospital	Expansion from 50 beds to 192 beds at Ksh. 23 million	95% complete. Completion delayed by two years due to failure of electrical contractor to complete work
2. Lokitaung Sub-Hospital	Expansion of its facilities stopped due to its under-utilisation. 30 beds planned	No plans yet prepared by MOH. To be funded by NORAD 1984/85
3. Rural Health Centres (Programme Development)	Four rural health centres under mission administration. It was expected the Government would establish uniformity in these or take them over	Not yet implemented.
4. Katilu Health Centre	Expansion from 10 to 25 beds at Ksh. 6 million.	80% complete
5. Kerio and Namukuse Dispensaries	Construction at KSh. 1.5 million each.	90% complete.
6. Lokichoggio Health Centre	Upgrading from a dispensary to a health centre.	Complete.
7. Mobile Units	Increased from 7 to 13	Complete.
8. New Dispensaries	5 new Dispensaries under TRP	Complete.
9. Harambee Facilities	Through Harambee to construct new facilities where needed.	The movement not yet started.
10. Staff members	263 personnel required	Only 152 available.

Source: District Hospital

Major health sector constraints within the District range from lack of personnel to lack of physical facilities. The District is understaffed as shown by Table 1.20. Also inadequate transport and housing for the staff constrain effective provision of health services in the District with such low population density.

Table 1.20

STAFFING — MEDICAL SERVICES

Staff	Staff Complement	Shortfall
Medical Officer of Health	1	0
Medical Officer	1	2
Physician	0	1
Surgeon	1	0
Nursing Officer II	2	0
District Public Health Nurse	1	12
Nursing Officers III	7	18
E.C. Nurses III	20	
Enrolled Nurses III	12	
District Public Health Officer	1	0
Public Health Officers	4	0
Public Health Technicians	19	0
Hospital Secretary	1	0
Clerical Officer	1	1
Junior Clerical Officers	2	2
Pharmacist	0	1
Pharmaceutical Technologists	2	
Laboratory Technicians	4	3
Laboratory Technologists	1	2
Records Technician	1	1
Occupational Therapist	1	1
Physiotherapist	1	1
Radiographer	1	1
Film Processors	2	
Clinical Officers	15	2
Family Health Educators	10	0
Drivers	5	60
Patient Attendants	9	
General Attendants	17	

Source: District Hospital

Public health care depends upon the function of other services, particularly in the social sector. The failure of the latter determines to a great extent how public health in the District improves or deteriorates. The section on water development projects indicates that only a few of the proposed RWS water projects were completed. This implies a lack of clean water to a major part of the population. Moreover, sanitation standards are still very poor. This requires educating the local communities and demonstrating to them the necessity of new lifestyles. Finally, it was proposed in the last Plan period to develop a proper system of controlling vectors in the District. An entomological section should be established in the District to deal with this existing problem.

Cultural and Social Services

Training Centres and Adult Education. Out of two Village Polytechnics proposed in the last Plan, only one was constructed and operational. In total, however, there are five Village Polytechnics as follows:

Table 1.21

TRAINING CENTRES ENROLMENT — 1979/83

	1979	1980	1981	1982	1983
Lodwar Village Polytechnic	20	45	27	76	84
Loyapat VP	—	—	—	—	8
Lowarengak VP	—	—	—	—	—
Kalakol VP	—	—	—	—	—
Lokitaung VP	—	—	—	—	25

Source: District Community Dev. Office.

Poor enrolment results from failure of the VPs to provide feeding and boarding facilities. Since 1980 to date, there have been serious droughts, which have also contributed to poor enrolment. It should be noted, though, that the Lodwar Village Polytechnic is said to be one of the best VPs in the Republic, carrying out a number of construction contracts.

The Diocese of Lodwar presently has 50 teachers and 6 supervisors undertaking some 50 classes for 1,000 adults in literacy training across the District. The GoK Dept. of Adult Education presently has 60 full time and 66 part-time teachers.

Women Programmes. Since 1979, the women organisations have increased from 37 to 52, with about 3,830 members. These groups have benefitted from the Government by a total of KShş. 232,000, but this figure does not include non-governmental assistance. Such groups are possible vehicles for change in the District.

Sports Programme. There are sports' grounds in Lodwar, Katilu, Kalokol, and Lokitaung. Other sports clubs have been started.

Community Development. Over the past Plan period the local communities have been motivated to participate in self-help programmes by contributing labour, material or money. Along with these self-help contributions, the central Government and voluntary bodies have contributed tremendously to self-help efforts. There were 82 self-help projects completed in 1979/83 Plan period.

Social Welfare. There are two children's homes in the District and one of them started during the Plan period. There are thousands of destitutes that these two homes cannot cater for all the children of these families. Below are the registered figures of disabled persons, but these figures underestimate the actual number considerably.

Table 1.22

DISABLED PERSONS

Disability	Male	Female	Total
Deaf/Dumb	27	18	45
Blind	128	149	277
Lame General	109	45	154
Crippled	102	65	167
Mentally Handicapped	48	23	71
Totals:	414	300	714

Source: District Community Dev. Office

INFRASTRUCTURE UTILISATION

From the utilisation record set out for water projects in Table 1.23, it appears that three projects are overutilised, others are underutilised and efforts should be made to make these fully utilised. It has to be recognised that the limited GOK capability to maintain adequately its improved water supplies makes it absolutely imperative that this Plan put its emphasis in water development on simple, low technology water sources which are easily used and maintained by water users, e.g. the TRP shallow wells programme.

Table 1.23

UTILISATION RECORD — WATER SECTOR

Annual Production	Existing Connections	Remarks
Lodwar — 125,500m ³	200 connections and 9 Flat Rate	Overutilised because of the increasing population in Lodwar and its environs.
Kalokol — 38,676m ³	11 connections	Underutilised because only the schools and health centre are supplied while the settlements around them are not. Provision has not been made for a connection to them.
Lokitaung — 5,736m ³	27 connections	Overutilised.
Lokichar — 8,544m ³	13 connections	Overutilised due to increased settlement, development of schools, dispensaries, etc., in the area.

Table 1.23 (Cont.)

UTILISATION RECORD — WATER SECTOR

Annual Production	Existing Connections	Remarks
Makutano — 3,420m ³	3 connections	Underutilised since the local people choose to use free water.
Loarengak	NIL	New Scheme. Free Water.
Kakuma	NIL	Free Water.
Lokichoggio	NIL	Free Water.

Source: District Water Office



PRODUCTION TRENDS

It was pointed out earlier that statistics on the production sectors are inadequate. It is difficult with the data available to deduce whether productivity in the three major sectors declined or increased during the Plan period. In this section, the data available are documented to illuminate the potentiality of the land, rather than to describe it in detail.

Agriculture Sector

The data presented here are taken from the irrigation schemes, whose co-operative societies kept records of the marketed produce. This information excludes the produce purchased or consumed outside the market. Other figures on agricultural production were set out earlier in the Plan.

Table 1.24

AGRICULTURAL PRODUCTION FIGURES (TONNES)
FOR COMMERCIAL SALE

Period	Cow-peas	Maize	Citrus fruits	Bananas	Millet	G/Grams
1982	—	600	250	10	250	—
1983	60	900	250	10	250	60

Source: Turkana District Agriculture Office. Also see Table 1.6.

Livestock Production Trends

The livestock population is going down because of the severe droughts and various diseases. The available information from Ecosystems and KREMU is given below on livestock trends.

Table 1.25

LIVESTOCK POPULATION TRENDS

Type of Stock	1978	1981	1982
Cattle	522,895	147,054	160,100
Shoats	2,667,715	1,117,800	1,099,693
Camels	112,383	107,968	96,000
Donkeys	78,336	—	76,200

Source: Turkana District Livestock Dev. Office

From the Turkana Fishermen's Co-operative Society, it appears that the catches for both sundried and salted fish have increased tremendously over the last three years. It may be that the Lake has the potential to provide more fish, although there is disagreement as to whether the Lake is depleted, especially in Tilapia. However, one observes an increasing production trend in the fisheries sector. Also, the available information indicates an increase in the amount of authorised fishing, from 120 to 183 fishermen, during 1981/83 period. See Table 1.5 for more details on the fishing in Lake Turkana.

DEVELOPMENT INSTITUTIONS

Locational Development Committees

These committees have been formed in all locations but their effectiveness leaves much to be desired. Sub-Locational Development Committees virtually do not exist. The Locational Development Committees are expected to meet monthly or at any other time the need arises; on average they may meet twice a year. The membership of the committees is the chief and his assistants, the councillor of the area, the local MP, religious leaders, traders and civil servants at a locational level.

Kakuma Division has an active LDC in Lokichoggio Location, and Katilu has an active one in Kaputir. The presence of missionaries makes these locational committees active. The level of understanding of the chiefs and members of the LDCs makes them less effective.

Divisional Development Committees

The five divisions of the District have variable Divisional Development Committees. They meet quarterly or as the need may arise; on average they should meet

two or three times in a year. The average membership of a DVDC is 20 persons. MPs very rarely attended DVDC meetings.

In 1982, the Central Division submitted the most projects and Lokori Division the fewest. The difference can only be explained in the frequency of meetings held and the resultant recommendations. Implementation rates of the projects are low in all the divisions. The DVDCs keep minutes of their meetings.

To date, the LDCs and DVDCs in Turkana District have not been as active on the whole as the DDC.

District Development Committee

The District Development Committee is supposed to meet quarterly, but if need be, it can meet more often. The DDC has met twice yearly between 1980-82.

The average membership of the DDC is 50 people. In the 1982 meetings, no notable absenteeism was evident. Under the DDC, various subcommittees exist. These include the Water and Soil Conservation Committee, which regularises the cutting down of trees for building and charcoal burning, as well as afforestation and soil conservation measures. It met twice in 1982, but has increased its frequency of meetings in 1983.

Other sub-committees include the Turkana Rehabilitation Project and the Arid and Semi-Arid Lands Committee. This is a steering committee which deliberates on the two projects in the District. This is not an old committee and most of its meetings have been held in 1983, at the frequency of one per month. The District Livestock Development Committee is a newly formed committee and it monitors projects and programmes for livestock development in the District.

An average DDC meeting takes six hours. One hour is spent on the matters arising from the previous meetings. As a decision-making organisation, the DDC is hampered in its effectiveness by such factors as its large number of people, who suggest many projects and programmes. The follow-up by departmental heads and implementation capacity of the District are also problems.

Central Government officers attend meetings when invited, but due to communication problems their invitations may arrive late for proper preparation for the journey involved to Turkana District.

An area for future improvement will be to open better channels of communication between the wananchi and the Government staff in the DDC, DVDCs and LDCs, particularly so that the District Development Committee can become an improved vehicle for meeting the aspirations of the Turkana people.

Other Development Committees

Another District committee of importance is the District Education Board made up of 14 members, officially appointed by the Minister for Basic Education. The committee is made up of the following members:

- 3 members to represent churches
- 3 members to represent parents
- 3 members to represent local leaders
- 3 members to represent the community
- The DBEO — Secretary of the Board
- The DC — Chairman of the Board.

Also the local Members of Parliament are normally ex-officio members of DEB in their tenure of office.

The DEB is required to meet as many times as deemed fit by the Secretary and the Chairman or its members. In normal circumstances DEB should be convened at least three times a year, that is, once a term.

FURTHER RESOURCES IN THE DISTRICT

Land Potential

It has already been noted that 29.5% of the land in the District has limited agricultural development potential. If this land potential were developed, some of the problems that the District now faces could be lessened.

Minerals

The District contains various minerals but their economic potential is unknown. Prospecting has been going on for graphite, gypsum, copper, alluvial gold, and diamonds have been found in varying deposits. Petroleum has also been prospected for.

Energy

Various rivers originate outside the District in the higher mountains. The proposed Turkwell Gorge Dam, while being developed for its hydropower potential, will have some implications for expanded irrigation. The irrigated land along the Turkwell River could increase as well as the production of electricity. Wind and solar energy could be harnessed, as they are abundant.

Wildlife

Covering an area of 9,079 sq kilometres in the remote northern region of Kenya is one of the largest alkaline lakes in the world. Its huge area, with its unforgettable colour, well merits its secondary name of "Jade Sea".

This Lake is very rich in fish (Nile Perch, Tilapia, Tigerfish, etc.) and sport fishing is quite possible. Other than fish, the Lake is also populated with a large number of crocodiles. However, and in view of the fact that hunting of game has been banned by the

Government, the feasibility of crocodile farming at various points on the shores, such as Kerio Delta, Odochi, etc., should be investigated. There is also need to assess their exploitation for meat, skins, or eggs. Lake Turkana is a first-class tourist attraction. Two tourist lodges, Turkana Fishing Lodge (64 beds) and Eliye Springs (26 beds) are situated by the western side of the lakeshore. These can be reached both by air and road and the Kitale-Lodwar road is now almost completely tarmacked. Unfortunately, Turkana is remote from the main Kenya tourist circuits, thus having a depressing effect on tourist and hotel trade in the District.

Tourism

Central Island Park. The Central Island Park in Lake Turkana is bisected by the inter-district boundary between Marsabit and Turkana Districts. It covers an area of five kilometres and was gazetted in 1983. It is a major breeding area for crocodiles and colonies of nesting birds are abundant. Common birds are Egyptian geese, African slimmers, sacred ibis, cormorants, egrets and other rare species, who stop here on their northern migration between March and May. The beautiful shore-lines are ideal for tourists who prefer isolated beaches. On the island are three crater lakes, with plenty of flamingoes, crocodiles and fish, and in the many caves are found many varieties of reptiles. It is about seven miles from Ferguson's Gulf on the central-western shores of Lake Turkana. A plan for this Park is quite necessary before development can progress. Funds for the initial development have not come forward yet, hence the difficulties in carrying out a reconnaissance. A sizeable number of tourists and holiday-makers have called and stayed at the Island in the past years.

South Turkana National Reserve. This reserve was gazetted in 1979. It covers an area of approximately 1000 sq km and is located 100 km north-east of Kitale, below the western escarpment in the Rift Valley.

South Turkana National Reserve falls within the eco-climatic zone (V), which is classified as arid. The vegetation here ranges from remanent forest on hill-tops, to some riverine forest with acacia shrubland, on the Kerio River and dense thorn bushes on the plains.

Wild animals to be found in this reserve include elephants, buffalo, lion, eland, cheetah, greater and lesser kudu, oryx, grant gazelles, dikdiks and a variety of birdlife.

Among specific things of attraction are the greater kudus, two prominent mountain peaks at an altitude of over 1,200 m above sea level, a permanent fresh water spring at Lochakula, and a variety of game animals. This reserve is directly accessible from Kapenguria-Lodwar tarmacked road as well as Sigor-Lotongot and Lumut-Lukori murrum roads. There are airstrips for light air crafts at Kainuk, Marich, and Lokori.

With proper protection, wildlife herds could be built mainly through migrations from the neighbouring Districts. The reserve lies within the planning area of the Kerio Valley Development Authority. A total sum of KShs 614,000/-, in the form of grants-in-aid, which was provided for the initial development programme in the reserve, has not yet been utilised.

CHAPTER TWO DISTRICT DEVELOPMENT STRATEGY AND PRIORITIES

DISTRICT DEVELOPMENT POLICY

Overall Policy Strategy

Experiences from other developed regions of Kenya indicate that by marshalling the resource base within a particular region, income growth can be attained. In the next five years Turkana District needs to utilise all the resources at its disposal to attain further economic development. The secret in economic development is how the underutilised resources of a particular region can be tapped and combined to attain increased production. In addition, following the strategy set out in NDPV, the Government recognises that accelerated rural development cannot take place in Turkana without an active transfer of outside resources into the District, which has hitherto been underdeveloped relative to some other Districts in the Republic. While these are untapped resources in the District, no one should forget that many Turkana are of limited means and have little surplus to apply above subsistence.

From Chapter One, it appears that the infrastructural sectors have been increasingly developed while the production sectors are still very embryonic. It will be in line with the National Development Plan's theme, "mobilising local resources" to emphasise that the limited resources of the Turkana people in the production sectors should be better marshalled. Whether it is in agriculture, of livestock, or fisheries or forestry, each has untapped resources to develop this District. In the next five years these sectors should aim at mobilising underutilised resources to fulfill objectives like food production, income generation, employment generation, and alleviation of poverty. A number of factors point to these objectives as being realistic. It has been estimated that about 29.5% of the District has limited potential for agricultural development. Also, by tradition, the Turkana people are livestock keepers. The cattle and shoats from Turkana have found their way to the other regions as exports for many years. The Lake has been a source of earning a living and some exports have been shipped not only to other regions of Kenya but also outside Kenya. It is felt that a policy that tries to increase food production in the District by mobilising the local idle resources not only will partly attain the District objective of increased food production, but also will address other immediate problems, such as how pastoralism, overgrazing, malnutrition, poverty and underdevelopment can be partly alleviated.

The District development policy will focus on the following broad policy strategies:

- Utilisation of the high and medium potential agricultural areas for dryland crop production. This will involve a number of techniques including irrigation, water harvesting, or water spreading as deemed necessary. This aims at settling people down and making them economically active in agriculture.
- Improving the livestock development thrust by the better provision of veterinary services, secure grazing grounds, and the introduction of fodder crops and marketing facilities.
- Improving the fish potential in Lake Turkana such that new markets can be established, with market research on the varieties of fish in the Lake. Also needed is education of the rest of the Turkana people on how to use fish as a substitute for beef or shoat meat.

- Formulating a manpower policy whereby a pool of locals are trained to take over from expatriates, or people from other regions, so as to initiate development projects or programmes with a bias to develop their local area. This will be one of the ways to reverse the view of Turkana District being a punishment posting.
- Better co-ordinating of various development agencies, such that the few funds available go to develop the top priorities of the District, while avoiding duplication and assuring the continuity of the programmes.
- Also in support of the manpower policy, locals shall be used to educate the local communities on how to participate in the development endeavours as a move to be self-reliant and self-sufficient. This will remove the misconception that the Turkana man has to wait until the Government or a development agency will start a project or propose a programme.

Finally, it appears that potential land for agricultural development as well as livestock development will become more and more limited over time, hence other supplementary activities should be sought to accommodate the increasing population, especially the unfortunate who lose their livestock as a result of droughts. To this end, non-agricultural small-scale activities including handicrafts, leather work, construction, manufacturing, welding, retail trade, etc. should be encouraged. Studies in developing countries show that these activities are income-generating and are complementary to agricultural activities.

Relevant Ministry Policies

Production Sectors. The production sectors will form the basis upon which other activities will be built in the District. It has already been said that the overall District development policy will be to mobilise resources within the production sectors, so as to increase food production and generate income.

The agriculture sector will endeavour to develop a more reliable food production system within the identified development potential areas. In addition, the livestock sector will provide services which will improve the quality of the stock, such as veterinary services and holding grounds, with the aim of increasing commercial offtake, along with meat and milk production. The action policy which advocates the development of the livestock sector seeks to mitigate the effects of drought conditions on the people, and also enhance the capacity of the pastoral system to reabsorb people subsequent to severe drought. This is the objective behind mobilising resources in this sector. At the same time, activities both in agriculture and livestock will be co-ordinated at the irrigation schemes with strong support from the local communities.

In the past various Governmental and non-Governmental organisations have been involved in irrigation development projects in the District without involving the Ministry of Agriculture and often with complete disregard of the experience and knowledge gained in the irrigation schemes during the past two decades. A September, 1983 study by FAO/GoK/TRP team revealed that most of these projects were operating below their potential production capacity and therefore improvement and rehabilitation of the schemes is a

priority before embarking on any expansion or new projects. In future, the MOA will be responsible for approval and co-ordination of all agricultural projects in the District being undertaken by any Government department, parastatal, or other agencies. Depending on technical and economic considerations the MOA should be able to approve or vet agricultural projects and advise the DDC accordingly. The future should see a more co-ordinated approach to project formulation and better use of available resources and avoid unnecessary duplication.

The fisheries sector will continue to function under the auspices of the Co-operative Society but, from time to time, with Government intervention to search and establish markets and production frontiers.

Physical Infrastructure Sectors. To achieve the production objectives, complementary inputs such as water, roads, housing, etc., must be available. Ministries of Water, Transport and Communications, and Works must provide facilities at sites proposed as centres of activities. Many urban centres in the District lack clean water supplies, proper housing for Government staff and transport facilities. Although these sectors seem to be ahead of the production sectors in their provision of services, new services will be required during the Plan period because of the integrated development approach assumed in the policy strategy.

Social Services Sectors. It is envisaged that, although these sectors will adhere to their ministerial policies, special attention will be given to the socio-economic status of the population. The health and social services sectors will be instrumental in steps to educate the population on better sanitation standards, better housing, and community participation in development. These two sectors have very close contact with the people and, through their various programmes, they should disseminate different information on the District development.

The education sector has a large role to play in economic development in the District. Since the establishment of compulsory primary education and the school feeding programme in the District, there have been great strides in the improvement of the nutrition standards and literacy levels. During the Plan period, a manpower policy should be the focus for the Ministry of Education. This will aim at creating a sizeable group of **educated people in the District, who would participate in the development endeavours** and if possible replace expatriates and outside Government staff. Earlier, it was observed that the population structure of the District appears to indicate that there is a potential to develop this cadre during the Plan period, because 30% of the population will consist of the people who will need higher education.

More specifically, the objectives and goals of the Diocese of Lodwar's Adult Education Programme are over the next five years to have 10,000 presently illiterate adults able to: (1) identify their development needs; (2) take their first steps in trying to solve these problems and needs; and (3) read and write in first Kiturkana and Kiswahili. This is to be achieved by having 110 teachers and 9 supervisors providing literacy training by 1988. The Diocese's teacher training programme will include a series of workshops on lesson management, project activities, report writing and book-keeping. The Diocese will also continue and improve its women groups activities.

With this background information in mind, the following tables set out by sector the Project and Programme Priorities in the 1984-1988 Turkana District Development Plan. Each list does not include all the development activities undertaken by each Ministry, but only those that are major, important ones. These listings consist of proposals from a

number of different sources, namely DDC, Departmental heads, and Ministry headquarters. Where possible, project and programme proposals have been ranked in the order of their priority.

PROGRAMME AND PROJECT PRIORITIES, 1984/88

AGRICULTURE SECTOR

Project Name Location	Remarks
1. Consolidation of Irrigation Schemes Katilu, Amolem, Turkwell, Juluk, Kaputirr	A Ministerial proposal for an on-going programme. Proposed to fund/implement: MOA, NORAD. Settling people down and assisting them to develop a more reliable food production system. Project ending in 1984.
2. Southern Turkana Extension and Support Unit Southern Turkana	A Ministerial and DDC proposal for a new programme and an underutilised resource. Proposed to fund/implement: NORAD, MOA, MOWD: To provide more general support to agricultural development in Southern Turkana.
3. Expansion and New Irrigation Projects at Selected Sites	Local and Ministerial proposal to further irrigated crop production in district.
4. Northern Turkana Extension and Support Unit	Same as 2 above for Northern Turkana.

CO-OPERATIVE SECTOR

Priority Project Name Location	Remarks
1. Turkana Fishermen's Co-op. Society	NORAD assistance to major Co-op.
2. Facilities for Co-operative Development in the District Lodwar	A Ministerial proposal for an on-going project. Proposed to fund/implement: NORAD. Provision of additional vehicles, housing and office space for the Ministry's staff members.
3. Katilu Farmers' Co-operative Society Katilu, Katilu Div.	A Ministerial proposal for an on-going project. Proposed to fund/implement: NORAD. Grants so as to strengthen their activities in the district.

LIVESTOCK SECTOR *

Priority Project Name Location	Remarks
1. Livestock Dev. Centres Kaikor (Lokitaung) Kakuma (Kakuma Div.) Longwon (Centr. Div.) Lokori (Lokori Div.) Katilu (Katilu Div.)	Proposed by DDC for disease investigation/control. Proposed to fund/implement: MOLD/GTZ. Investigation of livestock diseases in the district is very necessary so that proper remedial steps are taken towards controlling the diseases.
2. Animal Health Vaccination Campaigns CBPP, Rinderpest CCPP, Goat Pox, Camel Pox (Trypanosomiasis) All Divisions	Proposed by Ministry and DDC for disease control. Proposed to fund/implement: MOLD/TRP. Cattle are exposed to dangers of getting CBPP, Rinderpest infection, due to the constant movement beyond the territorial boundaries in search for grass. This necessitates the vaccinations to prevent the outbreak of diseases. A CCPP vaccination campaign is necessary to prevent the outbreak of the diseases which occur frequently. Trypanosomiasis is endemic in camels in the district.
3. Livestock Marketing (a) Catchment Ponds (12) Lokitaung Div. (2) Lokori Div. (2) Central Div. (2) Katilu Div. (4) Kakuma Div. (2) (b) Shallow. Wells (5) Lokitaung (1) Lokori (1) Katilu (1) Central (1) Kakuma (1)	Proposed by DDC for marketing. Proposed to fund/implemented: TRP. Although livestock is the main source of livelihood here in the district, the pastoralists cannot sell their animals, especially cattle, outside the district because of CBPP quarantine which has been in force since early 1960s. It is through the development of water points, holding grounds, stock routes, outspans, etc., that eventually Turkana cattle will get sold outside the district for better money, hence the living standard of Turkana being uplifted.
4. Cattle Dips Kalabata (Lokori Div.) Ngibila (Katilu Div.) Lokangai (Kakuma Div.) Kaemothia (Loki- taung Div.) Lorgum (Central Div.)	Proposed by DDC for disease control. Proposed to fund/implement: RDF.

*NB All Livestock Projects, whatever their funding-source, are intended to be implemented through the Ministry of Livestock Development.

LIVESTOCK SECTOR (Cont.)

Priority	Project Name	Location	Remarks
5. Cattle Crushes	Kakuma Lokichoggio, Lorengippi (Kakuma Div.) Kerio Delta Kalolol, Nadapal in Central Div. Lokichar (Katilu Div.) Kaemothia (Lokitaung Div.)	Proposed by DDC for disease control. Proposed to fund/ implement: RDF. Dips are necessary for the eradication of tick-borne diseases. Tick-borne diseases are common in some divisions like Kakuma, Katilu, etc. Cattle crushes are vital since they facilitate cattle handling before any vaccinations/ treatment are done to livestock.	
6. Livestock Marketing	(i) Holding Grounds at Lotongot Holding Ground (Katilu Div.), Lokitaung (Lokitaung Div.), and Kakuma (Kakuma)	Proposed by DDC for better marketing. Proposed to fund/ implement: TRP.	
(ii) Construction of Sale Yards (10) at Lokitaung Div. Central Div. Katilu Div. Lokori Div. Kakuma Div.	Proposed by DDC for better marketing. Proposed to fund/ implement: NORAD/GoK		
(iii) Boreholes (6) at Kaikor (Lokitaung) Lokori (Lokori Div.) Lorgum (Central Div.) Lotongot (Katilu Div.) Kakuma (Kakuma Div.) Lokitaung Lodwar (Lokitaung Div.)	Proposed by DDC for better marketing. Proposed to fund/ implement: GTZ/NORAD. For holding grounds and development centres.		

WATER DEVELOPMENT SECTOR (Cont.)
LIVESTOCK SECTOR (Cont.)

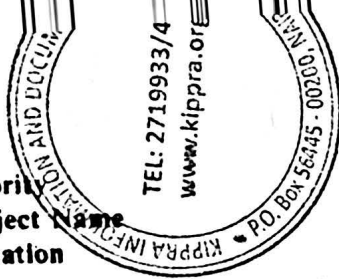
Priority	Project Name	Location	Remarks
7.	Mobile Pastoral Training Unit for Central Division but will cover the whole district		Proposed by Ministry for teaching pastoralists. Proposed to fund/implement: NORAD. The main function of the proposed mobile pastoral training unit will be to demonstrate possible improvements and techniques in production and services that would improve living standards of the pastoralists in the district.

FORESTRY SECTOR

Priority	Project Name	Location	Remarks
1.	Housing	Lodwar	Proposed by Ministerial plan. An on-going project. Proposed to fund/implement: NORAD. Provision of housing facilities for the volunteers and other members of staff.
2.	Forestry Dev. Activities	All Divisions	Ministerial proposal. An on-going project. Proposed to fund/implement: NORAD. This includes personal emoluments for the staff, travelling and operation expenses, stores and utilities.

WATER DEVELOPMENT SECTOR

Priority	Project Name	Location	Remarks
1.	Phase IV of Rural Supply Programme	Katilu Lorugum Kakuma Kerio Village Lokori Wells Lokitaung Namadak	Proposed by DDC in the 1979-83 plan. Proposed to fund/implement: MOWD Supply of water to the population as proposed in Phase IV of Rural Water Programme.



HEALTH SECTOR (Cont.)

Priorities
Project Name
Location

Remarks

- | | |
|--|---|
| 2. T.B. "Village"
Lodwar Hospital | Proposed by DDC as a new project. Proposed to fund/ implement: NORAD. Part of the way of combatting the disease and also short courses on therapy of TB. |
| 3. Staff Housing
Lodwar | A Ministerial on-going project. To provide housing for civil servants. Proposed to fund/implement: MOH. To motivate and make the staff in the district work effectively, adequate housing is a necessity. |
| 4. Recurrent
Budget
District HQs | A Ministerial on-going activity for maintenance and operation expenses. Proposed to fund/implement: MOH. Provision of an engineer and recurrent expenses for maintaining the district hospital, and other additional facilities like ceiling fans. |
| 5. Research and
Programme
Campaigns
All Divisions | A Ministerial proposal for a new project. Proposed to fund/ implement: MOH/Donors. Research into prevalent diseases in the district, like hydatid cyst disease, leprosy, leishmaniasis and others. At the same time, educating the communities on better nutritional habits, sanitation, etc. |
| 6. Equipment and
Buildings:
Katilu Disp.
Namukuse Disp.
Kerio Health Centre
Kapitir Health Centre
Lochanga Matak Disp.
Lokitaung
Sub-Hosp.
Two Dispensaries | A Ministerial proposal for on-going and some new projects. Proposed to fund/implement: NORAD. Purchase equipment for the health centres and also construct buildings to make such centres more operational. |
| 7. Community-Based
Health Care
Lodwar
Distr. Hosp. | A Ministerial proposal for a new project. Proposed to fund/ implement: NORAD. Purchase of additional vehicles and training programme on community-based health workers. |
| 8. MOH Operational
Support Fund
Lodwar | A Ministerial proposal for a new project. Proposed to fund/ implement: NORAD. Miscellaneous Fund to assist in the operations of projects or activities without funds. |
| 9. Extension of
Operating Theatre | A DDC — approved proposal for Lodwar Hospital, to be undertaken by MOH. |

HEALTH SECTOR (Cont.)

Priority	Project Name	Location	Remarks
10.	Intravenous Fluid Supply		DDC — approved project to be funded by NORAD for intravenous fluid production plant in hospital.
11.	Establishment of Nursing School		A DDC — approved project for funding by NORAD.

PUBLIC HEALTH

1.	Nakurio Water Project		Proposed by DDC for an on-going project. Proposed to fund/implement: MOH. For improvement of water quality.
2.	Entomological Station	Lodwar	A Ministerial proposal for a new project. Proposed to fund/implement: MOH. This department should be established to combat against vectors in district, especially mosquitoes in Lodwar.
3.	Housing and Office Space	Various Sub-District Hospitals	A Ministerial proposal for an on-going project. Proposed to fund/implement: MOH. Lessen the problem within members of the staff, so as to make them work effectively.

TRANSPORT AND COMMUNICATIONS SECTOR

Priority	Project Name	Location	Remarks
1.	Kenya-Sudan Road		Completion by MOTC of an important on-going project.
2.	Kapenguria-Lake Turkana Road. Completion and Maintenance Unit		Final bitumenisation of road and subsequent up-keep.
3.	Roads Maintenance Camps	Lokori, Lokichoggio, Kataboi and Kapelo	Proposed by DDC as an on-going project. Proposed to fund/implement: MOTC. To ease the work of maintaining the roads by organising camps on a division basis.
4.	Maintenance Machinery	District HQs	Proposed by DDC as an on-going project. Proposed to fund/implement: MOTC. Provision of two wheel loader, two D4 dozers, six tippers, two flat-bed lorries, three water tankers, one diesel tanker, seven graders, 14 tractors and trailers and one roller.

TRANSPORT AND COMMUNICATIONS SECTOR (Cont.)

Priority	Project Name	Location	Remarks
5.	Personnel	District HQs	Proposed by Ministerial plan as an on-going project. Proposed to fund/implement: MOTC. To be able to implement the first and second priorities, additional 15 members of staff per camp will be required and as well as eight overseas.
6.	Airstrips	Divisional Centres	Proposed by DDC as on-going project. Proposed to fund/implement: MOTC. Gravelling of the earthen airstrips is required to make the facilities useable.
7.	Additional Facilities	Major Roads	Proposed by DDC as an on-going project. Proposed to fund/implement: MOTC. Major roads lack drifts, bridges and culverts, hence making these roads underutilised.

MINISTRY OF CULTURE AND SOCIAL SERVICES

Priority	Project Name	Location	Remarks
1.	Expansion of Lodwar Village Polytechnic	Lodwar Town	An existing self-help project. Proposed to fund/implement: MC&SS. Provide feeding and boarding facilities for trainees. Build a showroom for finished articles and build two workshops and office block and five staff houses.
2.	Building of Family Life Training Centre	Katilu Div. Headquarters	Proposed by MC&SS. To educate mothers on nutrition and child care as malnutrition and child mortality are high. Proposed to fund/implement: MC&SS. Building of offices, staff houses, houses for the mothers and other amenities.
3.	Expansion of Kalokol Village Polytechnic	Kalokol Central Div.	Self-help with sponsorship by Friends Mission. An existing project. Proposed to fund/implement: MC&SS. Provide feeding and boarding facilities to attract more trainees. Build three more workshops and equip them with necessary tools. Build five staff houses.
4.	Building of Lodwar Multi-purpose Training Centre	Lodwar Town	Proposed by DDC. Funds had already been allocated by NORAD to build the project. Proposed to fund/implement: MC&SS. Build a multi-purpose training centre to meet training needs for ministries and non-governmental organisations for short-term courses.

MINISTRY OF CULTURE AND SOCIAL SERVICES (Cont.)

Priority Project Name Location	Remarks
5. Upgrading of Lodwar Stadium Lodwar Town	Proposed by MC&SS. An existing project. There is no existing, proper stadium in the district. Proposed to fund/ implement: MC&SS. Building a medium stadium for athletics, games, and for National days of celebrations.
6. Building of Lodwar Cultural Centre	Proposed by MC&SS. Existing, historical site where the late President Kenyatta was jailed. Proposed to fund/ implement: MC&SS. Building a cultural centre incorporating offices, theatre, adult classes, social hall and other amenities.
7. Upgrading of Loyapat Village Polytechnic Loyapat Katilu Div.	A self-help project with sponsorship of Reformed Church. An existing project. Proposed to fund/implement: MC&SS. Build additional three workshops, dining hall, dormitory, five staff houses and office block.
8. Vocational Rehabilitation Centre Lodwar Town	Proposed by MC&SS. District has more than 700 registered disabled persons with nearest Rehabilitation Centre in Kericho. Proposed to fund/implement: MC&SS. To build various workshops and equip them, office block, dining and boarding facilities and seven staff houses.
9. Building Katilu Village Polytechnic Katilu Location	Proposed by MC&SS. There are four primary schools around this area. Proposed to fund/implement: MC&SS. Building of workshops, offices and staff houses as well as providing tools.
10. Lokichal Children's Home Lokichal	A self-help project with sponsorship of PAG Church. An existing project. Proposed to fund/implement: MC&SS. Building of proper dormitories, dining hall and facilities, and four staff houses.
11. Upgrading of Lokitaung Stadium Lokitaung	Proposed by MC&SS. An upgrading project for only one existing stadium. Proposed to fund/implement: MC&SS. Building a medium stadium for athletics, games and for National days of celebration.
12. Joint Programmes with MOH/MOE All Divisions	Proposed by MOE/MOH. A new project. Proposed to fund/ implement: MOE/MOH. Educate the public on the importance of literacy, sanitation and nutrition and participation in development (harambee spirit).

ANNEX

**TURKANA DISTRICT
ANNUAL WORK PROGRAMMES
1984-1988**

Annex

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- I. Development Programmes, 1983/84
- II. Two Year Rolling Plan, 1983/84-1984/85
- III. Detailed Implementation Plans, 1983/84

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DEVELOPMENT PROGRAMMES
1983/84

SECTION ONE: ANNUAL WORK PROGRAMME, 1983/84

HEAD/SUB-HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOPMENT ESTIMATES K£
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OFFICE OF THE PRESIDENT

*000/400	Construction of Staff Houses	15,000
092/850	Houses (Residential)	
410	Lokitaung Police Station	50,000

MINISTRY OF FINANCE AND PLANNING

*228/000	Turkana ASAL Programme	Transport Operating Expenses	19,500
100			
228/000		Travelling and Accommodation	14,400
110			
228/000		Posts and Telecommunications	200
120			
228/000		Consultants	50,000
181			
228/000		Miscellaneous other charges	1,500
190			
228/000		Maintenance of Stations	71,100
260			
228/000		Operational Reserve Fund	30,000
340			

MINISTRY OF WATER DEVELOPMENT

*602/007	RWS	Planning and Design (Namadak)	1,000
181			
*602/007		Construction of Water Supply	50,000
425			
*602/008		Construction of Water Supply (Oarengak)	
425			
392/000		Planning and Design (Lodwar)	1,000
181			
*392/000		Construction of Water Supply	10
425			
*392/001	'Self-Help Water Supplies	Construction of Water Supply (Lokori)	10,000
425			
*392/002		Construction of Water Supply (Nakwamekwi)	10,000
425			
*392/003		Construction of Water Supply (Kapendo)	10,000
425			

SECTION ONE: DEVELOPMENT PROGRAMMES 1983/84

HEAD/SUB-HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOPMENT ESTIMATES K£
MINISTRY OF WATER DEVELOPMENT (CONT.)			
602/001 181	Rural Water Supply III	Planning and Design (Katilu)	500
*602/001 425		Construction of Water Supply	50,000
602/003 181		Planning and Design (Kerio)	1,000
*602/003 425	RWS III	Construction of Water Supply	20,000
602/004 181		Planning and Design (Lorugum)	27,000
*602/004 425	RWS III	Construction of Water Supply	10
602/005 181		Planning and Design (Lokitaung)	10,000
*602/005 425	RWS III	Construction of Water Supply	10,000
602/006 181		Planning and Design (Kakuma)	1,000
*602/006 425	RWS III	Construction of Water Supply	50,000
CULTURE AND SOCIAL SERVICES			
*902/000 408	Turkana ASAL	Assistance to Village Polytechnics and Other Vocational Training Institutions	10
MINISTRY OF CO-OPERATIVE DEVELOPMENT			
*706/000 347	Lake Turkana Fisheries	Fish Processing at Lake Turkana Fisheries Plant	10
*706/000 359	ASAL Development Programme	Assistance to the Co-operative Societies	33,000
709/700 433	General Administration and planning	Offices and staff quarters	1,000

*Project ongoing into 1984-85 financial year

SECTION ONE: DEVELOPMENT PROGRAMMES 1983/84

HEAD/SUB- HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOP- MENT ESTIMATES K£
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MINISTRY OF BASIC EDUCATION

*844/850 408	Primary Education Support Unit	Assistance to Primary Schools	187,500
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REGIONAL DEVELOPMENT

*261/000 300	Rehabilitation Programme for Turkana	Rehabilitation of drought destitute areas.	562,515
*215/000 302	Omo Delta Irrigation Schemes	Food production	200,000
*215/000 305	Malmate/Amolem Crop Development	Food production	300,000
*215/000 307	Turkwell Dam and Hydro-Electricity Project	Generation of Hydro-power	10

MINISTRY OF HIGHER EDUCATION

*806/850 400	Government-aided Secondary Schools	Buildings	6,078
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TRANSPORT AND COMMUNICATION

*445/700 438	Lodwar-Sudan Border Stage I	Trunk Road	1,350,000
445/700 439	Kakuma-Lokichogio	Trunk road	10
445/700 436	Lodwar-Kakuma	Primary road	10
*445/700 431	Kapenguria Marich Pass (A1)	Trunk road	800,000
446/850 441		Airstrip Lodwar	40,000

*Project ongoing into 1984-85 financial year

SECTION ONE: DEVELOPMENT PROGRAMMES 1983/84

HEAD/SUB-HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOPMENT ESTIMATES K£
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TRANSPORT AND COMMUNICATION Cont.)

446/850	Airstrips	Airstrip at Ferguson's Gulf	250,000
442			
446/850		Airstrip at Lokitaung	10
443			
446/850		Airstrip at Oropoi	10
444			
445/850		Airstrip at Lokichoggio	70,000
445			

TOURISM AND WILDLIFE

555/720	South Turkana National Reserve	Purchase of Plant and Equipment	4,000
220			
555/720		Construction of Buildings	4,000
410			
555/720		Construction of Roads	3,000
430			

LIVESTOCK DEVELOPMENT

*291/020		Transport Operating Expenses	20,000
100			
291/020	Livestock	Travelling and Accommodation Expenses	10,000
110			
291/020	Marketing	Miscellaneous Other charges	10,000
190			
291/020	Project	Maintenance of Plant and Equipment	5,000
250			
291/020		Fees for Hire of Transport	20,000
650			

*Project ongoing into 1984-85 financial year

SECTION ONE: DEVELOPMENT PROGRAMMES 1983/84

HEAD/SUB- HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOP- MENT ESTIMATES K£
MINISTRY OF AGRICULTURE			
*250/010		Travelling and accom- modation expenses	6,000
110			
250/010		Miscellaneous other charges	1,000
190			
250/010		Purchase of plant and equipment	10
220	The Turkana		
250/010	Region Irrigation	Maintenance of plant and equipment	65,000
250	Cluster		
250/010		Maintenance of stations	30,000
260			
250/010		Minor works	10,000
250/010		Construction of buildings	—
400			
250/010		Construction of water supply	11,500
420			

MINISTRY OF HEALTH

335/851		Equipment and building	10
228			
335/851	Katilu Health	" " "	70,000
411	Centre		
335/852	Namukuse Health	Vehicles, equipment, buildings	10
211	Centre	" "	2,000
335/852		"	25,000
411			
355/853			
211	Kerio Health	Vehicles, equipment, buildings	10
335/853	Centre		
228			
335/853			
411			
335/854	Kaputir Health	Buildings	10,000
411	Centre		
335/855	Lochangamatak	Buildings	10,000
411	Health Centre		

*Project ongoing into 1984-85 financial year

SECTION ONE: DEVELOPMENT PROGRAMMES 1983/84

HEAD/SUB- HEAD ITEM	PROJECT NAME	ANNUAL TARGET DESCRIPTION	DEVELOP MENT ESTIMATES K:
ENVIRONMENT AND NATURAL RESOURCES			
* 738/002 000		Personal Emoluments	47,500
* 738/002 100	Transport Operating	Transport Operating Expenses	3,250
* 738/002 110		Travelling and Accommodation Expenses	2,500
* 738/002 120	ASAL Forest	Postal & Telecommunication Expenses	—
* 738/002 150	Development	Purchase of Stores	8,000
* 738/002 192	Scheme	Training of Personnel	500
* 738/002 220		Purchase of Plant and Equipment	—
* 738/002 401		Staff Housing	—
* 738/002 402		Ancillary Buildings	8,500
* 738/002 403		Water Suppliers	32,500

TWO YEAR ROLLING PLAN, 1983/84 - 1984/85

SECTION II

TWO YEAR ROLLING PLAN
1983/84-1984/85

EMPLOYEE DEVELOPMENT

<p>Employee Development Programs</p>	<p>Employee Development Programs and Activities to be conducted during the period</p>	<p>To increase productivity of our work units, with emphasis on the development of new and best products.</p>
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RESEARCH

<p>Research Programs and Activities</p>	<p>Research Programs and Activities to be conducted during the period</p>	<p>To improve the quality of our work units, the work of our Task and Kapite.</p>
<p>Research Programs and Activities</p>	<p>Research or intensive services in the new and best products and activities</p>	<p>to improve the quality of the work of the personnel were done.</p>

ANNEX SECTION TWO: ROLLING PLAN, 1983/84 — 1984/85

Sector or Ministry Project Name	Project Name Target/Description	Target/Description Comments
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OFFICE OF THE PRESIDENT

Construction of Residential Houses	To provide staff quarters	This will ease the housing problem current Lodwar and other Divisions
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FINANCE & PLANNING

Turkana Rural Development Programme (ASAL)	Provision for vehicle operations, purchase of vehicles, and other operational expenses.	Continuous
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LIVESTOCK DEVELOPMENT

Livestock Marketing Project	Expenses to maintain the stations and also CCPP control and investigations.	To improve on the quality of the stock units, with aim of increasing the commercial off-take and meat production.
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AGRICULTURE

Turkana Regional Irrigation Cluster	Developing a more reliable food system	To continue the irrigation schemes of Katilu, Amolem, Turkwell, Juluk, and Kaputir.
South Turkana Agricultural Extension and Support Unit	Provision of extension services in the irrigation cluster in mechanisation, use of water systems and other support services	Continue in the same way the FAO technical personnel were doing

ANNEX TWO: ROLLING PLAN, 1983/84 — 1984/85

Sector or Ministry Project Name	Project Name Target/Description	Target/Description Comments
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FORESTRY

ASAL Forest Development Scheme	Provision of operation and maintenance expenses of the station at the district, to enable the GOK Officers and Technical Assistance Team to carry out rural afforestation programme.	Continuous
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HEALTH

Lokitaung Sub-District Hospital	To equip the sub-district hospital to that standard which will enable it to serve the population from that division.	The extension programme starts in 1984/85
Kaputir and Lochangamatak Dispensaries	Putting up buildings and installing various equipment	Continuous
Community Based Health Care	Purchase of additional vehicles and expenses for a training programme for health workers on community based health care	Continuous
MOH Operational Support	A fund to be available to the district hospital for emergency cases or activities not allocated funds	This fund should start in 1984/85

CO-OPERATIVE DEVELOPMENT

Lake Turkana Fisheries	Support to the processing plant of the co-operative society	Continuous
ASAL Development Programme	Assistance to the co-operative movement at the irrigation schemes	Continuous

ANNEX TWO: ROLLING PLAN, 1983/84 — 1984/85

Sector or Ministry Project Name	Project Name Target/Description	Target/Description Comments
REGIONAL DEVELOPMENT		
Rehabilitation Programme for Turkana	Rehabilitating the drought victims by settling them and providing some of their basic needs like water supplies, food, etc.	Continuous
Kerio Valley Development Authority	Development of irrigation schemes at Weiwei, River Omo Delta, and the Turkwell	Continuous
WATER DEVELOPMENT		
Rural Supplies at Katilu, Kerio fishing Centre, Lorugum, Lokitaung, Kakuma Namadak and Oarengak Stations (Rural Water Supply Phase IV)	This will entail investigations, planning, and design and construction works, such that water points nearest to population settlement are installed	Some of these water supplies have started.
Self-help Water Supplies at Lodwar, Lokori, Kapedo and Nakwanekui Stations	Investigations, planning, design and construction works of reliable water points nearest to the settlements.	Some of these projects have started already.
Shallow Wells under TRP	Provision of water points at the new settlement areas initiated by Rehabilitation Programme for Turkana	Continuous
TRANSPORT AND COMMUNICATIONS		
Lodwar-Sudan Border Stage and Kapenguria Marich Pass (A1)	Trunk Road joining the district with other regions in the country	Continuous
Roads Maintenance and Additional Facilities	To maintain the already existing roads and also providing additional facilities like bridges, culverts etc.	Continuous

ANNEX SECTION TWO: ROLLING PLAN, 1983/84 — 1984/85

Sector or Ministry Project Name	Project Name Target/Description	Target/Description Comments
MINISTRY OF BASIC EDUCATION		
Primary Education Support Unit	Assistance to primary schools in the district	Continuous
MINISTRY OF HIGHER EDUCATION		
Government-aided Secondary Schools	Building for secondary schools	Continuous
CULTURE & SOCIAL SERVICES		
Lodwar Village Polytechnic, Kalokol Village Polytechnic	Expansion of the institution, to be able to accommodate more students	Continuous
Lodwar Stadium	Upgrading the present facility up to a medium stadium for sports, games and other national celebrations.	
Support to Diocese's Adult Literacy Prog.	Proposed GoK to absorb 10 Diocese teachers each year; GoK to pay for workshops (about KShs. 50,000); as well as GoK technical assistance to programme on periodic basis.	
Integrated GoK Adult Literacy Prog.	Construction of offices both at District and Divisional headquarters (17-room building at HQ and 4-room bldgs in Div.); employment of sufficient support and teaching staff (150 full-time teachers and 300 part-time); provision of supplies and equipment.	

SECTION III
DETAILED IMPLEMENTATION PLANS
1983/84

District: Turkana _____

Fiscal Year :1983/84 _____

Project: Turkana ASAL Programme _____

Vote Number: D6/228 _____

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1. Work Programme	Work programmes for all sectors	TAs & Heads	3 months						█	█					
2. Forward Estimates	Forward budget for all sectors	TAs & Dept.	3 months				█	█	█						
3. Consultative Meeting		Heads Nairobi, HQs	1 month							█					
4. Studies & Consultancies	Identifying areas which need studies	TRP/ASAL Committee	12 months	█	█	█	█	█	█	█	█	█	█	█	█
5. Administration of the programme	Day to day administration	P/Co-ordinator	12 months	█	█	█	█	█	█	█	█	█	█	█	█
6. Review of the programme.	Evaluation of the activities of the programme	P/Co-ordinator Nairobi HQs.	1 month						█						

District: Turkana _____

Fiscal Year: 1983/84 _____

Project: Turkana ASAL Livestock Programme _____

Vote Number: D9/291/020/ _____

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	Month																		
				July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June							
1. Centres for buying livestock	Identification of these centres & equipping them	TA & DLDO	3 mths																			
2. Transport for livestock bought	Transport arrangements	TA, Co-operative Society	12 mths																			
3. Daily maintenance of livestock programme	Co-ordination of the programme	TA & DLDO	12 mths																			

District: Turkana

Fiscal Year: 1983/84

Project: District Headquarters Water Supply

Vote Number: D20

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	Month														
				Jan	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June			
1. Design & Planning	Investigations and Design of the Project	Provincial Water Engineer	6 months															
		Nakuru & Eldoret DWO	2 months															
2. Construction	Tendering or actual activities	Turkana	18 months															

District: Turkana _____

Fiscal Year: 1983/84 _____

Project: Kakuma Water Project _____

Vote Number: D20/ _____

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	Month														
				July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June			
1. Planning & Design	Investigations & design	Chief Engineer	3 mths															
		PWE: Engineer-in-charge Eldoret	2 mths															
2. Construction		DWO Turkana	12 mths															

District: Turkana

Fiscal Year: 1983/84

Project: Katilu Water Project

Vote Number: D20

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1. Design and planning	Investigation and design	Chief Engineer PWE	3 mths												
			1 mth												
2. Construction	Tender	DWO	24 mths												
3. Construction of the water supply	Contract to a firm of the	DWO	6 months												
4. Planning & Design	Planning and design	DWO	3 months												
Implementation activities	Input Requirements	Responsible Individual(s)	Time Required												
Project: Katilu Water Supply															

District: Turkana _____

Fiscal Year: 1983/84 _____

Project: Lodwar Water Supply _____

Vote Number: D20/894/850/181,425 _____

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	Month																		
				Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.							
1. Planning & Design	Identification of sites and planning and designing	MOWD	3 months																			
2. Construction of the water supply	Contract to a firm or use GOK officers	Contractor or MOWD	9 months																			

District: Turkana

Fiscal Year: 1983/84

Project: Kalokol Water Supply

Vote Number: D20/894/851/181,425

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	July		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June	
1. Construction	Tendering or GOK officials	MOWD	9 mths																								



District: Turkana _____

Fiscal Year: 1983/84 _____

Project: ASAL Forest Dev. Scheme _____

Vote Number: D21/738/002/000-403 _____

Implementation Activities	Input Requirements	Responsible Individual(s)	Time Required	Month																		
				July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June							
1. Buildings	Construction of houses	ASAL Programme	12 months																			
2. Water Supplies	Construction of Water Supplies	ASAL Programme	12 months																			
3. General Admin. Support	Co-ordination of Forest activities	Core Team	12 months																			
4. Consultancies	Further studies	Core Team	6 months																			