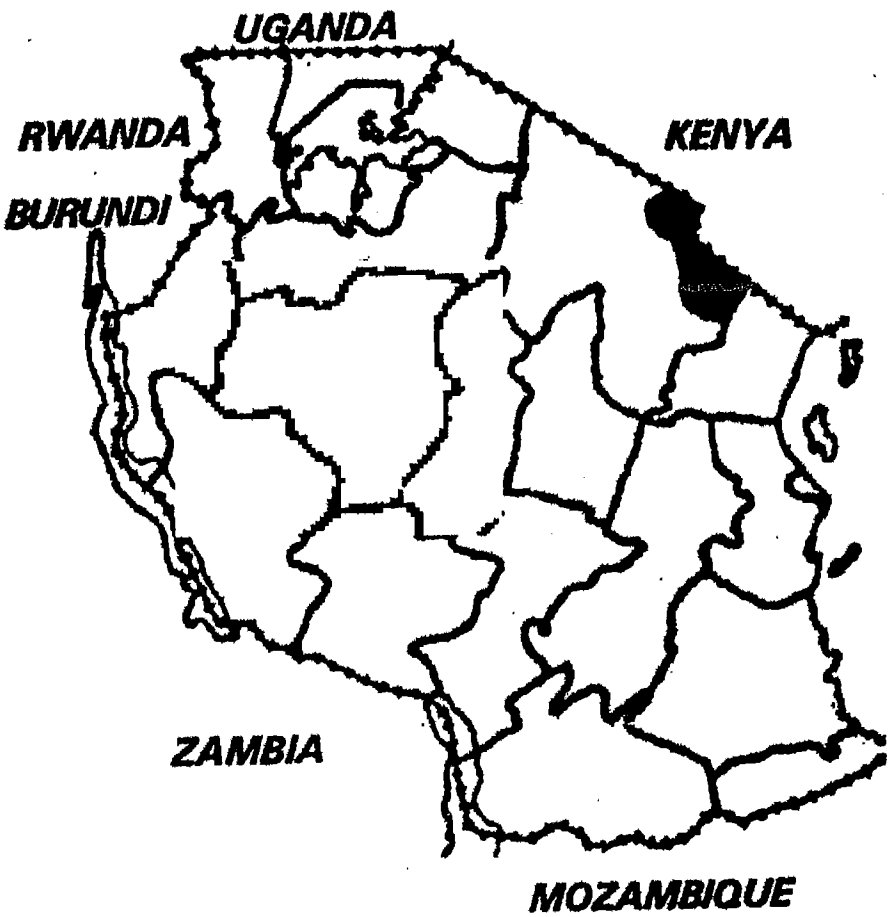
THE UNITED REPUBLIC OF TANZANIA

KILIMANJARO REGION
SOCIO-ECONOMIC PROFILE



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FOREWORD

1. *As we approach the 21st Century the problems facing rural areas in developing countries like Tanzania are numerous and formidable. Social and Economic services are deteriorating and proving to be unsustainable; school enrollment rates are declining; food situation is precarious; infant and maternal mortality rates continue to be high; unemployment is on the rise triggering off mass migration of youth from the rural areas into already overcrowded urban centres; in Kilimanjaro Region, for example, land pressure is escalating and deforestation is going on at an alarming rate.*

2. *This situation has arisen because of many factors including ill - prepared rural development programmes and weak monitoring and supervision of the implementation of development programmes and sectoral strategies. The observed shortcomings in the policy formulation, project identification, design, and implementation in the developing countries is in turn attributed to lack of reliable and adequate data and information on the rural development process.*

3. *The publication of Regional Socio-economic Profiles series by the Planning Commission in collaboration with Regional Commissioner's offices should be viewed as a fruitful attempt towards finding solutions to the existing problem of data and information gap.*

4. *The Regional Profile series cover a wide range of data and information on geography, population, social economic*

parameters, social services, economic infrastructure and productive sectors. The publications so far have proved to be of high demand and a vital source of information to many policy makers, planners, researchers, donors and functional managers.

The Planning Commission has found it a worthwhile effort to extend the exercise to cover even more regions. Readers are invited to make suggestions and constructive criticisms which can assist in improving the quality and effectiveness of future Profiles.

5. *I would like to take this opportunity to acknowledge with thanks once again the financial support of the Royal Norwegian Embassy which facilitated the preparation of the Kilimanjaro Region Socio-Economic Profile. I would also like to thank both the Planning Commission and Kilimanjaro Regional Planning Staff who put a lot of effort into ensuring the successful completion of this task.*

Nassoro W. Malocho (MP)
MINISTER OF STATE
PLANNING AND PARASTATAL SECTOR REFORM

December, 1998

SECTION I

1.0 LAND PEOPLE AND CLIMATE:

1.1 Geographical Location:

Kilimanjaro region as its name reflects, the famous snow covered Mount Kilimanjaro is within this region. The mountain has two peaks Mawenzi and Kibo and its highest peak Kibo, towers as high as 5,895 meters above sea level snowcapped throughout the year. Kilimanjaro is the highest mountain - Africa second to Mount Everest. Mount Kilimanjaro and the Pare mountains (2,000 - 2,500m.) from the backbone of the region, running through the middle of it in a lengthwise direction.

Kilimanjaro region is located in the north eastern part of Tanzania Mainland. It lies south of the Equater between latitudes $2^0\ 25^1$ and $4^0\ 15^1$. Longitudinally the region is between $36^0\ 25^1\ 30^{11}$ and $38^0\ 10^1\ 45^{11}$ east of Greenwich. The region has a common border with Kenya in the north, to the southeast it shares border with Tanga region; to the south and west the region borders with Arusha region.

1.2 Land Area and Administrative Units:

Kilimanjaro region covers an areas of 13,209 sq km or 1.4 percent of the area of the entire Tanzania Mainland. Sizewise the region is one of the smallest regions in Tanzania.

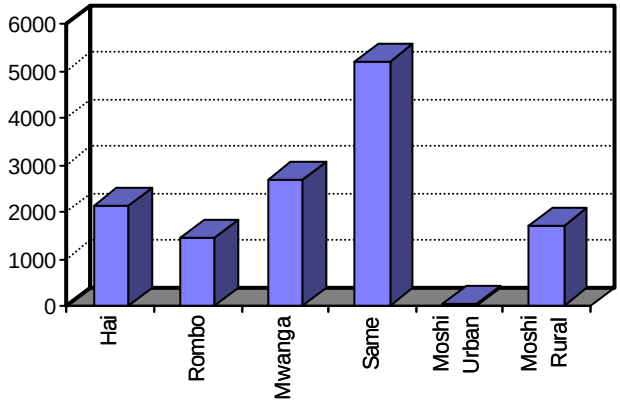
Kilimanjaro region is divided into six districts namely: Rombo, Mwanga, Same, Hai, Moshi Rural and Moshi Municipality. The districts are further divided into 26 divisions, 114 wards and 402 villages as highlighted in table I.

TABLE I: LAND AREA AND ADMINISTRATIVE UNITS KILIMANJARO REGION

District	Area sq km	Administrative Units		
		Divisions	Wards	Villages
Hai	2,112	4	11	65
Rombo	1,442	5	20	57
Mwanga	2,698	5	16	58
Same	5,186	6	24	72
Moshi Urban	58	2	16	-
Moshi Rural	1,713	4	27	150
Total	13,209	26	114	402

Source: Regional Commissioner's Office, Kilimanjaro

Fig. 1: Land Area and Administrative Units Kilimanjaro Region



1.3 Ethnic Groups:

There are two main ethnic groups in Kilimanjaro region. These are Chagga, who are the majority, and Pare. There are other small ethnic groups who reside in the region, like Wakahe and Wakwavi. Within these two main ethnic groups there are sub-ethnic groups sometimes identified by their different dialects. For example, Wagweno among the Pare who speak Kipare and Kigweno reside in the northen part of Pare. The different dialects among the Chagga which are identified according to the geographical identity. For example, **Kichagga Kimachame** may be differentiated From **Kichagga Kibosho** through their way of speaking and other linguistic characteristics. However, Kiswahili is the main language for communication among the various groups. Socially there is little separation between the two main tribes and inter marriage is a common phenomenon. Invariably both tribes are energetic, industrious, thrifty and enterprising.

1.4 Early Contacts with Europeans:

The region's contact with Europeans could be traced back to 1840's with the advent of Missionaries. In 1848 the two Missionaries. Rebman and Krapf visited the area and thus became the first Europeans to see Mount Kilimanjaro. The arrival of Missionaries was followed by the establishment of trade relationship in 1880's. In May 1985, the Germans established a protectorate over Kilimanjaro, but concerned as they were with consolidating their hold on the coast, they did little to quell the territorial feuds in the region. The Germans enforced a hash rule in Kilimanjaro which resulted in clashes with the Wachagga. At first the Germans were defeated, but in 1893 Mangi, the leader of

Wachagga was defeated and the Germans took over, but again in 1916 the Germans were ousted when the British troops occupied Kilimanjaro.

1.5 Population Size, Growth and Density:

Kilimanjaro region had a population of 1,108,699 in 1988 (Population Census 1988) with an average annual growth rate of 2.1 percent slightly lower than the national rate of 2.8 percent. This regional population represents 4.9 percent of the total Tanzania Mainland population of 22,533,758 (Population Census 1988, National Profile Analytical report). The region's population has been increasing at varied rates between the 1967- 1978 and 1978-1988 census periods. It increased by absolute numbers of 249,665 from 1967 to 1978 and 201,631 people from 1978 to 1988 or 38.2 and 22.3 percent increases respectively.

It is reported in the Census reports of 1978 and 1988 that the region's population had grown at 2.9 percent annually between 1967 and 1978 and at 2.1 percent annually between 1978 and 1988. Table II shows the region's population development by district from 1967-1988, and the population projections for 1995, 1998 and the year 2000. Based on the 1978/1988 regional annual growth rate of 2.1%, the region's population is estimated to be 1,509,750 by the year 2000. Population projections by district for 1995, 1998 and 2000 are further computed and indicated in the table just mentioned.

In the 1988 Census Moshi Urban population experienced a very rapid growth. For instance between 1978 - 1988 the town

population rose, from 52,046 people in 1978 census to 96,838 people in 1988 at an average annual growth rate of 6.2%. The rapid population rate was also noted in Mwanga districts, where the population of the district grew from 24,563 people in 1978 to 98,260 people in 1988, reflecting an average growth rate of 4.7 percent.

TABLE II: POPULATION DISTRIBUTION BY DISTRICT AND PROJECTIONS KILIMANJARO REGION, 1967-2000

District	Population Census Results and Growth rates				Population Projections		
	1967 Census	1978 Census	1988 Census	Annual Growth Rates 1978/1988	1995	1998	2000
Rombo	114,311	157,715	200,859	2.4%	237,603	255,342	267,897
Mwanga	-	74,563	98,260	4.7%	136,540	157,215	172,711
Same	149,635	133,628	170,053	1.4%	187,562	195,608	201,162
Moshi (R)	361,914	316,920	342,553	1.9%	391,281	414,232	430,276
Hai	-	172,444	200,136	1.3%	219,203	227,921	233,924
Moshi (U)	26,864	52,046	96,838	6.2%	149,462	180,015	203,780
Total	652,772	902,437	1,108,699	2.1%	1,321,651	1,430,333	1,509,750

Source: 1988 Population Census, Kilimanjaro Regional Profile
1988 Population Census, National Profile, The Analytical

Fig. 2: Population Distribution by District and Sex Kilimanjaro Region, 1978, 1988 and 1995 (Estimates)

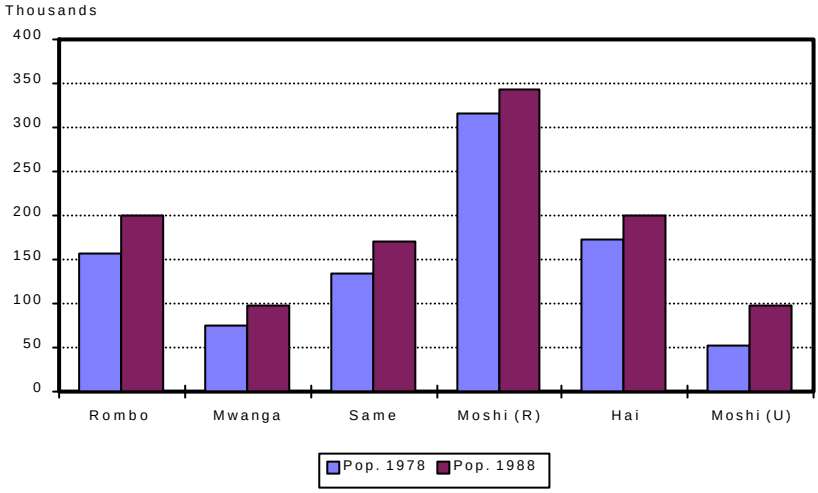


Table II shows that with a land area of 13,209 sq. km the population density of Kilimanjaro has increased from 68 person per sq. km. in 1978 to 84 persons per sq. km. in 1988. By 1995 the population density was estimated at 100 persons per sq. km. Although the region could be described as one of the densely populated regions I the country it is worth noting that the population is unevenly distributed. The highlands are the most populated areas with an average of 600 persons per sq. km. Likewise the intermediate sone, which lies between altitude 900-1100 meters above sea level, has a high population density of 250 people per sq.km at district level, Rombo and Moshi Rural districts are the most populated with 160 and 256 people per sq.km respectively (Estimates of 1995). According to population projections of 1998 and the year 2000 population densities are estimated to be 172 and 271 (for 1998; 181 and 281 people/sq.km. in the year 2000 for the two most densely rural

districts in the region respectively (Table III) According to table IV it is observed that Kilimanjaro region is the third densely populated region with 84 people/sq.km. this is after Dar es Salaam and Mwanza regions (1988 population census). The population distribution pattern in the region is by and large influenced by land fertility and demotic conditions. This explains the reason for concentration of the population in the highlands.

TABLE III: POPULATION DISTRIBUTION BY DISTRICT AND DISTRIBUTION BY DISTRICT KILIMANJARO REGION, 1988 - 2000

District	Land Area sq.km.	Census Population 1988	Population Density 1988	Population Projection 1995	Population Density 1995	Population Projection 1998	Population Density 1998	Population Projection 200	Population Density 2000
Rombo	1,482	200,859	136	237,603	160	255,342	172	267,897	181
Mwanga	2,170	98,260	45	136,540	63	157,215	72	172,711	80
Same	5,630	170,053	30	187,562	33	195,608	35	201,162	36
Moshi Rural	1,529	342,553	224	391,281	256	414,232	271	430,276	281
Hai	2,369	200,136	84	219,203	93	227,921	96	233,924	99
Moshi Urban	29	96,838	3,339	149,462	5154	180,015	6,209	203,780	7,027
Total	13,209	1,108,699	84	1,321,651	100	1,430,333	108	1,509,750	114

Source: 1. Compiled data: Population Census, 1988

Fig. 3a: Population Census Results by District, Kilimanjaro Region, 1988

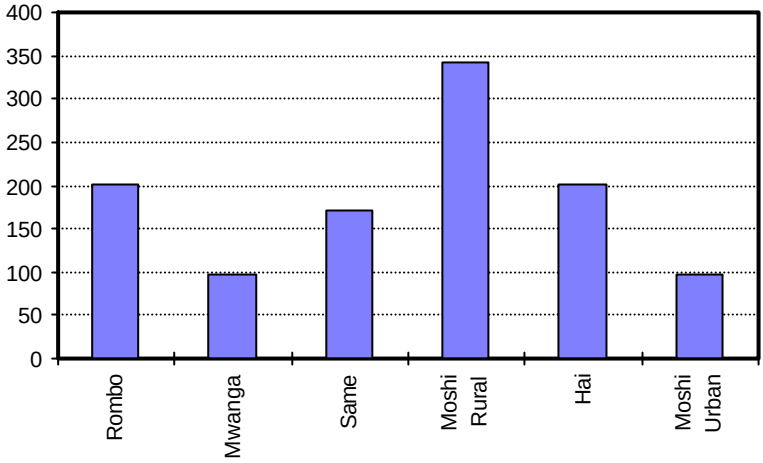


Fig. 3b: Population Projections (thousands) by district for the years of 1995, 1998 and 2000

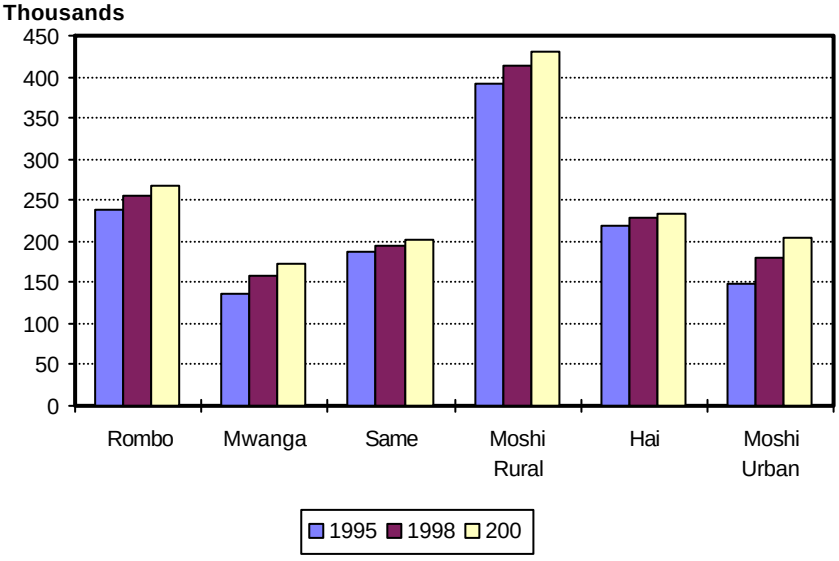


TABLE:IV: TANZANIA MAINLAND POPULATION AND POPULATION DENSITY AND PERCENT INCREASE (1978-1988) BY REGIONS:

Region	1988 Census	Densities Per sq.km.		Percent Increase 1978-1988
		1978 Census	1988 Census	
Arusha	1,351,675	12.4	16.2	29
Mwanza	1,878,271	71.8	93.5	31
Dodoma	1,237,819	23.5	30.0	28
Kilimanjaro	1,108,699	68.1	83.7	22
Tanga	1,283,636	38.9	48.1	23
Morogoro	1,222,737	13.3	17.3	30
Coast	638,015	15.9	19.6	24
Dar es Salaam	1,360,850	553.2	976.9	77
Lindi	646,550	6.2	9.8	53
Shinyanga	1,763,960	26.1	34.9	34
Mtwara	889,494	46.2	53.2	15
Ruvuma	783,327	8.9	12.3	38
Iringa	1,208,914	16.2	21.3	31
Mbeya	1,476,199	12.9	24.5	37
Singida	791,814	11.3	16.0	45
Tabora	1,036,293	10.7	13.6	27
Rukwa	694,974	8.0	10.1	23
Kigoma	853,263	17.5	23.1	32
Kagera	1,326,183	35.5	46.6	32
Mara	970,942	33.2	43.7	49

Total	23,170,993	19.8	26.2	32

Source: 1988 Population Census, National Profile, The Analytical Report

Table V(a) shows the regional population by district, sex and age groups in 1988. In all the region's districts the female population exceeded that of the males. The same trend existed among most age groups. Table V(b) shows the highest proportion of the population aged 0-14 years, which constituted 46.4 percent, which is above the national average of 45.7 percent (Population Census, 1988 National Profile - The Analytical Report). The 15-44 years age group which was the most economically active group constituted 37.2 percent. Those of the age group of 45-64 years formed 9.7 percent. Hence categorically the productive age group in all, formed 46.9 percent of the total regional population in 1988.

The dependants i.e. the children and those aged (65+years of age) formed 52.3 percent of the region's total population. The ratio of dependants to the economically productive age group was 111.4 which meant that there were 111.4 dependants for every 100 workers. This ratio though alarmingly favoured the dependants, was not a good sign for a country like Tanzania whose resources are still much undeveloped. This situation created much strain on limited resources. This too implied that in 1988 the region's 520,061 productive population had to feed and care for 579,536 people.

TABLE V(a): POPULATION DISTRIBUTION BY SEX AND AGE GROUPS BY DISTRICT, KILIMANJARO REGION 1988

District	Sex	Age Groups in Years					
		0-14	15-44	45-64	65+	Not stated	Total
Moshi Rural	Male	79,156	53,160	16,490	11,253	-	160,494
	Female	79,709	71,956	18,374	12,455	-	182,494
	Total	158,865	125,116	34,864	23,708	-	342,553
Hai	Male	45,654	34,193	10,481	5,677	2,687	98,692
	Female	44,542	40,686	10,780	5,436	-	101,444
	Total	90,196	74,879	21,261	11,113	2,687	200,136
Rombo	Male	50,125	28,977	8,353	6,596	28	94,079
	Female	50,377	39,170	9,696	7,537	-	106,780
	Total	100,502	68,147	18,049	14,133	28	200,859
Mwanga	Male	23,371	14,233	4,366	2,270	2,011	46,251
	Female	22,745	18,045	4,874	2,585	3,760	52,009
	Total	46,116	32,278	9,240	4,855	5,771	98,260
Same	Male	41,093	27,791	8,445	4,648	380	82,357
	Female	40,493	33,194	9,093	4,916	-	87,696
	Total	81,586	60,985	17,538	9,564	380	170,053
Moshi Urban	Male	18,035	25,427	3,782	1,055	236	48,535
	Female	18,769	25,900	2,595	1,039	-	48,303
	Total	36,804	51,327	6,377	2,094	236	96,838
Regional total	Male	254,434	183,781	51,917	31,499	5,342	529,973
	Female	256,635	228,951	55,412	33,968	3,760	578,726
	Total	514,069	412,732	107,329	65,467	9,102	1,108,699

Source: Population Census 1988, Kilimanjaro Regional Profile

Fig. 3c: Total Population Distribution (Thousands) by District and Age Group, Kilimanjaro Region, 1988

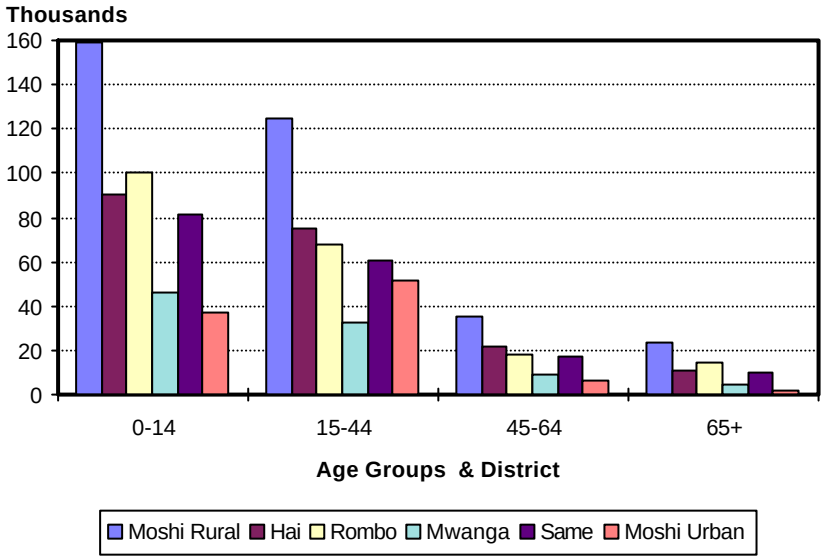


TABLE V(a): TANZANIA DISTRIBUTION BY BROAD AGE GROUPS KILIMANJARO REGION 1988

Age Group	Population	%
0-14 Years	514,069	46.4
15-44 Years	412,732	37.2
45-64 Years	107,329	9.7
65+ years	65,467	5.9
Not Stated	9,102	0.8
Total	1,108,699	100.0

Source Population Census 1988 Kilimanjaro Regional Profile

Fig. 3d: Tanzania Distribution by Broad Age Groups Kilimanjaro Region 1988

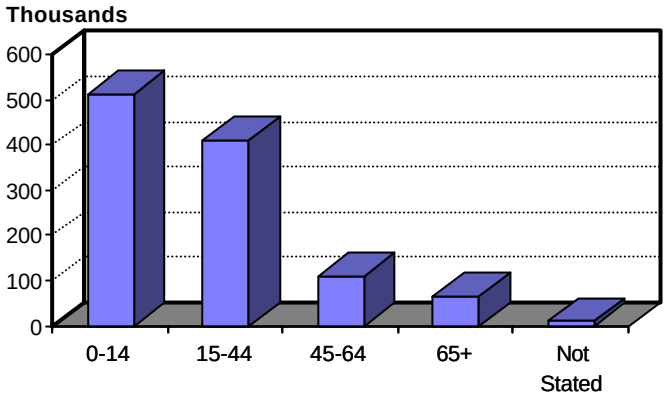


Table V(c) shows distribution of the 1988 population census between the sexes in Kilimanjaro region. The regional sex ratio stood at 91.6. This meant that for every 100 females there were 91.6 males. There were a lot more women compared to men in the region. Moshi Urban district was the exception where there was an aqual proportion between the two sexes. Moshi Rural had the least proportion of males to females i.e. 87.7 males for every 100 females.

TABLE V(c): POPULATION DISTRIBUTION BY SEX AND DISTRICT, KILIMANJARO REGION, 1998

District	Male	Female	Total	Sex Ratio
Moshi Rural	160,059	182,494	342,553	87.7
Hai	98,692	101,444	200,136	97.3
Rombo	94,079	106,780	200,859	88.1
Mwanga	46,251	52,009	98,260	88.9
Same	82,357	87,696	170,053	93.9
Moshi Urban	48,535	48,303	96,838	10.5
Total	529,973	578,726	1,108,699	91.6

Source: Population Census 1988, Kilimanjaro Regional Profile.

Kilimanjaro region had 205,972 households in 1988 with an average household size of 5.3 people. Apparently there was virtually no significant difference in household sizes among the rural region's districts, this ranged between 5.3-5.6 people per household. Moshi urban district had the lowest household size of 4.3 (see table V(d). In respect of household numbers, Moshi rural district had the highest with 63,540 households while Mwanga district had the least number of 16,486.

Fig. 3e: Population Distribution by Sex and District, Kilimanjaro Region, 1998

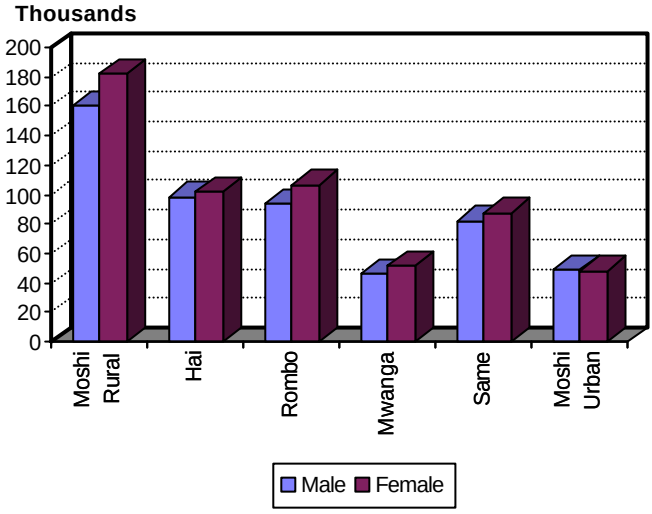


TABLE V(d): POPULATION BY SEX AND DISTRICT NUMBER OF HOUSEHOLDS AND AVERAGE HOUSEHOLD SIZE KILIMANJARO REGION, 1988

District	Population			Number of Households	Average Household size	Sex-Ratio
	Male	Female	Total			
Moshi Rural	160,059	182,494	342,553	63,540	5.4	87.6
Hai	98,692	101,444	200,136	37,318	5.3	94.6
Rombo	94,079	106,780	200,859	35,648	5.6	88.1
Mwanga	46,251	52,009	98,260	16,486	5.6	91.7
Same	82,357	87,696	170,053	30,337	5.6	93.5
Moshi Urban	48,535	48,303	96,838	22,643	4.3	100.5
Total	529,973	58,726	1,108,699	205,972	5.3	91.2

Source: Population Census 1988, Kilimanjaro Regional Profile

Table V(e) shows the region's population distribution by district Urban/Rural orientation in 1988. There were more residents in rural areas than in urban areas, accounting for 85.5 percent of the region's population. There were more households in rural areas than in the urban; 82.2% of these were in the former areas. One interesting thing to note was the bigger household size in rural areas than in urban areas which averaged 5.5 people while in urban areas the size averaged 4.3 people. The reflected bigger household sizes in rural areas than in urban might be due to more tendency in the rural areas to embrace firmly the family ties and values while economically conscious.

TABLE V(e): POPULATION, HOUSEHOLD SIZE BY DISTRICT AND BY RURAL/URBAN ORIENTATION, KILIMANJARO REGION, 1988

District	Population		Total	Number of Households			Average Household Size	
	Rural	Urban		Rural	Urban	Total	Rural	Urban
Moshi Rural	339,979	2,574	342,553	62,890	650	63,540	5.4	4.0
Hai	185,582	14,554	200,136	33,899	3,419	37,318	5.4	4.3
Rombo	199,051	1,808	200,859	35,078	570	35,648	5.7	3.2
Mwanga	98,260	-	98,260	16,486	-	16,486	5.6	-
Same	125,251	44,802	170,053	21,018	9,319	30,337	5.9	4.8
Moshi Urban	-	96,838	96,838	-	22,643	22,643	-	4.2
Total	948,123	160,576	1,108,699	169,371	36,601	205,972	5.5	4.3

Source: Population Census 1988, Kilimanjaro Regional Profile.

1.6 Migration:

It is generally believed that the population of the region would have been much higher than the quoted figure of 1,104,068 (1988 population census). The Wachagga and their neighbours the Wapare have a tradition of seeking green pasture. Population Census analysis indicates that Kilimanjaro region during the period of 10 years (1978-1988) experienced relatively a higher figure of - 124,383 Net lifetime migration to other regions of the mainland. The negative net lifetime migration figure means that the region was losing more people to other parts of the country than those moving in. This is the highest figure in the country followed by Iringa region which had - 120,198 net lifetime migration (Table VI). In fact the Wachagga people might be the most mobile ethnic group in the whole country, found in large numbers in all regions either schooling working, permanently settled or during business.

The most basic reason behind this sort of movement lies in the agricultural sector. The sector has failed to satisfy economically the rural population and particularly so, the young generation. The high population density already experienced in the rural areas in the region has made it impossible for the agricultural sector to absorb or accomodate more. Lack of industrial development in the region has also contributed to this net outflow.

Table VI: Lifetime Migration By Region, Tanzania (1988 - Census)

Region	Lifetime in Migration	Lifetime out Migration	Net Lifetime Migration	Gross Migration
Lindi	95,200	145,031	-9,831	240,231
Arusha	218,427	76,703	141,724	295,130
Kilimanjaro	**93,040**	**217,423**	**-124,383**	**310,463**
Tanga	98,747	150,915	-52,168	249,662
Morogoro	172,393	141,956	30,437	314,349
Coast	103,804	207,716	-103,912	311,520
Dar es Salaam	651,246	150,625	500,621	801,871
Dodoma	89,900	190,985	-101,085	280,885
Mtwara	46,299	144,988	-98,689	191,287
Ruvuma	66,442	81,661	-15,219	148,103
Iringa	49,282	169,480	-120,198	218,762
Mbeya	160,377	113,378	46,999	273,755
Singida	86,651	150,531	-63,880	237,182
Tabora	241,729	175,359	66,370	417,088
Rukwa	87,599	49,294	38,305	136,893
Kigoma	26,795	129,718	-102,923	156,513
Shinyanga	288,210	281,447	6,763	569,657
Kagera	103,713	109,693	-5,980	213,406
Mwanza	270,142	303,646	-33,504	573,788
Mara	75,987	115,865	-39,878	191,852
Total	3,025,983	3,106,414	-80,431	6,132,397

Source: 1988 Population Census, National Profile, analytical Report

1.7 Unemployment:

Both open and disguised unemployment is a serious problem facing all regions in the country. Kilimanjaro region is not an exceptional to the rule, however, it tries hard to mitigate the magnitude of the problem by encouraging emigration of the youth out of the region. The 1988 census estimated umployment in the region at 306,214 about 40.6 of the total labour force. Out of 306,214 unemployed, 176,096 were female. It is observed from table VII that 54% of the unemployed were identified in the districts of Moshi Rural and Hai. Moshi urban district was the least in terms of unemployment rate at 9% of the total unemployed population 10 years and above years of age.

Table VII: Population 10 Years and Above by Sex, District and Occupation in Kilimanjaro Region 1988

Sex	Occupation				Total
District	Office & Sales work	Agricultural work	Industry un-specific work	Not employed	
Male					
Rombo	3150	31289	2445	21621	58505
Mwanga	1785	13795	1300	11475	28355
Same	2614	31337	1847	18018	53816
Moshi (R)	9285	38699	15640	43713	107337
Hai	4388	30500	5397	25102	65387
Moshi (U)	9233	4107	12437	10189	35966
Total	30455	149727	39066	130118	349366
Female					
Rombo	225	40596	1547	27849	72217

Mwanga	1143	16185	347	15338	33013
Same	1686	38728	382	19484	60280
Moshi (R)	8806	55183	6793	59748	130530
Hai	2649	29240	2175	37481	71545
Moshi (U)	7436	7398	4574	16196	35604
Total	23945	187330	15818	176096	403189
Both Sexes					
Rombo	5375	71885	3992	49470	130722
Mwanga	2928	29980	1647	26813	61368
Same	4300	70065	2229	37502	114096
Moshi (R)	18091	93882	22433	103461	23867
Hai	7037	59740	7572	62583	136932
Moshi (U	16669	11505	17011	26385	71570
Total	54400	337057	54884	306214	752555

Source: 1988 Population Census, Regional Profile Kilimanjaro

1.8 Climate and Soil:

The seasonal rainfall distribution in particular greatly influences agricultural practices. In the Kilimanjaro region the year can be divided into four periods with respect to the amount of rainfall: There are two rainy seasons - a major one in April - May and a minor one in September - November, and two dry seasons, a major one in December - January and a minor one in July - August. There is marked variation in the amount of rainfall according to altitude and the direction of the slope in the mountainous areas. The mean annual rainfall varies from 500 mm in the lowlands to over 2,000mm in the mountainous areas (over 1,600 meters above sea level). Temperatures are closely related

to altitude. During the rains, extra cloud cover and evaporative cooling tend to reduce maximum temperatures. Cloud cover also tend to raise minimum temperatures. The hot season lasts from October - March with high humidity; temperatures going up as far as 40^0C. In the lowlands. In the mountainous areas temperature ranges from about 15^0 - 30^0C. The soils of the region vary, there are alluvial soils which are potential agriculturally through irrigation farming due to unreliability of rainfall in those areas.

1.8 Physical Features:

The dominant physical feature is a main chain of mountains running from North-North West to South-South East with land sloping away to a minimum height of 305m above sea level on either side. The snow capped Mount Kilimanjaro provides an endless supply of water to the lower slopes along numerous streams. Most of the rivers in this region peter out after running into the plains, Ruvu (Pangani) river and Kikuletwa river gather water from the upper streams and keep flowing even in the dry season. Both rivers join together at some point, approximately 38 kilometers south of Moshi municipality, forming a large artificial lake called Nyumba ya Mungu extending about 6 kilometers from north to south. The water discharged from the dam, forms Pangani river, which turns around and flows southward in the neighbourhood of Mkomazi at the southern tip of South Pare mountain system forming the largest water system in this region.

1.10 Agro-Econimic/Ecological Zone:

The Kilimanjaro region comprised of four ecological zones based on altitude, soils and climate. The zones include, the peak of Kilimanjaro Mountain, Highlands, Intermediate (middle) and Lowland Plains (Tambarare) Zones.

(i) **Kilimanjaro Mountain Peak Zone:**

It lies between 1,800 and 5,895 meters above sea level and receives annual rainfall of more than 2000mm. The area between 1,800 and 2,400 meters is designated both as the Kilimanjaro Naional park and Forest reserve. Due to its altitude and weather conditions, the zone remains uninhabited.

(ii) **Highlands Zone:**

The highlands zone lies between 1,000 and 1,800 meters above sea level. The annual average rainfall falls between 1250 and 2000mm. While temperatures range between 15^0 Centigrade and 20^0 Centigrade. The Highland zone has good and very fertile soil following the remains of volcanic rocks rich in magnesium and calcium. On the western part of Mt. Kilimanjaro a bt of wheat, beans and barley are grown and dairy cattle raised as well. Other agricultural products grown include, coffee, bananas, fruits and irish potatoes. The main problems in the Highland zone are population pressure exerted on a small land area giving rise to a population density of 650 people per sq. Kilometer and soil erosion caused by the tendency of the people to cut-down trees, in search of timber and sometimes for acquiring more land for agricultural activities, or simply for settlement.

(iii) **Intermediate Zone**

It lies between 900 and 1100 meters above sea-level and receives enough annual rainfall ranging between 800 and 1250 mm. It has a moderate soil fertility which is good for coffee plantations, bananas, maize, beans and suitable for dairy cattle, goats, pigs, rabbits and poultry farming. Like in the Highlands zone, it has a high population density of 250 persons per sq kilometer leading to land shortage and soil erosion.

(iv) **Lowland Plains zone**

This zone lies below 900 meters above sea level and has an average annual ranfall of between 700 and 900 mm, while temperatures are above 30^0 Centigrade. Common crops grown in this zone include, maize, cotton, rice, sorghum, cassava and pigeon peas. Domestic animals that thrive well in the area are beef cattle, goats and sheep. It is from this zone where the best hay for cattle is found, during the dry season livestock keepers from the highland and intermediate zones obtain or purchase hay from this zone. Population density is low with less than 50 people per sq.km. Low density is due to unfavorable climate, explained by devastating effects of frequent floods during long rains and the dry nature of the zone. It is in this zone that irrigation farming is getting popular through efficient utilization of river water from the highlands.

Table VIII: SUMMARY OF AGRO-ECONOMIC ZONES KILIMANJARO REGION

Zone	Population Density (sq.km)	General morpho-logy	Altitude range (M)	Dominant Soils	Economic Activity	Rain fall (MM)	Temperature ($_0$C)
i) Kilimanjaro Mountain peak	-	Steep Mountain	1800-5895	Volcanic	Tourism activities	2000-over	-below 15
ii) Highlands	600	Slopping hills and plateaux	1000-1800	Volcanic	Agriculture Wheat, Benas, barley coffee, bananas, fruits Livestock Cattle, goats, pigs	1250-2000	15-20
iii) Intermediate	250	Gentle plain and moderately slopping hills	900-1100	Moderate fertile soil	Agriculture Coffee, Bananas, maize, beans Livestock: Cattle, goats, pigs, rabbits and poultry	800-1250	20-30
iv) Lowland Plains	50	Flat plains	900	Variables	Agriculture Maize, cotton, rice, sorghum, cassava, peas Livestock Cattle, goats, sheep	700-900	30-over

Source: Kilimanjaro Regional Development Plan 1990/91

1.11 Land Use Pattern and Utilization:

The land use in the region can be classified as follows:-

Agricultural and Cultivated land	6,433 sq km
Government Forest Reserves	333,640 ha.
Local Authority Forest Reserves	212,880 ha.
Forest Plantations	5,750 ha.
Game Reserves	373,000 ha.
Controlled Area and Woodlands	276,800 ha.
Marginal lands settlement	64,700 ha.
Total	1,342,370 ha.

Source: Kilimanjaro Region Development Plan, 1990/91

i) In Kilimanjaro region agricultural land occupies a total area of 6,433 sq.km. of which 333,640 ha. Is under cultivation. This is 22% of the total area of the region. Out of this 15% is under cultivation settlements. Over 70% of the agricultural hectarage is held by small holders, while the remaining 30 percent is cultivated by both public and private corporations or large farms.

ii) The area between 1,100 and 1800m. (a.s.l.) around the slopes of mount Kilimanjaro and Pare mountains are suitable for agricultural production with favourable living environment. Becasue of the population pressure the type of cultivation so far assumes the following characteristics.

- Cultivation and housing is very dense in the highland zones with cultivation rate of 98% and population density above 20 person/km^2

- Net agricultural hectarage on average is 0.66 ha. Per household

- Over 65% of the smallholder live and are engaged in cultivation of banana and coffee, while livestock is stalllfed. The same small holders own pieces of agricultural land in the low lands for the annual crops, where maize, beans and oilseed are grown.

iii) Between 900-1100 (a.s.l.) Rate of cultivation is about 35% while the population density is around 60 person/km^2. Gross agricultural is about 2.72 ha/household. Mixed farming is practiced by small holder farmers.

iv) In the lowlands the rate of cultivation is very low, less than 10% of the total activities and the population density is 25 person per km^2 with an average hectarage of 1.27 ha/household.

Due to the nature of the land, majority of livestock keepers are found in the lowlands, and grazing is their dominant economic activity.

1.12 Land Scarcity:

Crop production and agricultural expansion in the region is likely to face physical limitations (Arable land is only 48.7% of the total land areas). In the highland areas for instance, a family owns an average of 0.5 of a hectare while in lowland area a family owns 1.5 hectares. The scramble for land and scarcity of land in Kilimanjaro region is thus being experienced day after day. In addition, environmental degradation is increasingly taking place due to poor farm management system such as non-use of soil erosion control methods. In this regard, the region needs to intensify land management practices in order to improve land productivity per unit area Generally the experience of land limitation is the factor which mostly contributes to the movement of people out of the region.

SECTION II

2.0 REGIONAL ECONOMY

2.1 Introduction:

The greater part of the population (75%) in the region still lives in the rural areas heavily dependent on agriculture and livestock keeping for their livelihood. Main cash crops in the region include coffee which is grown in plantations as well as smallholders. Wheat and barley are grown in the state farms. Cardamon, sisal, cotton, sunflower and groundnuts are gaining ground for expansion. The region is a major coffee producer and its production accounts for an average of 30% to 36% of the total national coffee production.

Livestock is ranked as a second vital economic activity in the region. Modern dairy farming is practised in the highlands and intermediate zones. Whereas the people in the lowlands are engaged in "unscientific" ranching. Apart from agriculture and livestock, which contributes about 60% to the Regional GDP, there are also varied industrial and commercial activities undertaken in the region.

2.2 Regional GDP and Per Capita GDP

The Region's Gross Dometstic Product trend for the last 15 years (1980-1994) portrays a gradual but significant increase (Table IX). GDP earnings accrued in the region increased from Tshs.1,950 million in 1980 to Tshs.72,898 million in 1994.

However devaluation of the T.shilling over the years within the period appears to negate the seemingly big growth. For instance the region's GDP in 1980 was Tshs. 1,950 million equivalent to USA $ 237 million at the exchange rate of Tshs.8.22/Dollar. At the end of 1994 the region had a GDP of Tshs.72,898 million but the exchange rate was at Tshs.553/USA $, this was equivalent to 132 million USA $ GDP earning. This data infact tells us that the region's economy infact had gone down in real terms. It means that for the region to earn at the income value of 1980 had to produce almost twice as much in 1994.

It is observed that throughout the period (1980-1983) the region's GDP contribution to the Naitonal GDP had been constant at 5%. Subsequent years from 1984 to 1989 its contribution gradually dropped to 2% then surfaced again to 4% from 1990-1994. Kilimanjaro ranks 10th in GDP contribution to the Nation's economy among the Mainland regions as by 1994 (Table X).

A quick look at the Per Capita GDP of the region (Table IX) shows a similar trend of growth to that of the regional GDP. The region experienced a per Capita GDP of over USA $ 250 in 1980 - 1982 . This however took a dramatic decline from 1983-1989 when it went down as low as USA $ 33, then temporarly improved to 127 USA $ in 1990 but could not sustain much when it plunged down again to a final rest of 101 Dollars in 1994. These fluctuations in Per Capita earning in real terms had been contributed by the unstability of the T.Shilling against the value of the USA $. For this reason the Kilimanjaro man has experienced decreasing economic power and ranks 8th in comparison to other regions in the country (Table XI).

Table IX: REGIONAL GDP AT CURRENT PRICES AND % CHANGE 1980 - 1994 KILIMANJARO REGION

Year	GDP at current price in Tsh. Millions	% Change	Per Capital GDP Current Price Tshs. And in USA Dollar			% Change	Average % Contribution to GDP Naitonal GDP
			TShs.	Exchange Rate	Dollar		
1980	1950	-	2073	8.22	252	-	5.00
1981	2168	11.2	2258	8.35	270	7.1	5.00
1982	2643	21.9	2695	9.52	283	4.8	5.00
1983	2868	8.5	2868	12.44	230	18.7	5.00
1984	2276	-20.4	2227	18.16	123	46.5	3.00
1985	2991	31.4	2865	16.50	174	41.5	3.00
1986	3886	29.9	3647	51.70	71	59.2	3.00
1987	2979	-23.3	2738	83.70	33	53.5	2.00
1988	5254	76.4	4750	125	38	15.2	2.00
1989	8241	56.9	7245	192	38	0.0	2.00
1990	29215	254.5	24975	197	127	234.2	4.00
1991	36484	24.9	30329	234	130	2.4	4.00
1992	45347	24.3	36655	335	109	16.2	4.00
1993	56805	25.3	44650	480	93	14.7	4.00
1994	72898	28.3	55716	553	101	8.6	4.00
Average	18400.3	-	15046.1		138	33.2	3.7

Source: 1. National Accounts for Tanzania 1976-1994, 11th Edition, August, 1995
2. Bank of Tanzania Economic Bulletin 1995 Vol.XXIV No.4

Fig. 4a: Regional GDP at Current Prices 1980 - 1994, Kilimanjaro Region

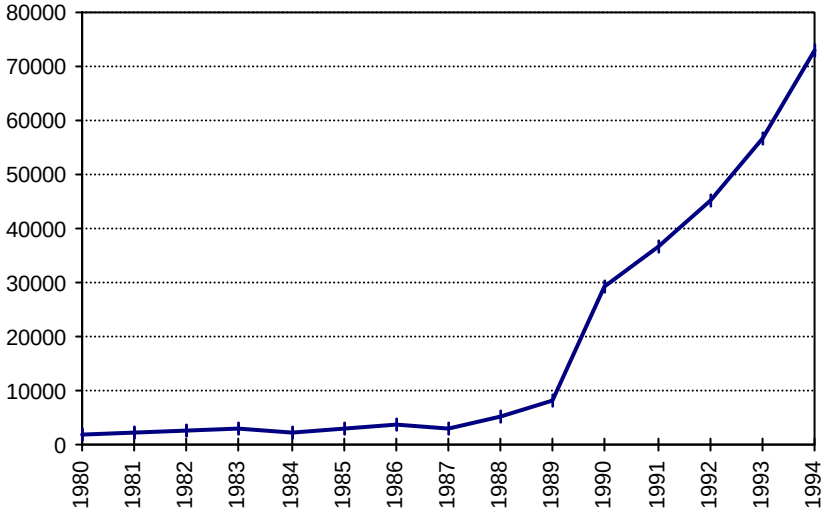


Fig. 4b: Per Capital GDP Current Price Tshs. 1980 - 1994, Kilimanjaro Region

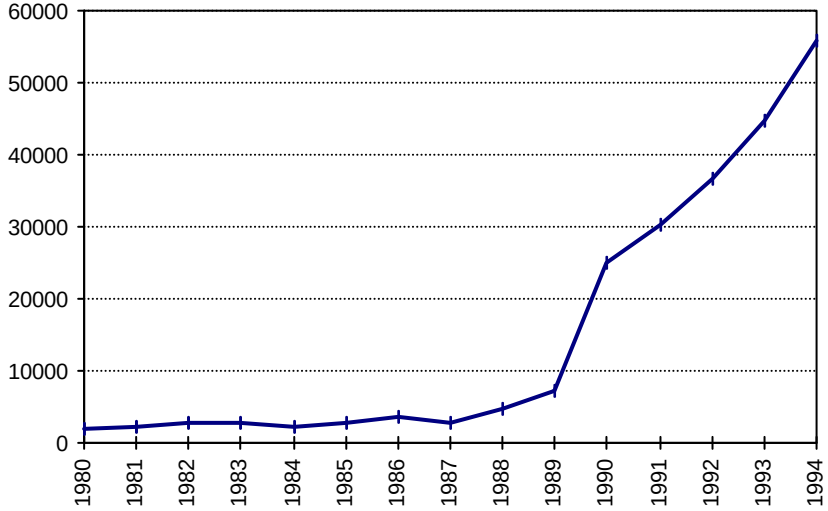


Table X: Regional GDP and Contribution Ranking, Mainland, 1994

Region	Average % Annual GDP Contribution	GDP Contribution Ranking
Kilimanjaro	**3.67**	**10**
Dar es salaam	20.33	1
Arusha	7.80	2
Mwanza	7.67	3
Mbeya	6.00	4
Shinyanga	5.80	5
Iringa	5.53	6
Tanga	5.52	7
Morogoro	4.67	8
Kagera	3.67	9
Mara	3.47	11
Tabora	3.40	12
Ruvuma	3.33	13
Mtwara	3.27	14
Rukwa	3.13	15
Dodoma	3.07	16
Singida	2.87	17
Kigoma	2.53	18
Lindi	2.00	19
Coast	1.00	20
Total	100.0	

Source: National Accounts of Tanzania, 1976 - 1994 11th Edition, August, 1995

Table XI: Comparison of Per Capita Incomes for Tanzania Mainland Regions, 1994

Rank Number	Region	Per Capita Income TShs.
8	**Kilimanjaro**	**55,716**
1	Dar es Salaam	197,107
2	Arusha	91,024
3	Rukwa	80,669
4	Iringa	64,502
5	Tanga	60,021
6	Mtwara	59,533
7	Morogoro	59,370
9	Singida	55,644
10	Shinyanga	52,746
11	Ruvuma	52,537
12	Kagera	50,105
13	Mbeya	48,737
14	Mwanza	48,508
15	Tabora	44,984
16	Mara	43,748
17	Dodoma	39,604
18	Lindi	38,340
19	Kigoma	30,103
20	Coast	22,624

Source: Naitonal Accounts of Tanzania 1976-1994 11th Edition, August 1995

2.3 Socio-economic Indicators:

Notwithstanding the stagnacy of the regional GDP and per Capita GDP discussed above, the people living in the rural areas in Kilimanjaro region are relatively more accessible to social services like water, health and education compare to residents of other regions. People there also live in comparatively up to date houses.

Socio-Economic indicators such as life expectancy at birth, literacy rate, primary school enrolment rate, infant and child mortality, population per health facility, population per physician and others discussed in detail elsewhere in this document portray the region as being relatively developed compared to others. Table XII below compares Kilimanjaro region with a handful regions using some few selected Socio-economic indicators.

Table XII: Selected Social and Economic Indicators for Kilimanjaro: a comparison 1994

Indicators	National	**K/Njaro**	Arusha	Kagera	Mbeya	Iringa	Mwanza
Regional GDP In (Tshs.Mill)	1,659,929	**72,898**	145,192	80,537	84,903	92,021	107,553
1. Per capita Income (Tshs.)	62,138	**55,716**	91,024	50,105	48,737	64,502	48,508
3. Life expectancy (1988)	50	**59**	57	45	47	45	48
4. Infant Motality rate (1994)	161	**92**	82	213	167	190	160
5. Population growth rate (1988 census)	2.8	**2.1**	3.8	2.7	3.1	2.7	2.6
6. Population density per km^2 (1988 census)	26	**96**	16	47	25	21	96
7. Enrolment rate (GER) for primary school % (1995)	74.2	**91.6**	75.7	57.3	79.6	80.9	67.6

8. Literacy rate (1988) (%)	61.2	**95**	58.1	59.5	61.9	68.3	57.3
9. Population accessible to clean water % (1994)	50.5	**59**	37.4	28.4	48.7	48.2	56.4
10. Number of primary schools	10,454	**701**	573	677	809	707	811
11. Number of Secondary schols	405	**91**	54	37	27	44	34
12. Number Dispensary	3,014	**225**	180	145	186	186	238
13. People per Dispensary	10,000	**4,957**	7,511	9,144	7,936	8,574	7,891
14. Number of Health centers (1994)	276	**15**	11	12	17	16	25
15. People per Health center	50,000	**88,913**	122,909	110,500	86,824	75,563	72,231
16. Number of Hospital	175	**13**	14	11	11	13	12
17. People per Hospital	10,000	**97,412**	96,571	120,545	134,182	93,000	170,727
18. Number of Doctors (1994)	1,086	**45**	45	27	26	29	25
19. People per Doctor (1994)	24,930	**28,142**	30,044	49,111	56,769	41,690	75,120

Source: Compiled data, Planning Commission,

2.4 Productive Sector:

2.4.1 Agriculture:

The region may be divided into three zones. The Lowlands (1,500m and below); the Highlands (1,500-3000m); and the Forest (above 3000m). With the exception of land above 3000m. most of the land can be used for agricultural activities. Agricultural land on the other hand can be classified into four main zones: The Coffee zone which can grow coffee, bananas, maize,

beans and dairy cattle. The Wheat zone, where the agricultural activities include Wheat, beans maize and dairy production. The Lower zone, which includes areas suitable for ranching as well as areas suitable for maize, cotton, beans and paddy. The Forestry zone, accounts for 388,500Ha. of forest and National park.

2.4.1.1 **The Coffee Zone:**

The zone is the typical one of the region. It is intensely cultivated with coffee and bananas in pure or mixed stands, and is very densely populated and forms the core of the region's economy. Although more than 60 percent of the zone gets 1,000mm or more of rainfall annually, much of this rainfall is concentrated in the rainy season. Consequently, in the dry season those crops which are not irrigated suffer from lack of water.

2.4.1.2 **The Wheat Zone:**

This zone is located in the western part of Mt. Kilimanjaro and suitable for wheat, beans, maize and dairy, though other crops can also be grown. Wheat crop production is done on a large scale by the NAFCO and private farmers. The farms planted with wheat are located in areas with annual rainfall of 600 to 700mm but due to year to year fluctuations in the rainfall, the wheat yields are not stable. In addition to dairy farming practiced by large farmers, beef cattle and goats are grazed on natural pastures called the Massai steppe.

2.4.1.3 **The Lower Zone:**

The lower zone borders Moshi and Hai Districts and extends south of the banana/coffee zone on the sourthern slopes of Mt. Kilimanjaro and borders at its southern most end with the Kikuletwa river and Pare district. The land

scape is generally very gentle except the area to the North of the Highway connecting Arusha and Mombasa where the landscape is mildly rolling. The Rombo district lower zone on the other hand, borders with and extends to the east of the coffee zone and on the east it borders The Republic of Kenya. The Pare district lower zone encompasses a large area of flat land that stretches to the east of the hills of north and sourth Pare (Mwanga and Same) and reaches up to the national border with The Republic of Kenya. Two thirds of this zone is taken up by the Mkomazi game reserve. Depending on the location, the lower zone I Moshi Rural and Hai districts can accommodate a variety of agricultural activities. In the south eastern part of the lower zone where irrigation water is available, paddy, and maize are cultivated in rotation and in many cases double-cropping of paddy and maize or maize followed by maize is practiced. In Moshi rural district, this part is endowed with abundant subterranean water, and has many springs including Miwaleni spring which would support irrigation farming with minimum effort. The Rombo lower zone is suitable for rain fed crop activities because it gets some rain during the long and short seasons. (Crops like finger millet, maize, beans and groundnut). Most farms in the lower zone are owned by farmers who commute from their homes in the coffee zone.

2.4.1.4 **Forestry Zone:**

The forestry zone in the district of Hai, Moshi Rural and rombo, form the Kilimajaro National park. They border the coffee zone and are covered by forests. In Rombo and Hai district Irish potatoes and maize are grown at the height of between 1,800 to 2,000m in re-forested blocks. The forestry zone in Pare district, however, consists of steep mountains which are poorly covered by trees.

2.4.1.5 **Crop Production Pattern:**

The economic development of the region started long time back and depends greatly on agriculture which contributes more than 60 percent of the region's GDP. The important cash crops include coffee, cotton, sugar-cane, sisal, sunflower, beans, wheat, whereas important food crops are bananas, and maize.

2.4.1.6 **Food Crops:**

The most important food crops are bananas and maize (Table XIII). The amount of maize being produced is a clear indication of the extent to which maize has now been accepted as a co-staple to bananas.

Table XIII: Food Crop Production (Tonnes 1990/91-1995/96) Kilimanjaro Region

Crops	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Maize	85865	156472	77866	138007	157203	183645
Paddy	25943	14094	21381	25126	30845	35464
Vegetable	36930	57081	21822	25701	33870	47600

Beans	31409	23667	11562	17503	22326	21367
Cassava	11330	7160	30489	10830	20090	40540
Bananas	708430	749238	551853	354125	544962	657510
Irish Potatoes	22400	68185	40395	26850	82510	54018
Sweet Potatoes	59000	1290	787	10196	97500	2020
Millet	3293	2837	2856	3906	4450	4350
Sorghun	573	1150	1252	4213	3883	6300
Wheat	4510	2060	3634	3160	4140	4765
Fruits	6000	5751	12000	9500	16845	15720

Source: Regional Commissioner's Office, Kilimanjaro

Fig. 5a: Food Crop Production (Tonnes 1990/91-1994/95) Kilimanjaro Region

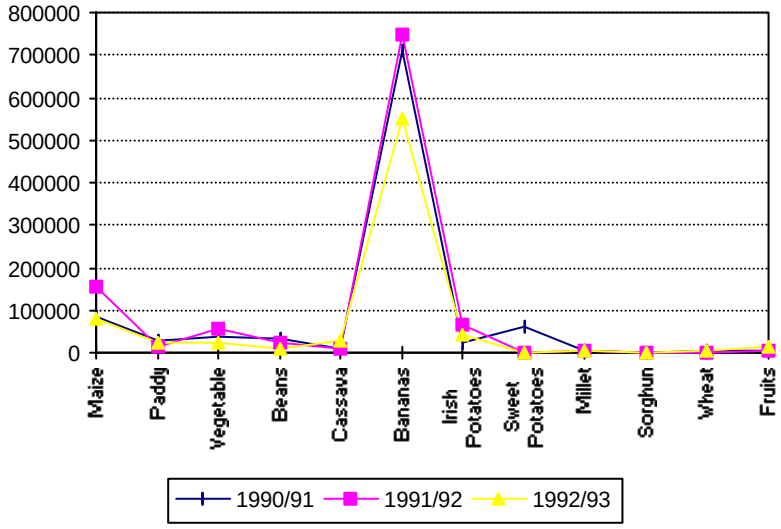
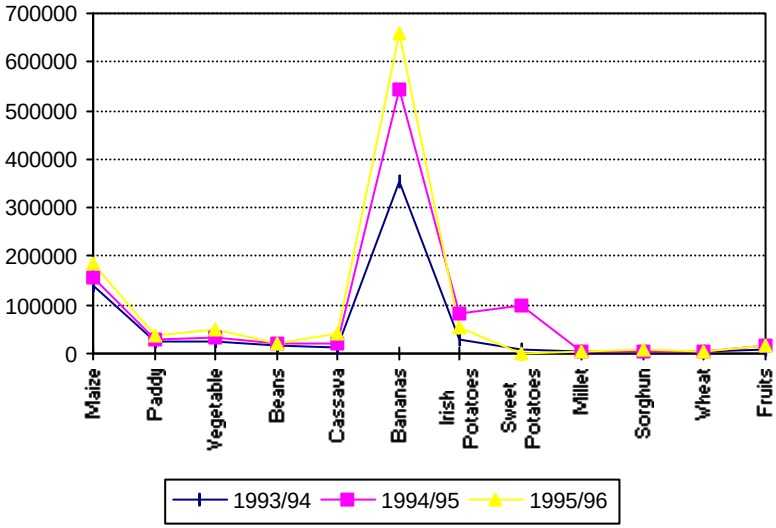


Fig. 5b: Food Crop Production (Tonnes 1993/94-1995/96) Kilimanjaro Region



In the past most of the maize was eaten when it was still green but changes in food preference later influenced the people to accept maize meal as their diet. In fact, in the lowlands maize is the main staple food. This change has caused pressure on maize and facilitated the expansion of settlements at lowlands, as the crop provides food and cash. Bananas are mainly grown in the highlands and today it stands as a cash crop. Other food crops include, cassava, millet, sorghum, beans, potatoes, fruits and vegetables and various pulses grown for regional consumption and for export to other regions.

2.4.1.7 **Food Adequacy:**

The estimated regional requirement for cereal food crops is 316,496.0 Metric tons per annum while average production of the same is about 306,624.0 tons. The estimated regional requirement for protein food crops

is 90,929.0 Metric tons while the average production of the same is about 86,981.0 tons, effecting protein food crops food shortage in Kilimanjaro region to the tune of 3,948.0 Metric tons.

N.B: The high volume of productivity in the case of bananas is attributed to acceptability of high yielding varieties (PARS) which was introduced recently by research and extension coupled by market demand in Dar es Salaam.

2.4.1.8 **Cash Crops:**

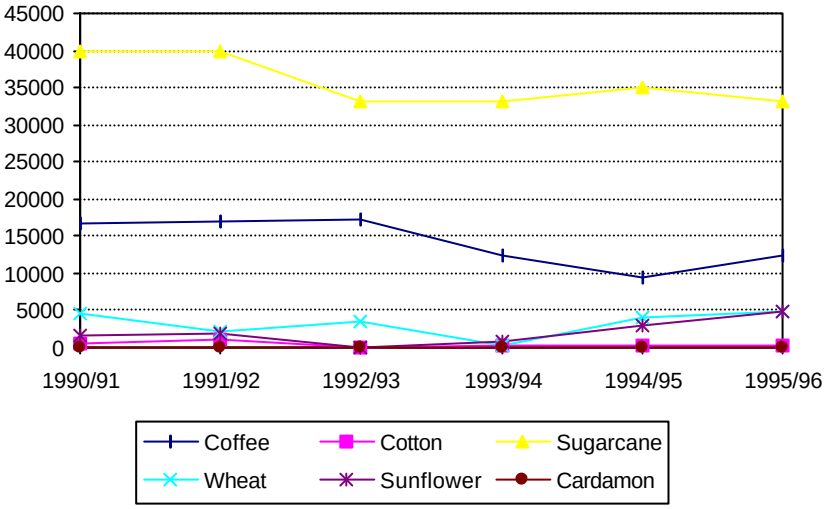
In the highland area the main cash crops grown in home-stead plots is coffee inter-cropped with bananas. Coffee introduced in Tanzania in 1890's was first grown in Kilimanjaro region in the 1910s. Table XIV below shows the type of major cash crops produced in the region.

TABLE XIV: CASH CROP PRODUCTION, 1988/89 - 1990/91 (TONS)

Crops	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Coffee	16584	17031	17207	12288	9421	12400
Cotton	569	1153	0	190	254	265
Sugarcane	40,000	40,000	33,100	33,200	35,100	33,100
Wheat	4510	2060	3634	316	4140	4765
Sunflower	1524	1972	120	775	2983	4876
Cardamon	11	7	10	100	10	10

Source: Regional Commissioner's Office, Kilimanjaro

Fig. 6: Cash Crop Production, 1990/91 - 1995/96



It is observed in table XIV above that coffee production in 1994/95 fell very significantly to 9421 tons from 17,207 tons produced in 1992/93. A drop in volume in 1994/95 must have been influenced by both wheather and coffee prices which fell down in 1990, and hence affecting production volume. Nonetheless coffee still remains the most important cash crop in the region and at national level it accounts for 36.4 percent of total national coffee production. Confirming further the importance of coffee in the region, particularly in Moshi Rural, Hai and Rombo districts, 68 percent of the planted area is under coffee/bananas whereas only 17 percent is so planted in Mwanga and Same district.

In the region as a whole coffee/bananas crops occupy 23 percent of the total cultivated area followed by maize, bans/maize each at

14 percent. Table shows the number of hectares put under coffee production by each district. Table XV(a)

Table XV(a): HECTARES UNDER COFFEE PRODUCTION BY DISTRICT, 1990/91 KILIMANJARO REGION

District	Hectare Cultivated (Coffee)
Hai	20,823.85
Moshi Rural	35,117.00
Rombo	159,945.10
Mwanga	2,317.50
Same	2,727.08
Total	76,930.53

Source: TFNC Report No. 1231: The Situation Analysis of Food and Nutritional problems facing Women and Children in Kilimanjaro Region.

Fig. 6: Hectares Under Coffee Production by District 1990

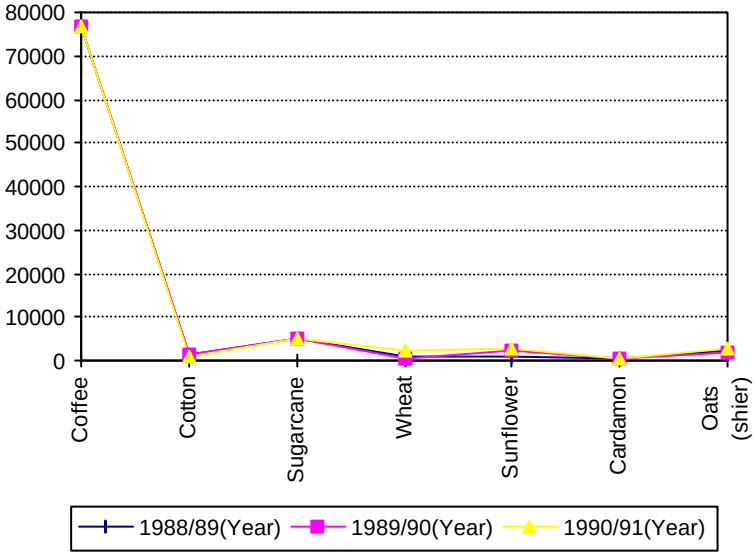


Table XV(b) compares hectares under coffee production over a decade and a half (1977 - 1995) and calculated average coffee yields/ha. among principal coffee producing regions in the country. Mbeya region alone shows positive growth in yield/ha. over the stated period while the rest of the principal coffee growing regions show declines in this respect. Kilimnjaro and Arusha regions are worse of changes of - 42 and - 38 percent respectively.

TABLE XV(b): HECTARES UNDER COFFEE AND AVERAGE TONS CLEAN COFFEE PER HA. AMONG MAJOR COFFEE PRODUCING REGIONS, TANZANIA MAINLAND

Region	Hectare 1977-88	Hectare 1990-95	Average Yield 1977-88	Average Yield 1990-95	Yield Change (%)
Kilimanjaro	**60,393**	**70,326**	**262**	**153**	**-42**
Arusha	11,777	19,078	282	176	-38
Kagera	45,012	59,012	232	184	-26
Mbeya	25,481	48,746	155	186	+20
Ruvuma	15,382	36,633	290	254	-12
Iringa	2,444	6,838	320	300	-7
Other	5,725	18,500	215	180	-16
National	166,214	259,133	251	203	-19

Source: MDB Reports, 1997

Paddy ranks fourth with 7 percent of the cultivated land. In Same and Mwanga cardomon is grown as a spice and cash crop which has a relatively good market price, Cotton production is now confine to Same district due to competition with their better priced crops like paddy and sunflower and poor marketing facilities for the cotton crop.

2.4.1.9 **Food Storage:**

The problem of food storage is principally caused by the existence of inadequate and poor storage facilties

which renders stored crops vulnerable to insects, pests and rodents.

In most households, the widely used storage facilities include drums, 'vihenge', sacks and ceilings. However, of recent the prices of drums and construction of vihenges have jgone up hence poor families have to rely on the cheaper techniques which are easily attacked by pests and rodents. The use of Actelic super Dust (ASD) on maize and pulses has greatly reduced storage losses.

Due to lack of adquate knowledge on food preservation techniques highly nutritious vegetables and fruits are forced to be consumed only seasonally. The region has a total of 196 godowns with a capacity of 84,663.2 metric tones distributed amongst the districts as indicated below:-

TABLE XVI: DETAILS OF GODOWNS IN KILIMANJARO REGION

District	Number of godowns	Total Capacity Metric (T)	owner	Purpose
Moshi Rural	63	53,797	KNCU, CDRF, NMC, TCMB, Village	General Goods inputs and Food crops
Hai	53	7,153		- do -
Same	36	11,550	VCU, Villages, CDTF, PADECO	- do -
Rombo	26	11,018	KNCU, Villages, NMC	- do -
Mwanga	18	1,145	VCU Village	- do -
Total	196	84,663		

Source: Regional Commissioner's Office, Kilimanjaro.

2.4.1.10**Irrigation:**

According to the Japanes Planning Team (RIDEP, Kilimanjaro 1977) 5.4 percent of the region's cultivated land is irrigated compared with only 4 percent in Tanzania as a whole. Within the region, irrigation coverage is exceptionally high in Moshi rural, Hai, Rombo and Pare districts (Mwanga and Same).

This is due to the fact that these two districts (Moshi Rural and Hai) are in densely populated mountain slopes where a large amount of water is available and utilised, and the fact that an increasing number of people who are gradually being forced by population pressure to move downhill and settle in lowland areas are using an increasingly large amount of water for irrigation farming. Rombo has very few permanent streams and irrigation in the district is negligible, even within the Coffee/banana belt. In Kilimanjaro region, water plays a very crucial role. Three sources of irrigation water may be considered: surface water, underground water and dams. Water resources in Moshi rural, Hai and Rombo districts originate primarily from rain in the mountain area and from the melting snow on the mountain slopes, forming numerous tream flowing down the mountain.

TABLE XVII: TRADITIONAL IRRIGATION WATER SOURCES, KILIMANJARO REGION, 1990

District	No. of Rivers	DMS	Traditional Irrigation Channels
Same	6	1	52
Mwanga	5	1	26
Rombo	2	-	16
Moshi	8	-	260
Hai	7	-	154

Total	28	2	508

Source: TFNC Report No.1231

It is estimated that about 52,000 hectares of land are put under traditional irrigation system. Using traditional irrigation system, farmers grow coffee, bananas, cardamon, vegetables and fruits. Modern irrigation schemes are employed in Arusha Chini area where the Tanganyika Planting Company is irrigating over 7,800 ha. Of sugarcane. Other areas include, the Miwalani-Kahe of the kahe basin managed by Naitonal Food Corporation Farm (NAFCO) and Miwaleni villages. Lower Moshi and Ndungu irrigation projects constructed through Japanese assistance are among the modern irrigation schemes. There are also eleven dams and reservoirs in the region, but Nyumba ya Mungu Dam is the largest of all dams and the most reliable source of water for irrigation. Except for the Nyumba ya Mungu dam in Mwanga district completed in 1968, most of the dams were built in the second half of 1950's and therefore do not provide reliable sources of water for irrigation. Rehabilitation of the jold dams and construction of new ones is necessary in order to harvest farm water for irrigation. Table XVIII below shows the capacity of irrigation dams in the region.

TABLE XVII: DAM IRRIGATION WATER SOURCES

Location		Capacity of Storage (M)	Volume (m^3)
Pare District.			
1.	Nyumba ya Mungu	1,140,000	603,000
2.	Shungula	24,700	18,733
3.	Dindira	274	14,411
4.	Shatto	739	55,800
5.	Ranzi	286	18,780
Moshi District			
1.	Sholo	90	21,000
2.	Urenga	180	35,000
3.	Mworoworo	158	26,950
4.	Ukiashi	158	67,760

Source: Regional Agriculture and Livestock Office, Moshi, Kilimanjaro Region

(i) Lower Moshi:

The Lower Moshi Irrigation Project began in 1984, and was completed in April 1987. The project study involved irrigation potential areas of Rau River system (ha.2300) Miwaleni Pump Scheme (ha.2000), Himo River system (ha.1000) and ground water system (ha.1020). Crops grown under the Lower Moshi scheme include paddy 900-1100 hectares cultivated during rain-season, 400 hectares during dry season while 900 hectares are put under maize. Perennial crops occupy 300 hectares. Rice production in Lower Moshi Irrigation Project, has surpassed the target put at 4.5 tons per hectare to register an average of 6.5 tons per hectare recorded in 1990. Problems facing the project include, inadequate water

supply for irrigation purposes either due to drought or huge water demand by various users including those employing traditional Irrigation schemes.

In order to curb inadequate water supply for irrigation, the region needs to explore more seriously the posibility of getting some underground water or attempts should be made to draw water from Miwaleni Project/Kikuletwa.

(ii) **Ndungu Irrigation Project:**

Ndungu irrigation Project is among five irrigation projects in Mkomazi Valley. The five projects include, Ndungu (ha.680), Gonja (ha.600), Kihurio (ha.1670), Kisiwani (ha.360) and Igoma (ha.750) Ndungu Project was completed in 1990 and agricultural activity began immediately, with an average production of 5.5 tons per hectare. The table below indicates a trend in paddy and maize production in both Lower Moshi and Ndungu Irrigation schemes.

TABLE XVIII: LOWER MOSHI AND NDUNGU IRRIGATION PRODUCTION 1989-1993

Year	Crop	Lower Moshi Project		Ndungu Project	
		Area Cultivated (Ha)	Production (tons)	Area cltivated (Ha)	Production (tons)
1989	Paddy	484	3025	680	8645
	Maize	-	-	-	-
1990	Paddy	901	4981	1663	11.008
	Maize	217	434	-	-
1991	Paddy	680	3740	680	8,638
	Maize	437	854	-	-
1992	Paddy	480	1680	485	3657
	Maize	450	675	-	-
1993	Paddy	950	4080	N.A.	N.A.
	Maize	N.A	N.A.	-	-

Source: Regional Commissioner's Office Kilimanjaro Region, Moshi, 1995

The two irrigation projects enabled the region to increase paddy production by 124 percentage from 17100 tons in 1985 to 35,464 tons in the year 1995/96. It is being observed from table XVIII that the cultivated areas in both projects fluctuate very much in terms of the number of hectares and the same applies to production volume. For instance, the areas cultivated for rice in Lower Moshi project in 1989 was 484 hectares while in 1990 the number of hectares increased to 901 and dropped to 680 hectares in 1991 and 480 hectares in 1992. In 1993 the number went up incredibly to 950 hectares. Despite these fluctuations in the number of hectares and paddy production volume, the two projects have been successful in achieving the objective of increasing food production and provision of employment, hence living standards alleviation of the farmers and the people around the project areas.

2.4.1.11 **Farm Inputs:**

Availability of farm inputs is generally a problem to small farmers and Kilimanjaro farmers cannot be the exception. Farm inputs if correctly applied are very central in the improvement of both quality and quantity of farm yields. The main problems with farm inputs have always been later delivery or high prices of these inputs or short supply. Tables XIX and XXI give information on the availability of farm inputs and farm implements to farmers in Kilimanjaro region.

TABLE XIX: FARM INPUTS AVAILABILITY TO KILIMANJARO REGION FARMERS, 1986/87 - 1990/91

Year	Improved Seeds (Tons)	Fertilizers (Tons)
1986/87	872	6074
1987/88	872	6575
1988/89	444	7522
1989/90	252	9641
1990/91	379	8314

Source: TFNC Report No. 1231: The Situation analysis of food and Nutritional Problems in Kilimanjaro Region

TABLE XXI: PESTICIDES MADE AVAILABLE TO FARMERS, 1988/89 - 1991/92, KILIMANJARO REGION

Type of Pesticide	1988/89		1989/90		1990/91		1991/92	
	Quantity Required	Actual	Quantity Required	Actual	Quantity Required	Actual	Quantity Required	Actual
Kocide Mt.	1500	6.86	1035	199.98	-	-	-	-
Bayleton Mt.	-	70	20	12	41	41	42	-
Blue Copper	1590	210	700	-	820	120	678	-
Red Copper	660	-	810	-	-	-	157	-
Delan	-	-	-	-	20	-	-	
Octave Mt.	-	39920	-	-	-	-	-	
Bravo Lt.	262875	69960	468000	93686	450000	-	100000	
Dyrene	-	-	23900	231810	-	300000	-	
Title Lt.	-	38500	-	20000	-	-	-	
Dursban Lt.	225000	34660	404152	139340	285000	14000	60000	
Selectron Lt.	-	-	35000	34000	160000	20000	90000	
Dieldrin Lt.	-	-	10000	4000	20000	-	10000	
Endosulfan Lt.	-	-	2000	-	3000	-	30892	
Bayfidan	-		-	1500	-	1500	-	

Source: TFMC Report No.1231: The Situational Analysis of fooe and Nutritional Problems Facing Women and children in Kilimanjaro Region.

2.4.2 Livestock Development:

About 2018 sq. km. Equivalent to 15.3% of the total area of the region is under livestock farming. Despite scarcity

of grazing land, livestock keeping could still be ranked second predominant economic activity after crop farming. Households living in the highlands and intermediate zones practice modern dairy farming is under zero grazing or stall feeding whereas those in the lowlands are engaged in what may be termed as "traditional ranching". And most of the cattle reared mider this system are mainly local zebu. The other types of livestock are evenly distributed on both zones. The number of various livestock units kept in the region in 1993/94 is as sown in Table XXII.

TABLE XXII: KILIMANJARO REGION LIVESTOCK SUMMARY DATA 1993/94

Livestock Category	Total		Household Average	% on National Total
	National	Regional		
Cattle	1,617,593	485,448	3.88	3.57
Goats	8,641,222	490,338	5.48	6.91
Sheep	2,692,716	206,904	2.96	7.68
Chickens and other poultry	21,530,083	1,029,495	5.83	4.78
Pigs	429,682	14,873	-	3.32
Donkey	272,427	202,378	-	4.46
Buffalos	13,916	2,282	-	16.40
Rabbits	269,455	15,666	-	5.81

Source: 1. Compiled from National Sample Census of Agriculture 1993/94 Report Vol II Page 42-57

2. Regional Agricultural and Livestock Development Office, Kilimanjaro Region, Moshi.

In comparison with regions like Mwanza, Shinyanga, Mara and Dodoma, Kilimanjaro region could be regarded to have relatively smaller livestock populations. Cattle, sheep and goats are central to stock farming in the region, they are raised in great numbers and considered more important than other animals. Livestock population is unevenly distributed among the districts in the region as Table XXIII indicates.

TABLE XXIII: NUMBER OF DOMESTIC ANIMALS KEPT BY DISTRICT 1993/94, KILIMANJARO REGION

District	Cattle	Goats	Sheep	Donkeys	Pigs
Hai	94,753	88,454	33,237	3,976	-
Rombo	59,102	150,978	55,622	-	10,618
Moshi Rural	125,419	41,498	52,071	190,380	3,531
Same	123,259	110,893	37,345	5,918	-
Mwanga	82,915	98,515	28,629	2,104	724
Total	485,448	490,338	206,904	202,378	14,873

Source: Regional Agricultural and Livestock Development Office Kilimanjaro Region, Moshi.

Fig. 7: Domestic Animals kept by District , Kilimanjaro Region, 1993/94

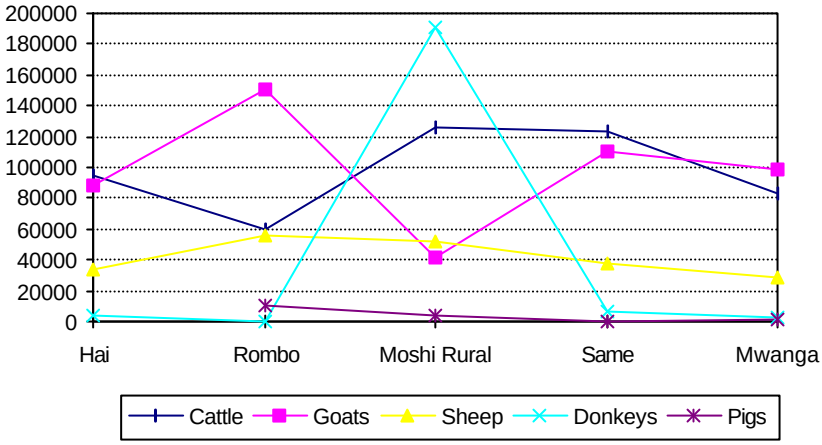
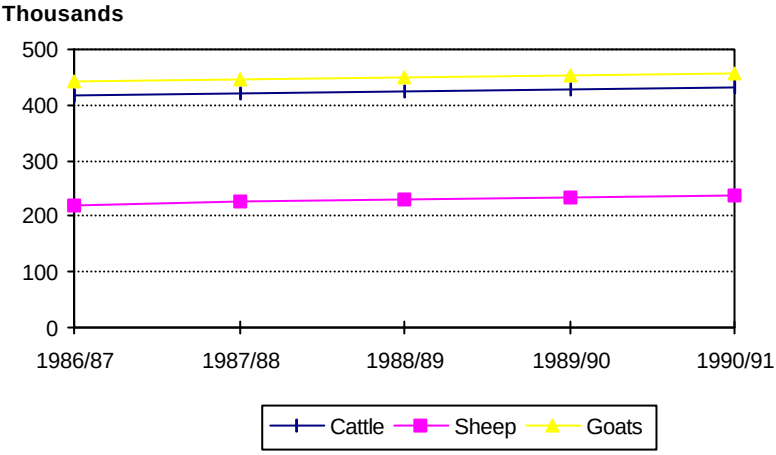


TABLE XXIV: LIVESTOCK POPULATION GROWTH 1986/87 - 1990/91, KILIMANJARO REGION

Year	Cattle	Sheep	Goats
1986/87	418,000	221,000	441,000
1987/88	421,000	225,000	445,000
1988/89	425,000	229,000	450,000
1989/90	428,000	234,000	454,000
1990/91	431,000	237,000	458,000

Source: Regional Commissioner's Office Kilimanjaro, Moshi.

Fig. 8: Livestock Population growth (Thousands)



In the highland zone where land is scarce, stall-feeding of cattle and goats is a common practice. Often the care of these animals is the duty of women, helped by children. The animals are fed with different types of feeds, the most common of which are banana leaves, and varieties of grass such as Guatemala grass, Guinea grass, Napper grass etc. In the lowlands cattle and goats graze on natural pasture, there are more cattle in this area than in the highlands and are kept mostly for beef. In the highland area, cattle are main source of manure for the bananas and coffee fields apart from being sources of milk, cooking fat, meat and hides. The majority of cattle raised in the highland zone are of Zebu breed orgin but crossed with Exotic breeds such as Jersey, Fresians, and Sahiwals. Pure exotic breeds are mostly kept in areas at altitudes of 1,300 meters or 50 above sea level. Cattle keeping in the region is of three ways: the first group of ownership is the large scale, mainly Institutions such as DAFCO, NAFCO, KARATA and KNCU 1984 Ltd. This group tends to herd the

mixed breeds of Zebu and Exotic. The second group is that which feeds livestock in stalls and in most cases only 2 cattle or about that number is raised depending on land availability. The main motive for this group is to serve as a source of manure for their crops and some milk for domestic consumption. The third group is found mainly in the lowlands and specializes in raising the short Horn Zebu type. The breed serves both for beef and milk and it is the type usually traded at livestock auction. For instance in 1985, about 24,600 cattle (Zebu) were auctioned.

One of the factors preventing an appreciable increase in the number of domestic animals is low livestock infrastructure facilities. Table XXV below shows livestock infrastructure facility status in Kilimanjaro Region. From the table it is dear that the available infrastructure is not adequate to cater for the number of domestic animals in the region. For instance 56 dips in the regions serve for about 8,679 cattle instead of 5,000 for each dip. Thus, an appreciable increase in the number of domestic animals would mean more investment in livestock infrastructure. The infrastructure in the region is highlighted in Table XXV.

TABLE XXV: LIVESTOCK INFRASTRUCTURE STATUS IN KILIMANJARO REGION

District	Type of Facility					
	Dips	Abattoirs	Crushers	Health Center	Hide/Skin shed	Cattle Dams
Mwanga	13	16	5	8	2	13
Hai	12	-	9	9	-	-
Same	9	4	6	9	2	14
Rombo	12	6	9	-	-	-
Moshi Rural	10	5	-	-	-	-
Total	56	31	29	26	4	27

Source: Mpango wa Maendeleo wa Mwaka 1990/91 - Kilimanjaro Region

The 1984 Livestock Census results revealed that only 40 percent of the cattle in the region were productive in terms of milk. Milk demand in the region is over and above the supply. The inadequacy of this animal product is mainly attributed by poor and inadequate pastures and health facilities. Heifer project International has been introduced in the region in an attempt to increase milk supply. The project is supported and sponsored by Religious Institutions in the Region. Table XXVI shows the extent of involvement of religious, institutions in dairy cattle farming.

TAB LE XXVI: INVOLVEMENT OF RELIGIOUS INSTITUTIONS IN DAIRY CATTLE FARMING- IN KILILIMANJARO REGION 1990

District	Dairy Cattle (No)	Sponsor
Moshi Rural	155	Lutheran Church and Romann Catholic
Rombo	20	Roman Catholic
Hai	16	Roman Catholic
Mwanga	104	Roman Catholic and Lutheran Church
Same	18	Lutheran Church and roman Catholic
Total	313	

Source: TFNC Report No.1231: The Situation Analysis of Food and Nutritional Problems in Kilimnjaro Region, 1990

2.4.2.1 **Livestck Services:**

NALERP (National Agriculture and Livestock Extension Rehabilitation Project) The project involves training of field staff and farmers through bi-monthly workshops, monthly training sessions, seminars, long and short courses, field days, study tours and demonstration. The region is divided into 47 and 409 Extension division and villages respectively.

Bull centres and Molasses Tanks:

The region has 39 Bull centres and 55 Molasses tanks; extending services to surrounding farmers. However, most of these have ceased to function due to various operational problems.

Artificial Insemination:

The region has 24 Artificial Insemination Centres, of which only 8 are operational.

District	Total No of Centres	No. Of Operating Centres
Moshi Rural	10	3
Same	2	-
Mwanga	3	1
Rombo	3	2
Hai	6	2
Total	24	8

Source: Regional Commissioner's Office, Kilimanjaro

Shortage of liquid Nitrogen, funds and transport facilties are the major operational problems.

Veterinary Centres and Cattle Dips:

There are 26 veterinary centres and 56 cattle Dips. However most of then have ceased to function due to operational problems.

Abattoirs and Slaughter Slabs:

The region has 31 abattoirs and 120 slaughter slabs shown below.

TABLE XXVII: ABATTOIRS AND LIVESTOCK SLAUGHTERS SLABS ARE IN KILIMANJARO REGION 1995.

Year	Abattoi	Slabs	Slaughters			
			Cattle	Shee	Goats	Pigs
1988/89	31	387	48832	2674	13565	6913
1989/90	31	388	36204	1755	6062	6357
1990/91	31	390	40650	2110	7658	4800
1991/92	31	390	36952	2641	6991	2834
1992/93	31	220	38167	2545	7163	2468
1993/94	31	220	40161	2642	6555	2763
1994/95	31	120	33729	3252	6570	2433

Source: Kilimanjaro regional Livestock Development Office, Moshi, 1995

TABLE XXVIII: HIDES AND SKINS FACILITIES AND SALES, KILIMANJARO REGION, 1996 HIDES AND SKINS

Year	Open frames	Hide sheds	Stores	Sales		
				Cattle	Goats	Sheep
1988/89	46	226	8	23498	11336	2965
1989/90	46	226	7	27746	8300	7326
1990/91	46	226	10	35405	12025	6378
1991/92	46	226	13	28227	1381	501
1992/93	46	226	15	44740	11701	3513

1993/94	46	226	23	52333	9137	1734
1994/95	46	226	11	36363	9774	3717

Source: Regional Livestock Development Office Moshi, 1995

2.4.3 Natural Resources:

Kilimanjaro region is rich in natural resources. Rare tree species such as astigmia "Msoo" are found no where else in the world except in Rau Forest in Kilimanjaro region. Even the largest "Mvule" tree in the whole country (Tanzania) is again found in the Rau forest in Kilimanjaro region. Mvule tree is famous for producing hard wood mostly preferred in furniture making activities. Kilimanjaro also as a mountain is a tourist attraction earning the country substantial foreign currency. Other area of tourist attraction include, the Mweka caves used during war time period as hide-outs and the mwariko Art Gallery, where historical materials are displayed and other cultural arte facts kept.

2.4.3.1 **Forestry:**

The region has both natural and plantation forests. About 139,832 hectares of land fall under natural forests mostly in the highland zone, where the famous tree such as Mvule, Mkanga and Msoo are also found. Natural forests can be seen also in the lowland areas of Rau, Kahe I and kahe II Forest Reserves in Moshi (R) district. Table XXIX provides good insight into where natural forests can be found in the region.

TABLE XXIX: SPREAD OF NATURAL FORESTS IN KILIMANJARO REGION

District	Name of Forest	Area (Hect)
Moshi Rural	Kilimanjaro Forest Reserve	107,828.0
	Rau Forest Reserve	20.0
	Kahe I Forest Reserve	885
	Kahe II Forest Reserve	202
Same	Kisomo	70.0
	Chome Forest Reserve	14,285
	Vumari Forest Reserve	1,825.7
	Chambo Forest Reserve	5467
	Kaizu Forest Reserve	3,070.1
	Karangare Forest Reserve	321.8
	Chungwani Forest Reserve	92.3
	Kakoka Forest Reserve	78.1
	Kaukoma forest Reserve	74.5
	Gonja forest Reserve	78.8
	Magoma	78.8
	Total Reserve Area	134,377.1

Source: Kilimanjaro Regional Natura Resources office Moshi, 1995

In addition to the above mentioned forest reserves, plans are under way to declare the following areas to be National Forest Reserves:-

- Mwalla - 1,373 ha.
- Kalumwenda - 583 ha.
- Kamwalla I - 117 ha.
- Kamwalla II - 293 ha.
- Kiverenge - 2,155 ha

The areas of Mwalla, Kaluwenda, Kamwalla I Kamwalla II and Kiverenge are to be declared Forest Reserves so as to enable the government protect natural forests which are increasingly being encroached . Being forest reserves, hardwood supply would increase as a result of being protected and river sources will be protected as a result.

Plantation forests are being established in the region in order to check the devastating man activities of indiscriminate tree cutting and livestock overgrazing

The afforestation programme has been growing year after year following deliberate efforts made by the government enhanced by self-awareness of the local people and the value they attach to the importance of trees. The programme raises seedlings up to required age and then distributed to needy institutions (villages, schools, etc) and individual persons. The table below shows the amount of tree seedlings raised and the number of hectares planted from 1985/86-1990/91 in the region.

TABLE: XXX: SEEDLINGS RAISED AND HECTARES PLANTED, IN KILIMANJARO REGION, 1995

Years	Seedling	Area Planted (Ha.)
1985/86	1,030,000	515.0
1986/87	1,575,000	787.0
1987/88	3,406,000	1,703.0
1988/89	4,757,000	2,368.6
1989/90	4,432,060	2,417.0
1990/91	3,767,687	2,508.0

Source: Kilimanjaro Regional Natural Resources Office 1995

Although the number of hectares planted has been increasing since 1985/86 (table XXX) still a lot more has to be done to keep pace with the fast growing needs for forest products. Kilimanjaro region will soon face serious environmental degradation if more trees are not replaced, and livestock not reduced to the level land carrying capacity can sustain.

Between 1976 and 1991 the region raised about 28.6 million seedlings. The seedlings were distributed to individuals, schools, private institution, villages, NGO's and Government department as indicated in Table XXXI. Most of the seedlings were raised from centralized Government nurseries and distributed free of charge.

There are 19 operating government nurseries, 9 operated by Roman catholic church and 2 by Tanzania Environmental Society (a non Government Organisation working in the region). In high potential areas the survival rate for plantations of individuals is over 80%, in communal areas it is about 60% while in schools it is over 70%. In the marginal areas in communal lands the survival rate is below 50% while in schools it is above 55%.

TABLE XXXI SEEDLINGS RAISED IN THE REGION FROM 1976-1994 BY DISTRICTS.

District	Total Seedlings Raised	Distribution				
		School and Institutions	Villages	Individuals	Non-Government Organisation	Department
Moshi (R)	3,377,235	1,222,620	124,227	1,643,801	139,557	24,675
Moshi (U)	813,768	20,600	-	233,449	12,400	247,229
Mwanga	1,627,500	536,150	144,230	574,680	115,630	246,810
Same	29,994,442	1,133,606	108,660	1,552,675	141,045	58,362
Hai	14,700,359	2,981,118	3,469,750	3,599,515	240,995	4,408,981
Rombo	5,113,825	1,436,335	154,850	230,076	900,375	321,500
Total	28,617,039	7,330,429	4,001,717	9,904,885	1,550,002	5,829,677

Source: Regional Natural Resources Officer Kilimanjaro, Moshi, 1995

2.4.3.2 **Wildlife:**

Kilimanjaro is one of the regions that is endowed with richness in terms of wildlife. The Kilimanjaro National Park is a home of high altitude wildlife and a variety of insects,

Mkomazi game reserve including Lotatema and Ruvu Controlled areas are verty impotant as sanctuaries for Savannah wildlife; the majority of species found are the bovine and few carnivorous; the

number of bovine out numbers the carnivorous, and that is why a systematic cropping is conducted by Wildlife Division and Tanzania wildlife Co-operation (TAWICO). Wildlife game reserve covers an area of 7170 sq km. Of land distributed as table XXXII below indicates.

TABLE XXXIII: LAND AREA FOR GAME RESERVE BY DISTRICT, KILIMANJARO REGION

District	Area	Area (Sq kms)	Conservation Status
Same	Mkomanzi	3234	Game Reserve
	Kalimawe	300	Game Controlled area
	Ruvu	1000	- do -
Moshi (R)	Mt. Kilimanjaro	1078	Game Reserve/forest
	Kilimanjaro National Park	758	Game Controlled area
Hai	Sanya/Leta Tema	800	Game controlled area
	Total	7,170	

Source: Regional Natural Resources Office - Kilimanjaro, Moshi

Aquatic wildlife is also abundant, such as crodiles mostly found in Pangani, Nyumba ya Mungu Dam and Lake Jipe.

In general wildlife conservation in Kilimanjaro region is being made difficult by several factors including shortage of necessary equipments for wildlife conservation and encroachment for more land by people around the reserve.

2.4.3.3 **Fishing:**

Fishing industry is not a common activity in the region due to lack of big lakes or rivers with enough fish. However, some minor fishing activitities goes on at the Nyumba ya Mungu Dam, Kilimawe, Mworoworo, Diondara and small lakes of Jipe and challa as well as in rivers of Kikuletwa and Ruvu. The fish from these lakes and rivers is of great importance to the region particularly in areas where protein food is scarce.

Table XXXIII and XXXIV highlight fishing activities in the region.

TABLE XXXIV: FISH INDUSTRY STATISTICS IN KILIMANJARO REGION, 1989 - 1991

Year	No. of fisher-men	No of fishing Vessels	Fish Catch (Tons)	Value (00 Tshs)
1989	11,703	485	1,642	54,000.0
1990	1,270	583	2,032.5	40,627.0
1991	850	632	1,617.1	30,840.0

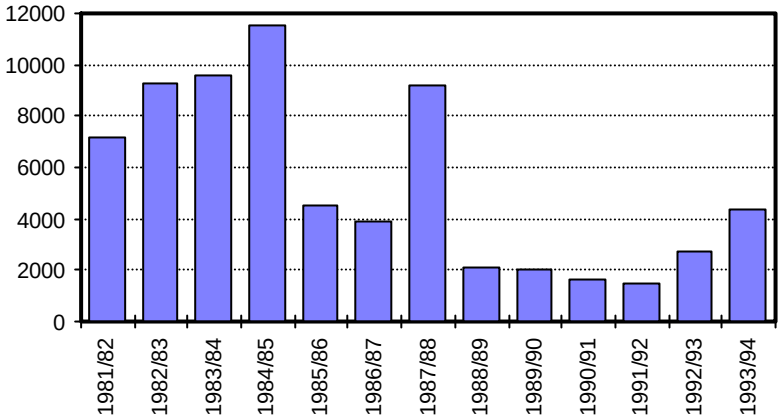
Sources: Ministry of Natural Resources and Tourism, Fisheries Division, Dar es Salaam

TABLE XXXIV: FISH CATCH IN KILIMANJARO REGION FROM 1981/82 - 1993/94

Year	Quantity (Tons)	Change (%)
1981/82	7148.5	-
1982/83	9245.2	29.3
1983/84	9546.5	3.4
1984/85	11562.9	21.7
1985/86	4539.6	-60.7
1986/87	3888.0	-14.3
1987/88	9218.3	7.8
1988/89	2118.1	-49.82
1989/90	2032.5	-4.0
1990/91	1617.1	-20.0
1991/92	1468.8	-9.2
1992/93	2749.5	8.7
1993/94	4380.2	5.9

Source: Regional Natural Resources, Fishery Division Kilimanjaro Region, Moshi, 1995

Fig. 10: Fish Catch in Kilimanjaro Region, 1981/92 - 1993/94



Nyumba ya Mungu Dam which is about 180 sq km. And 41 meters deep provides the main fishing ground for fishermen in the region. However, if this Dam is not well maintained sooner or later it may loose its original water storage capacity due to silting. In addition, the Ruvu (Pangani) and Kikuletwa rivers which constitute the main water source into the Dam are no longer flowing into the Dam with adequate water, hence fish survival put to a threat.

These problems to a large extent, have reduced the volume of fish catch. It has been reported that fish catch dropped drasticallly to 1,468 tons in 1991/92 from 11,500 tons recorded in 1984/85. Apart from problems facing the Dam, fishernmen too lack modern fishing gear and credit facilities to enable them sustain their activities.

2.4.3.4 **Beekeeping:**

Bee-keeping has great potential in Kilimanjaro region especially in Mwanga, Same, Hai and in some parts of Moshi Rural District. Potentiality in these areas is enhanced by availability of the Acacia woodlands. Table XXXV shows the magnitude of bee-keeping industry in the region.

TABLE XXXV: BEE-KEEPING PRODUCTS AND VALUE IN KILIMANJARO REGION FROM 1983-1994

Year	Modern Bee Hives (No)	Traditional Bee Hives (No)	Bees Wax		Honey	
			Kgs.	TShs.	Kgs.	TShs.
1983	146	50,074	1221	37,850	125,850	4,225,000
1984	233	52,086	4117	65,760	185,901	5,591,674
1985	241	125,850	1485	17,385	121,638	4,456,360
1986	258	137,690	53	4,830	5,471.8	2,852,800
1987	262	143,967	74.5	4,845	53,112	5,117,960
1988	296	140,607	87	7,260	97,644	8,546,000
1989	350	140,607	220	88,000	115,000	4,600,000
1990	563	147,818	347	38,800	142,150	5,868,000
1991	815	184,922	1004	1,600	213,950	8,558,000
1992	740	208,882	728	36,800	274,900	109,960,000
1993	778	218,882	2500	1,500,000	27,500	16,500,000
1994	778	218,882	1200	840,000	30,000	18,000,000

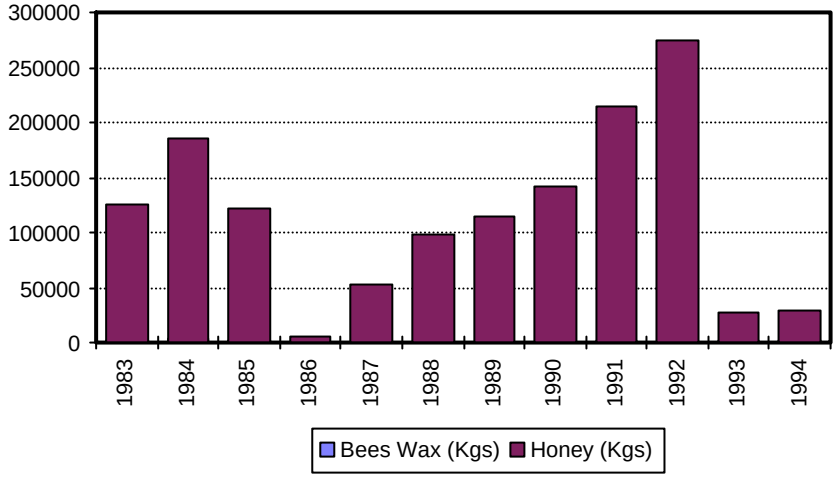
Source: RDD'S Offise, Kilimanjaro Region, 1994.

TABLE XXXVI: NUMBER OF BEE HIVES BY DISTRICT, KILIMANJARO REGION, 1995

District	Modern Beehives	Traditional Beehives
Mwanga	22	95,000
Moshi (Rural)	400	67,207
Same	300	28,115
Hai	357	22,330
Rombo	-	-
Total	1079	221,212

Source: RDD's Office, Kilimanjaro Region, 1995

Fig. 11: Production of Bee-wax and Honey (Tons) in Kilimanjaro region



It is estimated that there were about 29,148 Bee-keepers in the region whose total honey production was 274,900 kgs (1992 production) and beewax was recorded at 728 kgs. About Tshs.109,960,000 was earned through sales of honey and Bee wax. Bee-Keeping industry if taken seriously it could turn out to be one of the major foreign exchange earning sector in the region.

2.5 Manufacturing

The manufacturing industry is growing fast and it is increasingly contributing more to Regional GDP. Tables XXXVII(a) - (b) and XXXVIII highlight industrial output growth in terms of value of goods produced from 1987 - 1990 and type of goods generated in the region.

TABLE XXXVIIa: INDUSTRIAL OUTPUT (000'SHS), KILIMANJARO REGION 1987 - 1990

Industry Activity	Year (000 Shs)			
	1987	**1988**	**1989**	**1990**
Mining	35421	35421	19329	19329
food manufacturing	456399	69898	2775646 6	282465
Textile and Leather	266286	40025	662467	77844
Wood products	129248	16192	523574	501799
Paper and paer product	10432	64326	673886	941740
Chemicals	520910	50436	857476	960271
Machinery	196760	19216	360148	392035
Electricity	156373	18935	440000	664461
Other Manufacturing	-	-	59288	68143

Source: Kilimanjaro Regional Statistics Abstract, 1993

Due to land scarcity, young people are encouraged to engage themselves in small and medium industrial production:

TABLE XXXVIIb: SMALL AND MEDIUM SCALE INDUSTRIES OPERATED IN KILIMANJARO REGION BY DISTRICT, 1997

Type of Industry	Mwanga	Rombo	Moshi ®	Moshi (U)	Hai	Same
Milling	38	76	113	27	55	72
Sisal production	1	-	-	-	-	2
Oil Mills	2	4	5	6	4	2
Saw Mills	9	16	-	19	8	9
Metal Works	5	3	17	24	4	8

Milk Production	-	-	-	-	1	-
Malt	-	-	-	1	-	-

Source: Regional Commissioner's Office, Kilimanjaro, Moshi.

TABLE XXXVIII: INDUSTRIES OPERATED IN KILIMANJARO REGION

Industry		Activity
1.	Kibo Match Group Ltd.	Pulp and paper Match Box
2.	Himo Tanners	Leather Goods
3.	Bonnite Bottlers	Soft Drinks
4.	African Flower Industry	Mosquito Coiled
5.	Abcon Chemical Ltd.	Chemicals
6.	SIDO	Common Foundry facility
7.	Kilimanjaro machine Tools Ltd.	Spare parts
8.	Moshi Textile Industries	Textile Products
9.	Kibo Paltry Company Ltd.	
10.	Kilimanjaro Utilization	Furniture
11.	T.P.C. Ltd.	Sugar
12.	Karimjee Agricultural Ltd.	Sisal Products
13.	Tanzania Coffee Board	Coffee Roasting
14.	ELCT Northen Diocese	Printing Presee
15.	Super Coatings	Paints
16.	Kilimanjaro Distillers	Mineral Water
17.	Moshi Pesticides Ltd.	Chemicals
18.	Moshi Leather Industries	Leather Goods
19.	K.N. Tarimo and Sons	Coffee, Roasting and Gemstone

20.	Meatheru Industries	Metal Works
21.	KAPS Industries	Timber Works
22.	Kibo Industries Ltd.	Artificial Leather
23.	TAN-OPTIC CO. LTD	Glasses, spectacle
24.	Northern Packing Co. Ltd.	Packing Boxes
25.	Kilimanjaro Auto & Machine Enq.	Spare parts
26.	Modern Retread & Roadways Ltd.	Retread of Tyres
27.	HAZ Industries	Sweet
28.	Tanzania Bag Industries	Sisal bags
29.	AMOCO Industries	Sports Equipments
30.	Mawenzi Products Ltd.	Tomato sauce, Juice
31.	Hussein Industries	Soap
32.	Moroline Line	Cosmetics
33.	Kilimanjaro Sawmill	Sawmill, timber
34.	Zabira Bottlers 1991 Ltd.	Soft Drinks
35.	COMFY Ltd.	Sunflower Oil, Wheat Flower, Cotton Oil
36.	Packing Stationery	Exercise Books
37.	Kiboroloni Oil	Sunflower Oil
38.	Shah Industries	leather Goods
39.	Tanscart Timber & Co.	Mobile Sawmill
40.	Kilimanjaro Electro Planting	
41.	Interchen Pharmacy Ltd.	Human & Animal Drugs

SECTION III

3.0 ECONOMIC INFRASTRUCTURE

3.1 Introduction:

Comparatively, Kilimanjaro region is well served by a network of roads which link the rural population clusters and also provides easy communication with the surrounding areas. In addition, there is a reliable railway line from Dar es Salaam to Moshi (Municipality of the region) via Tanga, ending up in Arusha Town. Another railway line extends from Moshi to Voi in Kenya at the border. The region also enjoys good Air service provided through Kilimanjaro International Airport (KIA) and Moshi Airport. With regard to power supply, Kilimanjaro region is one of the few regions in the country benefitting from Japanese Rural Electrification Programme, which has made possible the electrification of almost all business centers in the region.

3.2 Roads Network

There are three classes of roads in the region, namely trunk roads, regional roads and feeder/district roads. Administratively, trunk roads fall under the Ministry of Works, while the Regional, District and feeder roads are the responsibilities of the Regional Government and District Authorities respectively.

Although, the road density of Kilimanjaro Region is fairly developed compared with that of other parts of the country, it varies considerably between different districts within the region. It

is low in terms of area in the Pare district while in Moshi district it is low in terms of population. The total mileage of roads in the region is shown in Table XXXIX where as Table XL shows the same by district.

TABLE XXXIX: ROAD NETWORK IN KILIMANJARO (KMS)

Type of Roads	Mwanga	Same	Rombo	Hai	Moshi Rural	Moshi	Total
Trunk Roads							
- Tarmac	50	97	-	-	61	60	295
- Gravel	-	94	44	-	7		145
-Earth					-	200	200
Total (Kms)	50	191	44	27	68		640
Regional Roads							
- Tarmac	-	-	-	46	42		88
- Gravel	53	-	-	33	80		166
- Earth	140	163	108	30	112		553
Total (Kms)	193	163	108	109	234		807
D/Feeder Roads							
- Tarmac/Gravel	-	-	-	3	19		22
- Earth	263	414	618	387	568		2,250
Total (Kms)	263	414	618	390	587		2,272
Total Mileage(Kms)	506	768	770	526	889	260	3,719

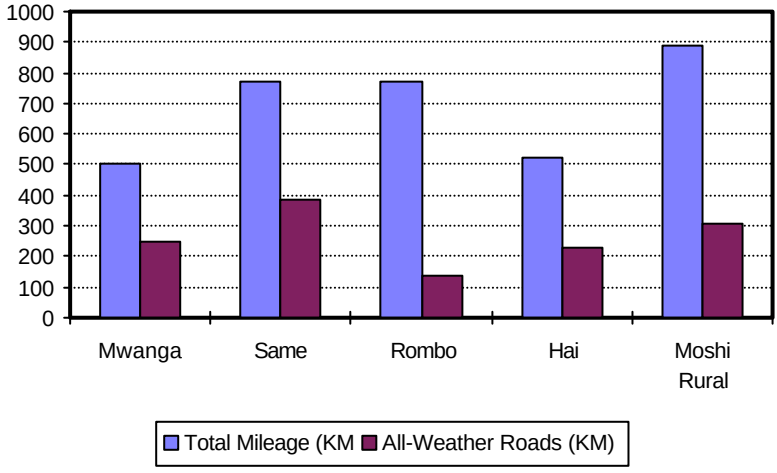
Source: Regional engineer's Office, Kilimanjaro; Moshi

TABLE XL: TOTAL ROAD MILAGE AND ALL WEATHER ROADS BY DISTRICT

District	Total Mileage (KM)	All-Weather Roads (KM)	All Weather Roads as % of Total
Mwanga	506	246	48.6
Same	768	385	50.1
Rombo	770	136	17.7
Hai	526	226	43.0
Moshi Rural	889	304	34.1
Total	3459	1297	37.5

Source: Regional Engineer's Office Kilimanjaro

Fig. 11: Total Road Mileage and all-weather road by District



KILIMANJARO REGIONAL ROAD NETWORK

In general, Kilimanjaro region has more tarmac roads than any other region in the country although their quality is poor due to lack of frequent maintenance. The problem with many roads in Kilimanjaro region is poor drainage system caused by lack of culverts.

3.3 Railways:

The Dar es Salaam Tanga railway line was built in the 1920's and later extended to Arusha via Moshi. This railway line is both for goods and passenger trains and serves several stations in Kilimanjaro region. There is also another railway line from Moshi to Voi. This line was very important during East Africa Community as it was the only one that linked Tanzania with both Kenya and Uganda, (the three countries that constituted the "Community". The Moshi/Tanga Dar es Salaam route is mainly used to transport bulky cargo such as timber, coffee, maize, beans and phosphate products. However, passenger train between Moshi and Dar es Salaam faces a cut-throat competition with road transport which has of late proved to be very efficient in time saving and reliability.

3.4 Air Transport:

Kilimanjaro region is served by the Kilimanjaro International Airport (KIA) and Moshi Airport. the KIA was built mainly to cater for international flights with a view to easy tourist accessibility to the Northern Tourist Circuit. It also caters for domestic flights to various destinations in the country. The Moshi

Airport situated a few kilometers from Moshi Municipality mainly caters for non-commercial and charter air planes.

3.5 Electricity:

Electricity is most needed as an energy for development in a modern society and where it is lacking it becomes hard to engage in serious industrial development. The region's electricity is supplied by both Hydro and Thermal energy. Hydroelectricity is drawn from the National Grid (Kidatu/Hale Grid system supplying 13.0 MW), Nyumba ya Mungu Station supplying 7.4 MW and Kikuletwa Station supplying 1.16 MW. Thermo electricity is mainly supplied by private institutions for their institutional needs. The largest Therm plants are stationed at Kome Hospital producing 92.0 KW, Kibo Match Factory producing 160.0 KW., KCMC Hospital producing 92.0 KW and Sikh Saw Mills producing 84.0 KW. All the five districts and one Municipality are well served with hydro-electric power, with total number of 15,826 consumers. The largest part of electricity is consumed by medium and light industries distributed all over the region.

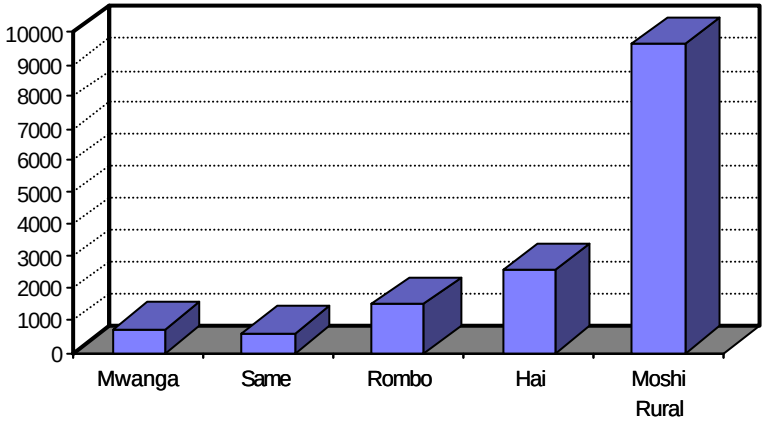
Out of 402 registered villages in the region, 116 villages, or 29.9% of all villages in the region are supplied with electricity. Thus Kilimanjaro region commands a higher percentage of electricity distribution to villages and private households compared to other regions. The table below shows the number of villages and households supplied with electricity in the region.

TABLE XLI: HOUSEHOLDS WITH ELECTRICITY SUPPLY 1994, KILIMANJARO REGION

	Electricity Supply					%
District	**Supplied**	**Not Available**	**%with electricity**	**No of Villages**	**With Electricity**	
Rombo	686	34943	1.9	57	24	42.1
Mwanga	555	15929	3.4	58	22	34
Same	1497	28831	4.9	72	16	22.2
Moshi (R)	3825	59684	6.0	150	26	17.3
Hai	2561	34753	6.9	65	26	40.0
Moshi (U)	9686	12950	42.8	-	-	-
Total	18,810	187,095	9.1	402	114	28.9

Source: Regional Commissioners office - Kilimanjaro

Fig. 12: Number of Village with electricity Supply by District 1994



3.6 Telecommunication / Telephone

The region is served by a total of 18 telephone exchanges two (2) of which are automatic and the remaining 16 are manual. However, due to the undergoing programme of restructing

telecomms, manual telephone exchanges in Marangu, Same, Mwanga, Hai and Mkuu will be replaced by digital automatic exchanges, and wireless local loop (WILL) will be introduced at Marangu, Mwanga, Same, Mkuu and Hai.

3.7 Fuel Wood:

Fuel wood is another source of energy in the region although it has disastrous effects on the environmental eco-system. Like other parts of the country fuel wood still becomes the only dependable source of energy for cooking and other domestic energy in both rural and urban centre in Kilimanjaro region. Detailed fuel wood consumption survey in the region has not been adequately carried out. However, casual observation indicates that the consumption is 2.0 m^3 per capita per annum. This figure is within the national average of fuelwood consumption which stands at 2 m^3 per capita per annum. In the highlands where temperatures are generally low, substantial amounts of fuelwood are used for heating as well as for brewing local brew (Mbege). In the low lands fuelwood is used for fish-smoking, brick-burning, charcoal burning and pottery activities. With the population of about 1.2 million (1988 Census) fuelwood demand stands at 2.4 million m^3 of round wood. Fuelwood supply in the region was given as follows in 1988:-

i) Fuelwood from farm residue.....510,000m^3
ii) Fuelwood from Savanna Woodlands.....110,000m^3
Total Supply.....620,000m^3

Given a huge amount of wood requirement for fuel, if deliberate effort is not taken either to provide alternative energy sources or

embarking on extensive afforestation programs, the over felling of trees may soon or later lead to environmental degradation.

SECTION IV

4.0 SOCIAL SERVICES:

4.1 EDUCATION SECTOR:

4.1.1 Introduction:

Kilimanjaro Region has a bigger number of both primary and secondary schools than other regions in the country. At independence (1961) the region had only 35 and 7 primary and secondary schools respectively. By the mid of 1998 the number of primary schools was 707 an increase of 2,020%.

The increase has been more pronounced in the districts of Same, Hai, Moshi rural and Rombo districts, see Table XLII.

TABLE: XLII PRIMARY EXPANSION SCHOOLS 1961 - 1998

District	No. of Primary School 1961	No. of Primary School 1985	No. of Primary School 1995	No. of Primary School 1998
Hai	6	133	139	140
Rombo	5	119	123	122
Mwanga	3	85	89	89
Same	6	134	140	141
Moshi Rural	14	194	195	191

Moshi Urban	1	20	25	24
Total	35	685	711	707

Source: : Kilimanjaro Region Education Office, 1998

TABLE: XLIII(a) DISTRIBUTION OF PRIMARY SCHOOLS AND PUPILS BY DISTRICT KILIMANJARO REGION 1998

District	No. of Pupils	No. of Schools	No. of Villages
Rombo	50,991	122	57
Moshi Rural	74,836	191	150
Hai	41,568	140	65
Moshi Urban	19,062	24	-
Same	40,964	141	72
Mwanga	26,130	89	58
Total	253,551	707	402

Source: Regional Education Office, Kilimanjaro, 1998

The five rural district councils and one municipality have a total of 707 primary schools. Thus a good number of villages among 402 villages have on average 2 primary schools each. In effect, each village in Rombo, Hai and Same rural districts has two primary schools.

Table XLIII(a) shows that Moshi rural has more primary school is the region and Moshi Urban the least. However there are more people in Moshi Urban district per school, 4,027/school (Table XLIII(b)) Mwanga which is the second least in the number of

schools has the best proportion of 472 people per primary school in the district, on the average the region has 1562 people/school.

TABLE XLIII(b): DISTRIBUTION OF PRIMARY SCHOOLS BY DISTRICT KILIMANJARO REGION, 1998

District	Population 1988	Number of Schools	Population per School
Rombo	200,889	122	1,647
Mwanga	42,004	89	472
Same	169,733	141	1,204
Moshi Rural	342,896	191	1,795
Hai	196,901	140	1,406
Moshi Urban	96,645	24	4,027
Total	1,104,068	707	1,562

Source: Regional Education Office, Kilimnjaro

Kilimanjaro region's population/school ratio ranks best among several regions as illustrated here below in 1995. It is best served with number of primary schools.

Table Region

	Kagera	Arusha	Mwanza	Shinyanga	Tanga	Kilimanjaro
Population School Ratio	2,396	2,992	2,740	2,401	2,329	1,575

4.1.2 Enrolment:

At independence the enrolment rate in the region was as low as 54%. With the implementation of the nation policy of Universal Primary Education the enrolment rate rose to 103.5% in 1988 and then fell to 96.13 in 1998. The enrolment rates for the years 1961, 1988, 1995 and 1998 are indicated by Tables XLIV-XLVI below.

TABLE XLIV: EXPANSION OF PRIMARY SCHOOLS AND ENROLMENT KILIMANJARO REGION 1967, 1988, 1995 AND 1998

	1967	1988	1995	1998
No. of Primary Schools	35	696	701	707
Enrolment Rate	54%	103.5%	91.6%	96.13
Number of Pupils	9,450	224,159	243,049	253,551

Source: Regional Education Office, Kilimanjaro.

TABLE: XLV: KILIMANJARO REGION BY DISTRICT PRIMARY SCHOOL ENROLMENT RATE AND TARGETS (1988)

District	No. of Primary School	Pupils STD. I-VII	Enrolment target	% of Enrolment target to No. Of Children
Moshi (U)	20	12,780	13,401	95.4
Moshi (R)	194	73,734	73,734	100.0
Hai	139	46,610	38,200	122.0
Rombo	123	34,100	35,133	97.1
Mwanga	86	21,713	20,913	103.8
Same	134	35,222	35,219	100.0
Total	696	224,159	216,600	103.5

Source: Regional Education Officer, Kilimanjaro.

Student enrolment reached its peak in 1988, when the region registered an average enrolment rate of 103.5 Table XLV above indicates that Moshi Rural, Hai, Mwanga and Same districts in 1988 managed to achieve the targets of 100% enrolment rate.

TABLE: XLVI: STD. I ENROLMENT RATE BY SEX AND DISTRICT, KILIMANJARO REGION, 1998

District	Boys	Girls	Total	% Enrolled
Moshi Rural	6,057	5,921	11,978	108.49
Hai	3,545	3,485	7,030	81.0
Rombo	4,126	4,183	8,309	115.0
Mwanga	2,118	1,983	4,101	75.0
Moshi Urban	1,372	1,407	2,779	86.12
Same	3,385	3,295	6,680	97.0
Total	20,603	20,274	40,877	96.13

Source: Regional Education Office Kilimanjaro, 1998

It is observed in table XLVI above that Rombo and , Moshi Urban Districts tended to enroll more girls in STD.I in 1998 than Hai, Same, Mwanga and Moshi Rural Districts. Nobody is sure yet why this was so, but it could have been caused by either having more girls of school going age in 1998. It is also observed in the same table that the enrolment rate was good in 1998 in all districts except in Mwanga, where it was only 75 percent against 115.0 percent recorded in Rombo or 108.5 percent registered in Moshi Rural district.

TABLE XLVII: ENROLMENT (THOUSANDS) BY SEX IN PUBLIC PRIMARY SCHOOLS IN KILIMANJARO REGION 1987 - 1991

Sex	Year	Class							Total
		I	II	III	IV	V	VI	VII	
Boys	1987	19	16	15	16	13	14	12	105
	1988	18	18	16	16	14	12	12	106
	1989	19	17	16	15	14	14	11	106
	1990	19	18	18	17	14	14	11	111
	1991	21	18	18	18	15	13	12	116
Girls	1987	19	16	16	16	13	13	13	106
	1988	18	18	17	16	14	14	13	107
	1989	18	18	17	16	14	14	13	110
	1990	18	18	17	17	14	14	14	112
	1991	20	18	17	17	15	14	14	115
Total	1987	38	32	31	32	26	27	25	211
	1988	36	36	31	31	29	25	25	213
	1989	37	35	33	31	28	28	24	216
	1990	37	36	35	34	28	28	25	223
	1991	41	36	35	35	30	28	26	231

Source: Education and Training Statistics, 1991.

TABLE: XLVIII: ENROLMENT IN PUBLIC PRIMARY SCHOOLS IN KILIMANJARO REGION BY DISTRICT, SEX AND CLASS 1991

District	Sex	Class							Total
		I	II	III	IV	V	VI	VII	
Rombo	Boys	6057	6157	5629	5076	5173	4390	4538	37020
	Girls	5921	6044	5811	5407	5308	4627	4698	37816
	Total	11978	12201	1144 0	1048 3	1048 1	9017	9236	74836
Mwanga	Boys	3545	3394	3288	3074	2916	2216	2493	20926
	Girls	3485	3273	3195	2894	2745	2416	2589	20642
	Total	7030	6667	6483	5968	5661	4677	5082	41568
Same	Boys	4126	3870	3556	3181	3013	2747	4044	24537
	Girls	4183	3914	3717	3362	3165	3002	5111	26454
	Total	8309	7784	7273	6543	6178	5749	9155	50991
Moshi (R)	Boys	2118	2111	1983	1984	1810	1534	1661	13201
	Girls	1983	2022	1918	2017	1805	1586	1648	12979
	Total	4101	4133	3901	4001	3615	3120	3309	26180
Hai	Boys	3178	3520	3192	3141	2676	2484	2644	2835
	Girls	3069	3402	3023	2943	2592	2463	2637	20129
	Total	6247	6922	6215	6084	5268	4947	5281	40964

Moshi (U)	Boys	1372	1520	1533	1361	1328	1144	1160	9418
	Girls	1403	1475	1550	1431	1337	1270	1178	9644
	Total	2775	2995	3083	2792	2665	2414	2338	19062
Total	Boys	20396	20572	1918	1781	1691	14515	16540	125937
	Girls	20044	20130	1	7	6	15409	17861	127664
	Total	40440	40702	1921	1805	1695	29924	34401	253601
				4	4	2			
				3839	3587	3386			
				5	1	8			

Source: Regional Commissioner's Office - Kilimanjaro.

In most primary schools in almost all regions, the number of girls per class tend to decrease as they proceed to class VII. In most cases too, one finds that the decrease in the number of girls in schools begins in class V, but in Kilimanjaro this is not the case as evidenced by table XLVIII. It is observed that the number of boys enrolled exceeded the number of girls only in lower classes of I, II, III and IV. The trend changed from Class IV, where the number of boys dropped from 16,916 in Class V to 14,515 in Class VI, while the number of girls dropped from 16,952 in class V to only 15,409 in class VI. It has been a common phenomenon to find a large number of girls dropping out from higher classes of V, VI, and VII in many regions due to either pregnancy or forced into marriage by relatives or simply for truancy reasons. Surprisingly enough, these reasons seem not to apply very much in Kilimanjaro region as explained above. In this regard, some people may wish to find out why girls in primary schools in Kilimanjaro are more serious with schooling than those in other regions. However, the most striking thing about the enrolment in primary schools is that the number of girls has tended to exceed the number of boys in 1987, 1988 and in 1990, suggesting more stability in girls in school attendance than boys.

Fig. 13: Total Enrolment in Public Primary Schools in Kilimanjaro Region 1987/91

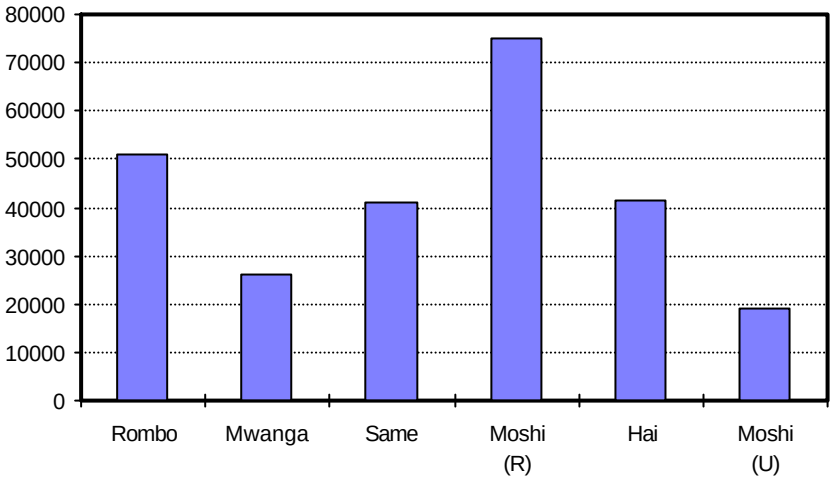


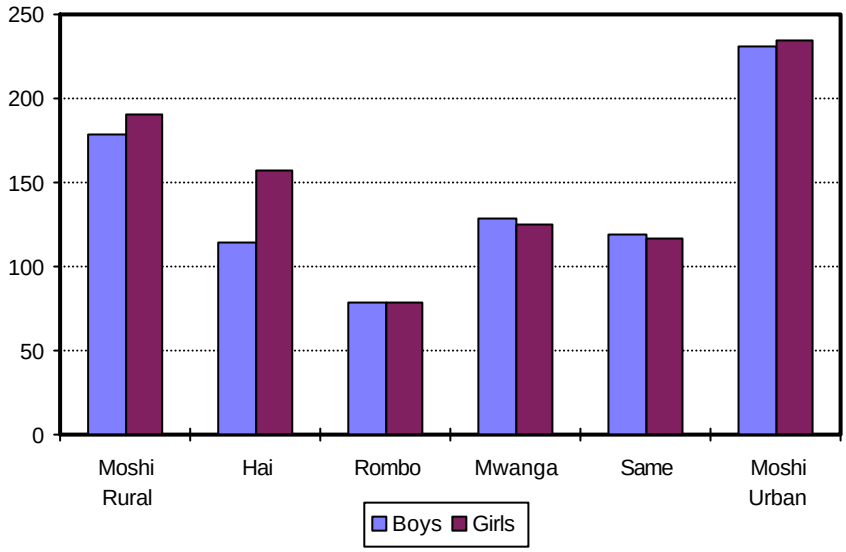
TABLE XX: PUPILS SELECTED FOR FORM I BY SEX AND DISTRICT, KILIMANJARO REGION, 1997

District	Number. of Candidates			Number of Selected			
	Boys	Girls	Total	Boys	Girls	Total	% Selected
Moshi Rural	4206	4496	8702	420	424	844	9.7
Hai	2248	2478	4726	240	277	517	10.9
Rombo	3704	3057	7661	301	295	596	7.8
Mwanga	1565	1564	3129	334	323	657	20.9

Same	2287	2294	4584	518	512	1030	22.5
Moshi Urban	1100	1143	2243	25	236	486	21.7
Total	1511	15935	31045	2063	2067	4130	13.3

Source: Regional Education Office, Kilimanjaro

Fig. 14: Pupils Selected For Form I by Sex and District, Kilimanjaro Region, 1994



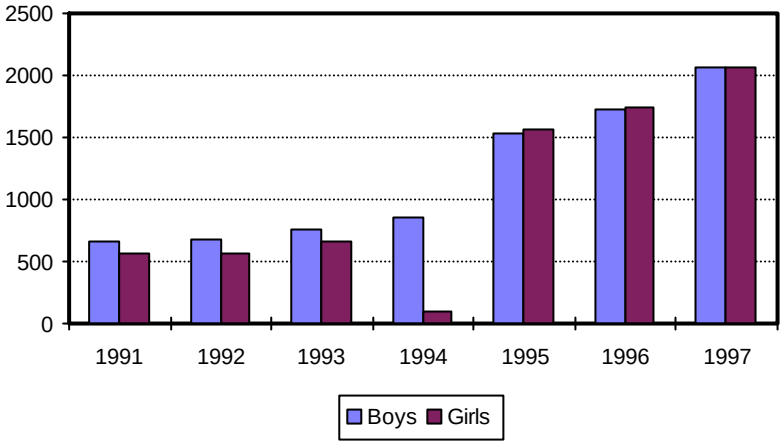
The number of girls selected to join public secondary schools in the region in 1997 exceeded the number of boys by 4, this again reflects stability and seriousness with which education for girls is taken in the region.

TABLE: L: NUMBER OF PUPILS WHO PASSED STANDARD VII EXAMS AND SELECTED FOR FORM I IN KILIMANJARO REGION 1991/97

Year	Number of Candidate			Number Selected			Percent selected
	Boys	Girls	Total	Boys	Girls	Total	
1991	12062	12842	24904	669	558	1227	4.9
1992	12470	12995	25465	674	571	1245	4.9
1993	13046	13995	27041	756	662	1418	5.22
1994	13237	14155	27392	850	91	1751	6.4
1995	13293	14407	27700	1536	1562	3098	11.1
1996	13558	14593	28151	1729	1742	3471	12.3
1997	15110	15935	31045	2063	2067	4130	13.3

Source: Kilimanjaro Regional Education Office, 1998

Fig. 15: Number of pupils who passed STD VII exams and selected for Form I in Kilimanjaro Region 1991/97


2500
2000
1500
1000
500
0
1991
1992
1993
1994
1995
1996
1997
Boys
Girls

4.1.3 Drop-outs:

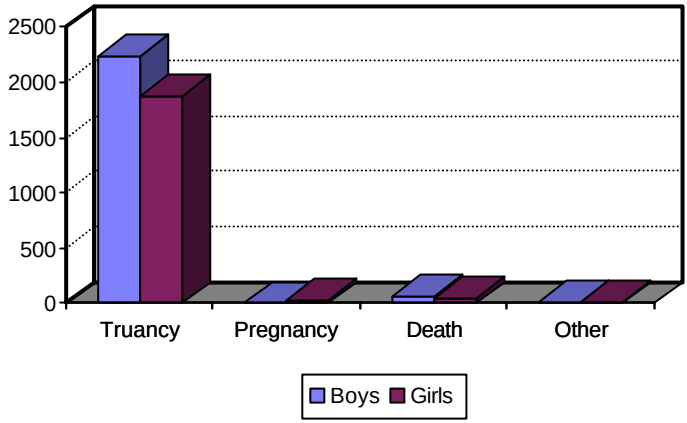
Drop-outs in primary schools are mainly caused by truancy, death, pregnancy or other causes not clearly defined. The most common reason sending many pupils out of school is truancy. For instance in 1997 (Table LI:) 96.2 percent of the drop-outs from schools was due to truancy, 2.5 percent by death and only 0.7 percent due to pregnancy.

TABLE LI: DROP-OUTS IN 1997, KILIMANJARO REGION

Reasons	STD. I - VII			
	Boys	**Girls**	**Total**	**%**
1. Truancy	2,234	1,867	4,101	96.2
2. Pregnancy	-	33	33	0.7
3. Death	66	39	105	2.5
4. Other	14	12	26	0.6
Total	2,314	1,951	4,265	100

Source: Regional Education Office, Kilimanjaro

Fig. 16: Reason for Drop-Outs in 1997 by Sex , Kilimanjaro Region



It is observed in table LII below that boys have tended to drop-out more from school in all districts except in Moshi Urban where bigger percentage of the drop-out is girls. Nonetheless, people of Kilimanjaro normally give high priorities to both education and income generating activities, it is not known if this could explain early drop-out of boys from school as having been motivated by the desire to engage in income generating activities.

Table: LII DROP - OUTS FROM SCHOOL BY SEX AND DISTRICT, KILIMANJARO REGION , 1991 - 1998

District	1992			1993			1994			1995		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Moshi (R)	393	319	712	407	388	795	536	452	988	974	860	1834
Same	129	91	220	88	62	150	139	102	241	438	376	814
Rombo	171	117	288	103	77	180	164	159	323	439	261	700
Moshi (U)	36	91	197	74	90	164	60	74	134	20	22	42
Mwanga	133	26	62	N.A	N.A	N.A	39	38	77	N.A	N.A	N.A
Hai	133	423	556	374	271	645	498	388	886	663	443	1106

Cont'd.

District	1998		
	Boys	Girs	Total
Moshi (R)	910	712	1622
Same	n.a	n.a	n.a
Rombo	226	197	423
Moshi (U)	86	77	163
Mwanga	90	87	177
Hai	359	315	674

Source: RDD's Office Kilimanjaro (R.E.O.) 1994

Fig. 17: Causes of Drop - outs in percentage 1997

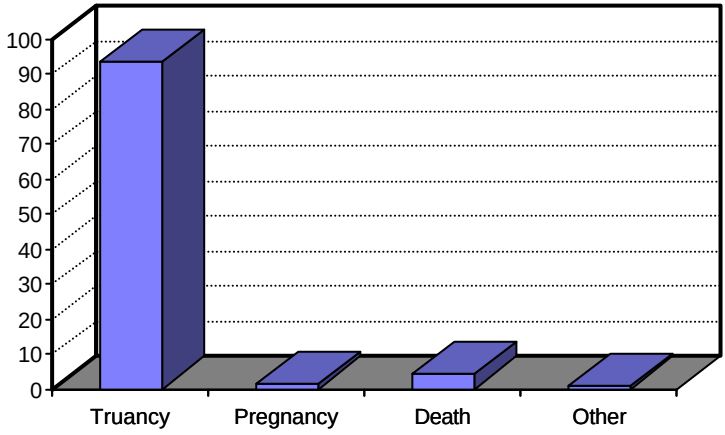


TABLE: LIII: DROP-OUTS FROM PRIMARY SCHOOLS IN TEN SELECTED REGIONS TANZANIA MAINLAND 1992

Region	CLASS							
	I	II	III	IV	V	VI	VII	Total
K'njaro	139	209	306	410	315	390	316	2085
Arusha	329	412	518	1038	471	524	740	4032
D'Salaa	287	424	447	499	384	471	233	2745
Kagera	256	482	673	1181	1035	1003	1119	5749
Mara	144	150	149	247	1241	1440	874	4245
Mbeya	278	220	366	528	443	420	546	2801
Mwanza	345	440	583	768	612	610	793	4151
Pwani	152	244	310	461	525	354	105	2151

Sources: Planning Commission: Compiled data based on BEST 1992

However compared with other regions, Kilimanjaro has relatively fewer drop out; in 1992 the region had only 2,085 drop outs while Arusha had 4,032, Kagera 5,749 and Mwanza reported 4,151 drop outs.

4.1.4 Primary School Facilities:

Problems of primary school education in the country are almost similar, they may just differ in intensity and degree. Like other regions in the country, Kilimanjaro is experiencing shortage of class-rooms, teacher's houses, desks, teaching materials as well as qualified teachers.

Table LIV below shows higher levels of pupils per classroom in all districts. The national standard ratio of pupils per classroom is 45:1. In effect, this means that more classrooms are needed in all districts to avoid congestion and provide a conducive learning environment for the pupils.

TABLE LIV: CLASS -ROOM PUPIL POPULATION RATIO BY DISTRICT, KILIMANJARO REGION 1998

District	No of Pupils	No of Classrooms	Pupil per Classroom
Rombo	50991	733	70
Moshi Rural	74836	1418	53
Same	40964	839	49
Hai	41568	806	52
Moshi urban	19062	286	67
Mwanga	26130	546	48
Total	253551	4628	55

Source: Kilimanjaro Regional Education Office, Moshi, 1998

TABLE LV: SITUATION OF BUILDINGS OF PRIMARY SCHOOLS BY DISTRICT, KILIMANJARO REGION, 1997

Moshi Urban				
Buildings	**Required**	**Actual**	**Shortage**	**%**
Classrooms	409	286	123	30
Staff Houses	637	22	615	97
Moshi Rural				
Buildings	Required	Actual	Shortage	%
Classrooms	1,649	1,418	231	14
Staff Houses	1925	137	1788	93

Rombo				
Buildings	Required	Actual	Shortage	%
Classrooms	981	733	248	34
Staff Houses	1,337	130	1,207	90
		Same		
Buildings	Required	Actual	Shortage	%
Classrooms	1,063	839	224	21
Staff Houses	1,361	126	1,235	91
		Hai		
Buildings	Required	Actual	Shortage	%
Classrooms	1,139	806	333	29
Staff Houses	1,471	141	1,330	90
		Mwanga		
Buildings	Required	Actual	Shortage	%
Classrooms	623	546	77	12
Staff Houses	652	39	613	94

Source: Regional Education Office, Kilimanjaro.

Fig. 18a: Situation of Classrooms by District, 1997

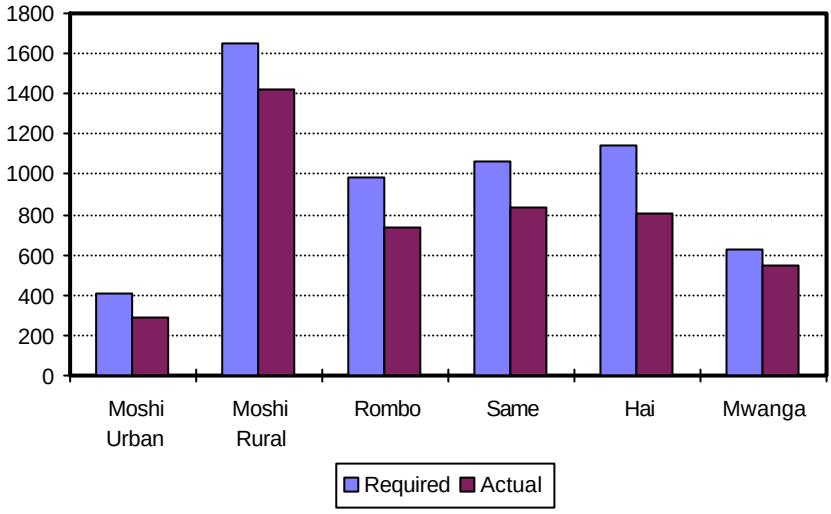

1800
1600
1400
1200
1000
800
600
400
200
0
Moshi Urban
Moshi Rural
Rombo
Same
Hai
Mwanga
Required
Actual

Fig. 18b: Situation of Staff houses by District, 1997

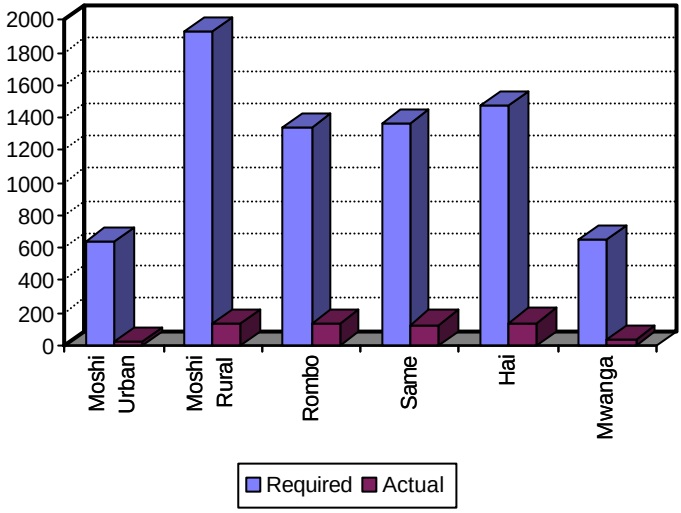


TABLE LVI: SITUATION OF SCHOOL'S FUNITURE BY DISTRICT 1997

Moshi Urban				
Furnitures	**Required**	**Actual**	**Shortage**	**%**
Desks	5,428	6,190	+762	-
Tables	1,030	369	661	64
Chairs	1,054	443	611	58
Cupboards	548	151	397	72
Moshi Rural				

Furnitures	Required	Actual	Shortage	%
Desks	31,697	27,331	4,366	14
Tables	4,106	2,137	1,969	48
Chairs	4,106	2,347	1,759	43
Cupboards	1,514	1,128	386	25
Rombo				
Furnitures	Required	Actual	Shortage	%
Desks	21,288	18,906	2,382	11
Tables	2,346	1,283	1,063	45
Chairs	2,432	1,563	869	36
Cupboards	1,942	1,210	732	38
Same				

Furnitures	Required	Actual	Shortage	%
Desks	17,011	17,313	+302	-
Tables	2,478	876	1,602	65
Chairs	2,615	891	1,724	66
Cupboards	1,504	301	1,203	80
Hai				
Furnitures	Required	Actual	Shortage	%
Desks	20,784	13,475	7,309	35
Tables	2,422	1,286	1,136	47
Chairs	2,619	1,284	1,335	51
Cupboards	1,842	729	1,113	60
Mwanga				

Furnitures	Required	Actual	Shortage	%
Desks	13,065	9,745	3,320	25
Tables	1,533	950	583	38
Chairs	1,533	1,303	230	15
Cupboards	1,078	770	308	29

Source: Regional Education Office, Kilimanjaro.

The region faces shortage of desks in four rural districts. The situation is worse in Hai district where the actual requirement of desks fall short by 35%. Rombo district is better off in this regard, since the shortage is only 11%.

Fig. 21: Situation of Desks by District, 1994

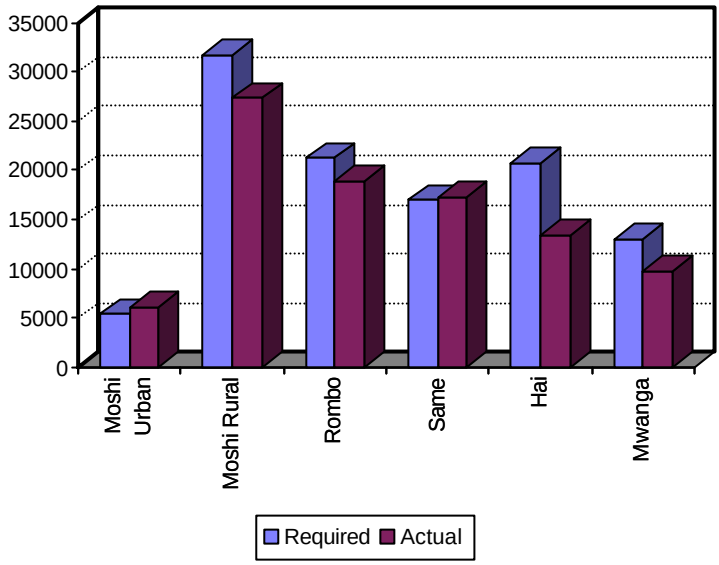


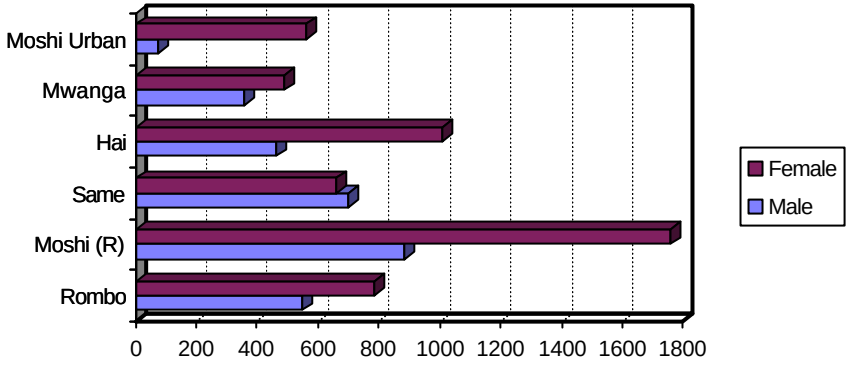
TABLE: LVII TEACHERS STAFF DISPOSITION BY GRADE, SEX AND DISTRICT , KILIMANJARO REGION, 1997

	No. of School Teachers (Primary)								
District	**GRADE A**			**GRADE B**			**TO TAL**		
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Rombo	279	309	588	270	479	749	549	788	1337
Moshi (R)	460	662	1122	423	1095	1518	883	1757	2640
Same	360	243	603	340	418	758	700	661	1361
Hai	255	458	713	210	553	763	465	1011	1476
Mwanga	211	219	430	156	272	428	361	491	858
Moshi Urban	55	286	341	21	275	296	76	561	637

Total	1620	2177	3797	1420	3092	4512	3040	5269	8309

Source: Regional Education Office, Kilimanjaro

Fig. 22: Total Staff Teachers Disposition By Sex and District Kilimanjaro Region, 1997



The Region in 1997 had a total number of 8309 Teachers. Out of this number, 5269 were females and only 3040 male teachers. Moshi rural had the highest proportion of teachers in the region, and had the best pupils per teacher ratio of 28 while Rombo was worse of at a ratio of 38 pupils/teacher Table LVII(b) Regionwise the ratio stands at 30. Comparison is made in this respect to some selected regions in Tanzania Mainland. Kilimanjaro had the best students per teacher ratio in 1995 (Table LVII(c)).

TABLE LVII (a) TEACHERS STAFF DISPOSITION BY SEX AND DISTRICT KILIMANJARO, 1997

District	Number of Primary School Teachers		
	Males	Females	Total
Rombo	549	788	1337
Moshi Rural	883	1757	2640
Same	700	661	1361
Hai	465	1011	1476
Mwanga	361	491	858
Moshi Urban	76	561	637
Total	3040	5269	8309

Source: Compilled data by Planning Commission

TABLE LVIII (b) STATUS OF PUPILS PER TEACHER RATIO BY DISTRICT KILIMANJARO REGION 1997

District	Number		Pupils per Teacher
	Pupils	Teachers	
Rombo	50991	1337	38
Moshi Rural	74836	2640	28
Hai	41568	1476	28
Moshi Urban	19062	637	30
Same	40964	1361	30
Mwanga	26130	858	30
Total	253351	8309	30

Source: Compiled data provided by Regional Education Office, Moshi 1997

TABLE LVII(c): STATUS OF PUPILS PER TEACHERSM RATIO FOR SELECTED REGIONS, TANZANIA 1995.

	Kagera	Arusha	Mwanza	Shinyanga	Tanga	Mbeya	Kilimanjaro

Students/ Teacher Ratio	33	41	45	56	36	32	30

Source: Compilled data by Planning Commission

4.1.5 Nursery Schools:

The existence of many nursery schools is yet another feature distinguishing the region's education system from many other regions. By the end of 1997 the region had a total of 410 nursery schools out of which 65 were public nursery schools and the remaining 345 privately owned. Table LVIII below shows distribution of Nursery schools in the region.

TABLE: LVIII NURSERY SCHOOLS IN KILIMAJARO DISTRICTWISE, IN 1997

District	No. of Schools			No. of Pupils		
	Public	Private	Total	Boys	Girls	Total
Moshi (R)	7	109	116	3552	3506	7058
Hai	4	92	96	82	100	182
Rombo	-	105	105	5136	4996	10132
Mwanga	24	15	39	95	88	183
Same	24	18	42	578	663	1241
Moshi (U)	6	6	12	415	449	864
Total	65	345	410	9858	9802	19660

Source: Kilimanjaro Regional Education Office, Moshi, 1994

Nursery Schools are major sources of recruiting class I pupils in the region. Poor registration of class I pupils noted in Mwanga

district in 1997 may be attributed partly to the existence of relatively few nursery schools compared to other districts.

4.1.6 Secondary Schools:

At independence (1961) the region had only 7 secondary schools. By the end of 1994, she had the highest number of private secondary schools in the whole country and was among the three leading regions with the highest number of Public Secondary Schools. The region had 62 private secondary schools while Kagera and Iringa had 23 and 32 respectively. Public secondary schools in Kilimanjaro were 15 while in Kagera and Iringa they were 9 and 10 respectively. The regions with the lowest number of Public Secondary Schools were Singida, Kigoma and Mbeya. Those with the lowest number of private secondary schools were Coast, Lindi, Kigoma and Mtwara. Odd as it may sound, Mtwara by the end of 1992 had no private secondary school. Table LIX below indicates the place Kilimanjaro region occupies in terms of both the number of public and private secondary schools in Tanzania Mainland while table LX indicates distribution of secondary schools by district in the region.

TABLE LIX SITUATION OF SECONDARY SCHOOLS IN KILIMANARO REGION COMPARED TO OTHER REGIONS IN TANZANIA, 1994.

Region	No of Public Secondary Schools	No of Private Secondary School	Total	Rank

1. Kilimanjaro	15	62	7	1
2. Arusha	13	23	36	3
3. Iringa	10	32	42	2
4. Mbeya	7	17	24	6
5. Kagera	9	23	32	5
6. Mwanza	14	20	34	4
7. Tanga	10	12	22	8
8. Dar es salaam	8	15	23	7
9. Dodoma	13	9	22	8
10. Kigoma	4	3	7	17
11. Lindi	12	3	15	13
12. Mara	8	10	18	12
13. Morogoro	12	8	20	10
14. Mtwara	9	3	12	15
15. Pwani	8	3	11	16
16. Rukwa	11	9	20	10
17. Ruvuma	10	11	21	9
18. Shinyanga	10	10	20	10
19. Singida	5	9	14	14
20. Tabora	10	9	19	11

Source: Ministry of Education, 1994

TABLE LX: DISTRIBUTION OF SECONDARY SCHOOLS BY DISTRICT, KILIMANJARO REGION, 1961- 1997

District	1961	1985			1995			1997		
	Public	Public	Private	Total	Public	Private	Total	Public	Private	Total
Hai	1	2	7	9	3	11	14	5	11	16
Moshi (R)	3	-	26	26	1	32	33	10	24	34
Moshi (U)	3	2	3	5	3	4	7	3	6	9
Mwanga	-	-	3	3	2	15	17	7	13	20
Rombo	-	3	3	6	4	6	10	6	8	14
Same	-	1	6	7	2	8	10	12	7	19
Total	7	8	48	56	15	76	91	43	69	112

Source: Kilimanjaro Regional Education Office, Moshi 1997

It is observed from table LX that about 48% of secondary schools in the region are located in two districts of Moshi Rural and Mwanga.

TABLE LXI: ENROLMENT IN PUBLIC AND PRIVATE SECONDARY SCHOOLS BY SEX KILIMANJARO REGION, 1987 - 1992

Year	Public Schools			Private Schools			Total	
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
1987	2946	1856	4802	7473	7584	15057	10419	9440
1988	3077	2030	5107	9094	9829	18923	12171	1185
1989	3287	2171	5458	9309	1039	19702	12596	
1990	3882	1878	5760	9495		20185	13377	1256
1991	4068	2777	6845	9032	1069	19613	13100	1256
1992	3713	2992	6705	1005		21483	13767	
					1058			1335
					1142			1442

Source: Kilimanjaro Regional Statistical Abstract, 1993

Fig. 22a: Total Enrolment in Secondary School by Sex 1987/92

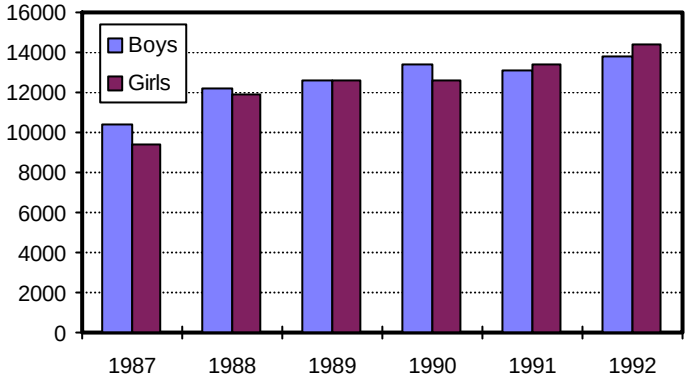
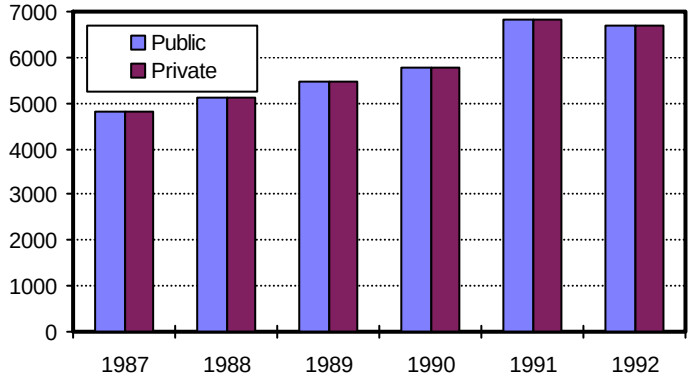


Fig. 22b: Total Enrolment in Public and Private Secondary Schools 1987/92



Note:-

(i) That enrolment rate of girls into public secondary schools in the region between 1987 and 1992 was lower compared to that of boys. This can be attributed to low pass rate of girls in the Standard VII examinations.

(ii) Private Secondary school enrolled more or less equal numbers of both sex between the same period. The number of girls enrolled in private secondary schools in 1992 exceeded the number of boys by 654.

The region's enrolment sex ratio in secondary schools favour of male students in 1987 to 1990 though it has been decliming gradually table LXI(a) by 1992 the ratio was reversed to favour girls to a sex ratio of 95. It is not known for sure the reason behind this trend.

TABLE LXI(a): ENVOLMENT AND SEX RATIO IN SECONDARY SCHOOLS KILIMANJARO REGION, 1987, 1990 AND 1992

Enroment	year		
	1987	**1990**	**1992**
Enrolment Boys	10,419	13,337	13,767
Enrolement Girls	9,440	12,568	14,421
Total Enrolment	19,859	25,945	28,188
Enrolment Sex ratio	110	106	95

Source: Data from Kilimanjaro Regional Statistical Abstract, 1993

4.1.7 Vocational Training Centres:

The region also has 17 Vocational Training centres and 4 teachers training Colleges distributed as indicated below:-

Vocational Training Schools (1997):

District	No. of Schools
Moshi (Urban)	2
Hai	3
Rombo	3
Same	3
Moshi (Rural)	4
Mwanga	2

Total **17**

Teachers Training Colleges (1997)

District	No. of Colleges
Moshi (Rural)	3
Mwanga	1

4.1.8 Literacy:

Literacy level (simply defined as ability to read and write Kiswahili) is higher in Kilimanjaro region than all other regions in the country. Literacy rate in the region increased steadly over the years as indicate below.

1960's	60%
1970's	82%
1980's	90%
1994	95%

It is observed in table LXII that the number of illiterate women in the region in 1995 exceeded the number of men by 11712. Rombo and Hai districts with illiteracy rate of 10% and 7% respectively seem to have lagged behind in the race of educating the adults in the region.

TABLE LXII: ILLITERATE ADULT POPULATION BY SEX AND DISTRICTRICT KILIMANJARO REGION, (1994)

District	Total No. of Adults			Illiterates			
	Male	Femal	Total	Male	Femal	Total	%
Hai	81509	86100	167609	4008	6738	10746	6
Moshi (U)	30264	29534	59798	406	188	1194	2
Moshi (R)	89842	104522	194364	1501	2876	4377	2
Mwanga	33033	37615	70648	720	2260	2980	4
Same	39237	45061	84298	456	914	1370	2
Rombo	87933	96609	184542	4927	10154	15,081	8
Region	361818	399441	761259	1201	23730	35748	5

Source: Regional Education Officer - Kilimanjaro.

At National level, the 1988 Census showed that Kilimanjaro had the highest literacy rate of 80.8 percent followed by Dar es salaam, 80.7 percent, while the lowest literacy rate was recorded in Shinyanga region (48.3 percent). Table LXIII below shows the percentage of literacy by region.

Urban areas show a consistently higher literacy rate than rural areas. This is the national trend (Table XIV).

TABLE LXIII: PERCENT LITERATE FOR POPULATION AGED 10 YEARS AND ABOVE BY REGION, TANZANIA MAINLAND, 1967, 1978 AND 1988

Region	1967 Census	1978 Census	1988 Census
Kilimanjaro	**56**	**74.1**	**80.8**
Dar es Salaam	60	73.3	80.7
Ruvuma	41	66.3	70.5
Tanga	40	60.6	66.0
Morogoro	37	58.6	62.8
Mara	35	56.4	63.9
Iringa	31	54.0	68.3
Kagera	40	52.9	59.5
Mtwara	28	51.4	57.1
Dodoma	24	49.5	55.5
Mbeya	29	49.2	61.9
Rukwa	-	48.5	58.6
Lindi	-	48.4	53.8
Singida	24	46.7	57.4
Mwanza	25	44,3	57.3
Coast	26	44.0	51.1
Kigoma	19	43.7	55.1
Arusha	26	41.9	58.1
Tabora	27	40.5	50.5
Shinyanga	16	33.2	48.3

Source: 1988 Population Census (National profile, Table 5.2)

TABLE LXIV: LITERACY RATES BY SEX FOR RURAL AND URBAN POPULATION 10 YEARS TANZANIA MAINLAND REGION, 1988 (CENSUS)

Regions	Male			Female		
	Rural	Urban	Total	Rural	Urban	Total
Dodoma	61.5	85.4	64.3	45.1	73.7	48.2
Arusha	61.5	91.8	65.6	46.4	82.8	50.9
Kilimanjaro	**84.5**	**90.3**	**85.5**	**75.7**	**83.6**	**76.9**
Tanga	72.8	88.6	75.9	53.2	75.6	57.3
Morogoro	68.8	86.4	72.9	49.5	72.0	54.6
Coast	60.1	72.2	64.0	40.1	51.8	44.9
Dar es salaam	68.4	90.0	87.9	48.0	77.7	74.6
Lindi	62.4	75.9	64.6	42.0	60.2	44.8
Mtwara	65.5	77.9	67.3	46.3	61.6	48.5
Ruvuma	77.7	87.6	78.7	61.4	75.7	63.3
Iringa	80.1	87.4	84.9	57.2	70.4	58.5
Mbeya	69.9	87.5	73.3	48.4	70.0	52.4
Singida	65.0	85.5	66.8	47.2	70.8	49.3
Tabora	50.1	85.2	60.5	36.7	67.8	41.6
Rukwa	69.1	84.3	71.3	43.9	66.4	47.3
Kigoma	65.1	83.1	67.4	43.1	62.7	45.5
Shinyanga	57.9	85.9	59.9	36.2	67.7	39.3
Kagera	68.0	84.4	69.0	49.7	72.4	50.9
Mwanza	63.7	83.7	67.6	43.4	66.9	47.8

Mara	73.7	88.0	75.3	53.7	71.5	55.6

Source: 1988 Population census: National profile, table 5.4

High literacy rate of 74.1 percent was also observed in Kilimanjaro region in the 1978 Census results and the lowest rate was recorded in Shinyanga (33.2 percent). In addition, the 1988 census data (Table LXIV) show that Arusha had the highest urban male literacy rate of 91.8 percent followed by Kilimanjaro with 90.3 percent and Dar es salaam with 90 percent among the urban population. For the rural population Kilimanjaro had the highest male literacy rate of 84.5 percent followed by Iringa with 80.1 percent and Ruvuma with 77.7 percent for Tanzania mainland. With regard to women literacy, Kilimanjaro takes the lead again with 75.7% and 83.6% in rural and urban population respectively. The encouraging high literacy rate being observed in the region could be a result of seriousness attached to education by the people of Kilimanjaro.

4.2 HEALTH SECTOR

4.2.1 Introduction:

In terms of quantity health facilities are fairly well established in the region with each district having an equitable share. The period between 1961-1997 witnessed tremendous expansion of health facilities in the region. During the period dispensaries grew from 18 to 361. Health centers also increased significantly by 950% from 2 in 1961 to 18 by 1997. And six new hospitals were constructed and operationalised. Table LXV summarizes growth, status and distribution of health facilities in the region.

TABLE LXV GROWTH STATUS AND DISTRIBUTION OF HEALTH FACILITIES BY DISTRICT. KILIMANJARO REGION, 1961-1997.

District	Dispensaries			Health Centers			Hospitals		
	1961	1985	1997	1961	198	1997	1961	198	1997
Hai	7	24	58	1	2	3	2	2	3
Moshi	-	30	69	-	3	2	1	1	4
Moshi	4	35	85	-	4	4	4	4	4
Mwanga	5	40	48	1	2	3	1	1	1
Rombo	1	17	46	-	3	3	-	-	2
Same	1	30	55	-	3	3	2	2	2
Total	18	176	361	2	17	18	10	12	16

Source: Regional Medical Office, Moshi, 1997

Despite fair distribution of health services depicted by the table above the region is faced with varying health problems. Death toll resulting from common preventable diseases such as malaria, respiratory infections, water borne and water related diseases such as typhoid, cholera and dysentery is still rampant. If AIDS which is now becoming endemic and claiming several deaths is discounted the top common killer diseases in the region are as listed in table LXVI below.

TABLELXVI: COMMON DISEASES IN % IN KILIMANJARO REGION, 1997

Disease	Occurrence/Percentage
Malaria	29.01
Upper Respiratory	21.51
Accidnets /Injury	12.13
Intestinal worms	9.42
Pneumonia	6.82
Diarrhoea	6.74
Anaemia	4.82
Skin diseases	4.32
Veneral diseases	2.68
Eye diseases	2.53
Total	100

Source: Regional Medical Office, Annual Health Report 1997.

4.2.2 Organisational Structure

Health delivery system in the region follows central local government structure.

. Policy is formulated by the Ministry of Health

. The region interprets national policies and supervises their implementation

. In turn, the District Authorizes are responsible for overseeing health services delivered by dispensaries, health centers and hospitals in the district.

4.2.3 Referral System

The referral system in the region is comprised of three basic levels.

(i) **Dispensaries**

A dispensary is the first post in the district referral system. A dispensary in accordance with national standard is planned to serve between 5,000 and 10,000 persons. By the end of 1997, Kilimanjaro region had 361 dispensaries, out of which 131 dispensaries are owned by the government and 230 privately owned (Voluntary Agencies, Parastatal and Private).

(ii) **Health Centers**

A Rural Health Center (RHC) is the second level of referral at district level. A Health Center is supposed to cater for a population of 50,000 persons. The region by 1997 had 18, Health centers with a total of 393 beds. Out of the 18 Health Centers, 15 are owned by the government and 3 are in the private hands.

iii) **Hospitals**

The regional hospital forms the apex of the regional referreral system. Whereas a district hospital is top referral organisation at district level.

Kilimanjaro region has 16 hospitals with a total of 1848 beds. 8 out of 16 hospitals are government owned and the remaining 8 are run by voluntary agencies. Out of 16 hospitals there are two referral hospitals. Kibong'oto Tuberculosis Referral Hospital in Hai district and Kilimanjaro Christian Medical Center (KCMC) located in Moshi Municipality.

4.2.4 Adequacy and Accessibility:

(a) Dispensaries.

TABLE LXVII: DISTRIBUTION OF DISPENSARIES BY DISTRICT AND OWNERSHIP, KILIMANJARO REGION, 1997.

District	Government	Private	Total	MCH Clinics	Population/Disp
Hai	22	36	58	42	3930
Moshi (U)	8	61	69	9	2609
Moshi (R)	30	55	85	59	4873
Mwanga	25	23	48	35	3275
Rombo	20	26	46	26	5551
Same	26	29	55	42	3557
Total	131	230	361	213	3962

Source: Health Statistics Abstract 1997 (Govt Disp)
Regional Commissioner's office, Kilimanjaro (Priv Disp)

Table LXVII above indicates that population dispensary ratios for all rural districts are within the national target of a dispensary per 5,000 to 10,000 people. The population dispensary ratios for Moshi Municipality, Hai, Moshi (R), Mwanga and Same districts are below the minimum target, whereas the population dispensary for Rombo district is above the minimum national requirement.

Fig. 23: Ratio of Population per Dispensary by District 1997

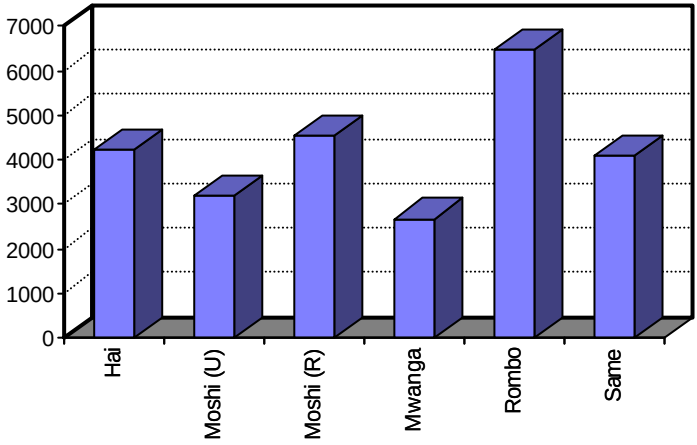


TABLE LXVIII: ACCESSIBILITY TO DISPENSARY IN KILIMANJARO REGION 1986 BY DISTRICT

District	Estimated population within the Distance of less than 10 km from the nearest Dispensary				Estimated population by 10 km from the nearest Dispensary	
	0-5 km		6-10km			
	No	%	No	%	No	%
Same	150,40	90.2	16,300	9.8	-	-
Mwanga	94,500	97.0	1,800	1.9	1,100	1.1

Rombo	198,50	99.3	1,300	0.7	-	-
Moshi Rural	362,70	99.2	2,900	0.8	-	-
Moshi urban	84,200	100.0	-	-	-	=
Hai	229,80	97.4	6,200	2.6	-	-
Total	1,120,1	97.4	28,500	2.5	1.100	0.1

Source: Ministry of Lands, Housing and Urban Development 1990 Northern Zone Regional Physical Plan draft report and Plans.

A survey carried out by a team of experts from the Ministry of Lands Housing and Urban Development in 1986 indicated that almost 97% of Kilimanjaro region population in 1986 resided within a reasonable distance of 0-5 km from nearby dispensaries. Other similar surveys revealed that in some regions like Kigoma, Singida, Rukwa and Mara about 60% of population still have to walk between 5-10 km to reach the nearest dispensary.

(b) Rural Health Centres:

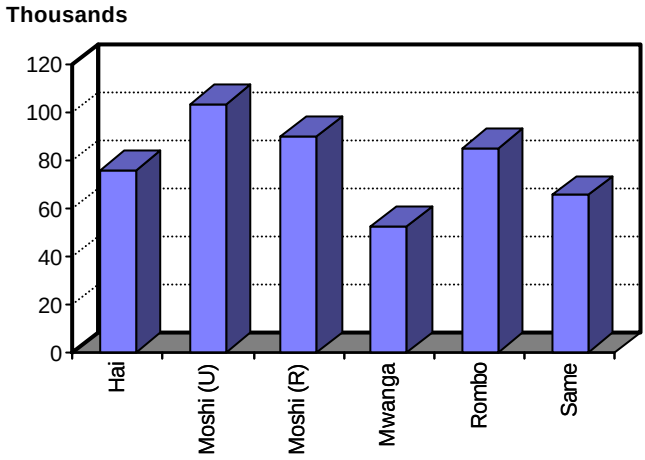
TABLE LXIX DISTRIBUTION OF RURAL HEALTH CENTRES BY DISTRICT AND OWNERSHIP IN KILIMANJARO REGION, 1997.

District	Number of RHC			POP/RHC	Number of beds		
	Govt	Private	Total		Govt	Private	Total

Hai	3	-	3	75,974	49	-	49
Moshi R	2	2	4	103,558	98	-	98
Moshi U	2	2	2	90,007	-	-	0
Mwanga	3	-	3	52,405	40	-	40
Rombo	3	-	3	85,114	93	-	93
Same	2	1	3	65,203	64	45	109
Total	17	1	18	79,463	344	49	389

Source: Health Statistics Abstract, Ministry of Health, 1997 P. 96

Fig. 24: The Ratio of Population per Rural health centre by District 1997



It is observed from the above table that the Regional Population/RHC ratio of 79,463 is above the national target of 50,000 people per Rural health centre. Moshi Rural and Urban districts have the highest ratios 103,558:1 and 90,007:1 per RHC respectively.

On average a Rural Health Centre in the region owned by the government supervises 14 dispensaries instead of recommended national target of 5 dispensaries per rural health centre.

TABLE LXX: ACCESSIBILITY TO RURAL HEALTH CENTRE BY DISTRICT KILIMANJARO REGION, 1986

District	Estimated population within a Distance of 20km from the nearest health centre				Estimated population by 20 km from the nearest Health centre	
	0-10km.		11-20Km.		20Km+	
	No	%	No	%	No	%
Same	106,900	64.1	38.500	23.1	21,300	12.8
Mwanga	75,000	77.0	16,600	17.0	5,800	6.0
Rombo	199,800	100.0	-	-	-	-
Moshi Rural	351.100	96.0	14,500	4.0	-	-
Moshi Urban	-	-	-	-	-	-
Hai	190.800	80.8	38,000	16.1	7,200	3.1
Total	923,600	89.3	107,600	10.4	34,300	3.0

Source: Ministry of Lands, Housing and Urban Development 1990: Northern zone Regional Physical Plan draft Report and Plans.

It is observed in table LXX above that 89.3% of the population live within a distance of 0-10 Km from the nearest RHC. This implies that in terms of distance dispensaries are more accessible than RHCs in the region.

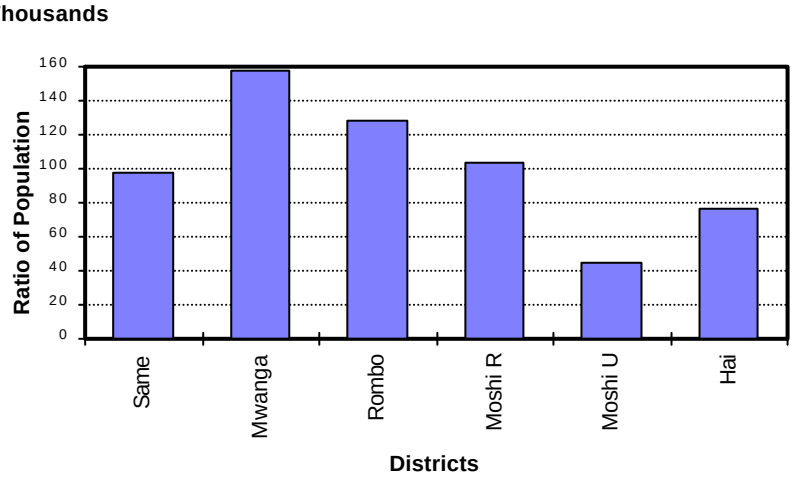
(c) Hospital Services:

TABLE LXXI: HOSPITALS AND DOCTORS IN KILIMANJARO REGION 1997 :

District	No. of Hospitals			Number of Beds	Population per Hospital	%	Pop/ Doctor
	Public	Private	Total				
Same	1	1	2	148	97,804	8	24451
Mwanga	1	0	1	100	157,215	5	31443
Rombo	0	2	2	200	127,671	6	42557
Moshi R	0	4	4	367	103,558	4	103558
Moshi U	2	3	4	587	45,004	18	10001
Hai	2	1	3	498	75,974	4	56980
Total	5	11	16	1900	89,396	45	31785

Source: Health Statistics Abstract, Ministry of Health, 1997 p. 92

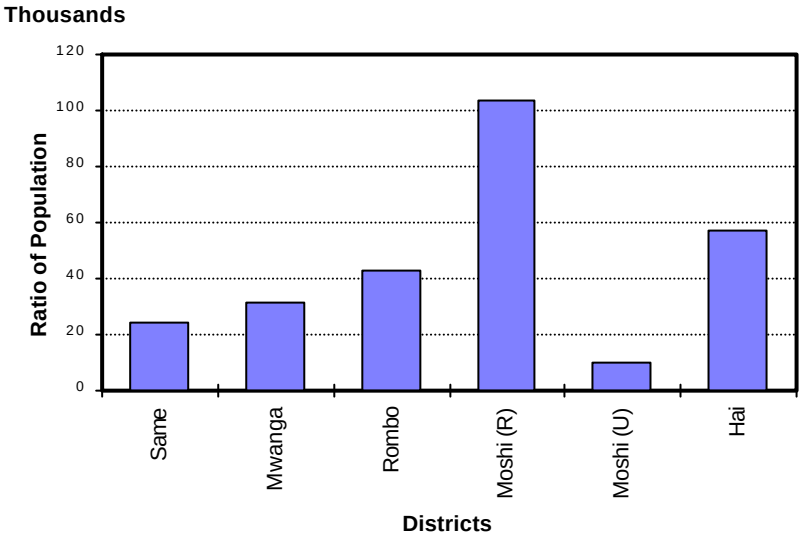
Fig. 25a: The Ratio of Population per Hospital by District 1997



Notes:

The regional population per physician 31,785 is slightly above the national average of 24,930. The population per hospital (89,396) is below the national target of 100,000 people.

Fig. 25b: Ratio of Population per Doctor by District 1997



Notes:

All hospitals in the region are accessible throughout the year, though distance covered to reach them varies from district to district.

4.2.5 Health Indicators:

(a) **Life Expectancy At Birth:**

Table LXXII indicates that the region has relatively higher life expectancy at birth compared to other regions. This

may be attributed to the regions somewhat advanced socio-economic development status.

TABLE LXXII: LIFE EXPECTANCY AT BIRTH BY REGIONS AND SEX FOR THE YEAR: 1978 AND 1988, TANZANIA MAINLAND

Regions	1978	1988		
	Total	Total	Male	Female
Arusha	50	57	57	58
Coast	47	48	46	51
Dar es salaam	50	50	50	50
Dodoma	45	46	45	47
Iringa	41	45	44	47
Kagera	45	45	44	45
Kigoma	40	48	47	49
Kilimanjaro	**58**	**59**	**57**	**62**
Lindi	42	47	46	48
Mara	44	47	46	48
Mbeya	41	47	45	48
Morogoro	44	46	45	48
Mtwara	40	46	45	48
Mwanza	44	48	46	50
Rukwa	40	45	44	48
Ruvuma	43	49	48	51
Shinyanga	42	50	48	51
Singida	44	55	54	55
Tabora	44	53	53	54
Tanga	49	49	48	51

MAINLAND	44	50	49	51

Source: Health Statistics Abstract 1994

(b) Infant and Child Mortality Rates

Kilimanjaro is classified as one of the low infant and child mortality regions. It is being observed from Table LXXIII (a) below that there has been a decline of both mortality rates, between the two census, 1978 and 1988. The rate of mortality decline for IMR and U5MR were 1.3 and 1.4 percent respectively. Consequently, the region's IMR and U5MR went down to 67 and 104 respectively. At national level IMR and U5MR also declined in the same period from 137 and 231 recorded in 1978 to 115 and 192 estimated in 1988 respectively (Population Census, 1988).

TABLE LXXIII (a):IMR AND U5MR TREND IN KILIMANJARO REGION 1978-1994

Year	Infant Mortality	Child Mortality
1978	76	119
1988	67	104
1994	60	92
1995	59	90

Source: Health Statistics Abstract 1994

Despite the impressive low IMR and U5MR achieved by the region it is worth noting that the rates are still very high compared to those prevailing in the developed industrialized countries. Thus for the region to reach 50 for IMR and 70 for U5MR by the year 2000, the current IMR and U5MR decline rates need to increase to 2.0 and 2.3 for IMR and U5MR respectively.

(c) **Maternal Mortality:**

Maternal Mortality defined as the death of a women while pregnant or within 42 days of the termination of pregnancy is one of the major health problems facing all regions in the Country. At independance maternal mortarity was estimated at 453 per 100,000 births. In 1992 Maternal Mortality stood at 199 per 100,000 births.

The maternal mortality in Kilimanjaro Region was estimated to be 46 per 100,000 births. in 1993 while in 1996 it was 72 per 100,000 The main causes of maternal death in the region are direct Raptured uterus, Postpartum haemorrhage (PPH), septicaemia, malaria, anaemia, HIV, eclampsia, local herbs and cardriac complications.

(d) **Mal-nutrition:**

According to Regional MCH Report (1988) the incidence of malnutrition in Kilimanjaro region was estimated to be 26.3% of which 5.9 were severely malnouri-shed.

TABLE LXXIII (b): MATERNAL MORTALITY RATE IN TANZANIA MAINLAND BY REGIONS FOR 1992 TO 1995

Region	1992	1993	1994	1995	Ranking
Mtwara	264	212	161	252	10
Lindi	262	289	193	264	14
Ruvuma	225	189	186	177	8
Morogoro	289	172	190	153	6
Coast	209	111	70	187	5
Dar es Salaam	220	398	237	328	19
Iringa	311	321	276	281	18
Arusha	102	158	114	159	4
Shinyanga	143	188	199	184	9
Singida	242	171	238	207	13
Dodoma	197	214	208	266	16
Kagera	304	343	190	242	12
Kigoma	144	155	105	87	2
Kilimanjaro	**126**	**46**	**107**	**63**	**1**
Mara	67	59	106	124	3
Mbeya	67	361	436	264	20
Mwanza	221	186	266	207	15
Rukwa	172	294	243	267	17
Tabora	151	185	130	216	7
Tanga	255	172	220	195	11
Total	199	211	197	208	-

Source: Health Statistics Abstract, 1997

One to reduce MMR is to ensure that all women of child bearing age immunised against Tetanus.

TABLE LXXIV: VACCINATION COVERAGE 1997, KILIMANJARO REGION

Vaccine	Number Vaccinated			% Coverage		
	1978	**1993**	**1997**	**1978**	**1993**	**1997**
BCG	44,533	37,192	46,96	88	90.93	89.1
DPT	40,986	35,520	44,588	72.4	77.88	76.1
POLIO	35,545	42,477	44,993	-	86.68	96.3
Measles	40.252	33,907	44,143	79.7	82.9	71.7
TT	25,292	32,899	25,640	-	16.37	60.0

Source: 1. Regional MCH Report, 1988, Moshi,
2. Health Statistic Abstract, 1994, primary health report Kilimanjaro region, 1997

Notes:

(i) The number of children under and over one year vaccinated in 1993 decreased compare to those vaccinated in 1978. This may reflect the declining of population growth rate in the region observed above.

(ii) Percentage coverage was higher 1997 than it was in 1978 and 1993.

(e) **AIDS:**

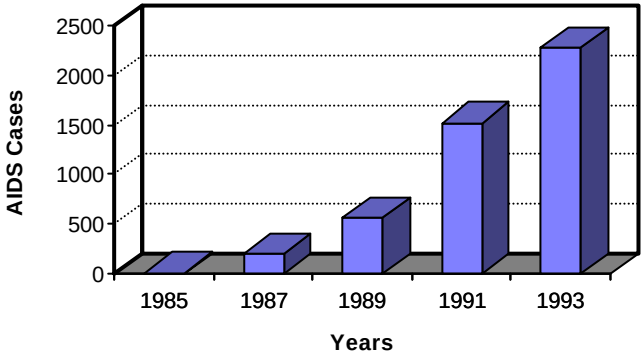
HIV/AIDS disease is currently one of the leading causes of deaths in many regions in the country. According to NACP, Surveillance Report (1994) produced by the Ministry of Health shows that HIV is spreading very fast in the region. In 1985, the reported aids cases were only 8, whereas in 1993 the number of cases increased to 2,279.

TABLE LXXVa: CUMMULATIVE AIDS CASES IN KILIMANJARO REGION

Year	Cases
1985	8
1987	207
1989	570
1991	1,523
1993	2,279

Source: Health Statistics Abstract 1994.

Fig. 26: Cummulative AIDS Cases in Kilimanjaro Region, 1985-1993



The rate of aids per 100,000 population in the region was estimated at 147.5 and 185.1 in the years 1992 and 1993 respectively. With these rates the region was ranked in 6th and 5th positions in 1992 and 1993 respectively. Thus Kilimanjaro is one of the severely affected region by HIV/AIDS in the country. As observed in Table LXXV (b) the rate of infection was 3.8 by the year 1997.

TABLE LXXV (b): HIV/AIDS INFECTION BY DISTRICT, 1997

District	No. of blood donor	HIV +ve	Percentage (%)
Moshi (U)	2037	108	5.3
Moshi (R)	302	10	3.3
Rombo	1770	10	0.6
Hai	337	19	5.6
Same	1219	70	5.7
Mwanga	338	13	3.8
Total	6003	230	3.8

Source: Regional Medical Office,: Annual health report, 1997

Currently, districts mostly affected are Same, Hai and the municipal. This bears the concern of the township being stop overs for the highway traffic.

4.3 WATER SECTOR

4.3.1 Introduction

Kilimanjaro is one of the regions in the country which is fairly endowed with plenty of surface and ground water sources (Table LXXVI). About 90% of all water schemes in the region obtain their waters from surface sources mainly from rivers, springs and surface dams and almost all water intakes in the region originate from major streams around mount Kilimanjaro and Pare mountains. Rombo , Moshi rural and Hai districts get their water

from these sources. Some parts of Same and Mwanga districts obtain their water supply from the Pare mountains.

The region has several dams which are in use in different districts. The larger ones being Nyumba ya Mungu, Kalimawe, Ndungu and Jipe. Water from these dams is used for domestic purposes, fishing, industries, irrigation, and generation of electricity. About 10% of all water supply in the region is obtained from ground water sources, that is, from Bore-holes and shallow-wells mainly in the lower areas of Same and Mwanga districts.

TABLE LXXVI: POPUATION WITH ACCESS TO CLEAN WATER IN FIVE SELECTED REGIONS 1994/95 (COMPARISON)

Region	Population ('000)			Urban Population ('000)			Rural Population ('000)		
	Total	Number served	% Served	Total	Number Served	% Served	Total	Number Served	% Served
K'njaro	1308.3	676.187	51.7	145.366	80.125	55.0	1234.5	696,890	56.0
Mbeya	1708.0	848.098	49.7	244.2	164,200	67.3	1453.7	683,654	46.7
Kagera	1554.8	441.636	28.4	154.8	49,636	32.1	1400.0	392,000	28.0
M'goro	1572.0	754.000	48.0	240.2	155,00	64.5	1331.7	600,000	45.1
Tanga	1425.2	909.932	63.9	226.3	194,091	85.8	1198.8	715,831	59.7

Source: Ministry of Water Energy and Minerals

4.3.2 Rural Water Supply

The region is among few regions in Tanzania whereby a large proportion of the rural population relatively get their water supply with ease, both physically and financially,because of the simplicity which exist in tapping clean water from streams or springs and conveying the same by gravity and other pumping energy.

There is a total of 111 water sources which exist in the region (96 surface water sources and 74 ground water sources). Table LXXVII highlights distribution of water schemes in the region.

TABLE LXXVII: WATER SUPPLY SOURCES/SCHEMES IN KILIMANJARO REGION.

District	Number of Schemes		Water Sources		Pumping Energy				
	Piped	Shallow Wells	Surface	Ground Water	Gravity	Diesel	Electric	Hand Pumps	Solar
Moshi(U)	4	-	2	1	1	-	2	-	-
Moshi(R)	29	1	29	2	-	-	-	3	-
Rombo	16	-	14	2	-	2	-	-	-
Mwanga	21	56	18	3	-	-	2	6	1
Hai	16	-	13	2	1	1	2	-	-
Same	25	2	20	5	-	4	1	2	-
Total	111	59	96	15	2	7	5	61	1

Source: Ministry of Water Energy and Minerals/Region Water Engineer, Kilimanjaro, Moshi

4.3.3 Coverage of Rural Water Supply:

Kilimanjaro Region has a total of 402 villages out of which 249 are served with clean water from water schemes. The remaining 153 villages get their water supply by traditional methods, that is either from rivers, natural springs, ponds and water reservoirs or dams. The average population with access to clean water is estimated at 45% Table LXXVIII.

TABLE XLIX: POPULATION SERVED WITH CLEAN WATER BY DISTRICT.

District	Population 1988			Population 1997		
	Total	No Served		Total	No Served	% Served

Moshi Urban	96,838	52,000	53.7	115,386	41,540	36
Moshi Rural	342,553	188,405	55	409,430	237,469	58
Rombo	200,859	121,000	60	235,847	96,690	41.0
Mwanga	98,260	63,817	69	202,652	77,010	38
Hai	197,449	70,000	35	239,899	93,561	39
Same	170,053	69,700	41	115,827	50,964	44
Total	1,099,797	564,922	51.4	1,319,041	597,234	45

Source: Regional Water Engineer, Moshi, 1997

Moshi Rural district has the highest percentage of its population getting clean water, 58% of the population served, followed by Same 44%, Rombo 41%. Hai, Mwanga and Moshi Urban districts have the least percentages with only 39, 38 and 36 respectively.

4.3.4 Water Schemes Management

Management of water schemes in each district in the region is under the district councils, the villagers themselves through Village Water committees (VWC) and Board of water users and companies. To facilitate water management most of the villages have established Village Water Funds. The district engineer is a technical member both to the district councils and village water committees. For water schemes that serve more than one village, a ward water committee exist instead. By 1997 more than 70% of the villages had established village water committee (VWC) and more than a third of them had established village water funds (VWF), table LXXiX indicates.

TABLE LXXiX: ESTABLISHED VILLAGE WATER COMMUNITTEES AND VILLAGE WATER FUNDS 1997.

District	Number of villages	Villages with VWC	%with VWC	Villages with VWF	%with VWF
Moshi	-	-	-	-	-
U	150	57	38	45	30
rb	57	58	100	58	100
a	58	54	84	29	45
n	65	46	75	12	20
Moshi Rural	72	72	100	18	25
Rombo					
Mwanga					
Hai					
Same					
Total	402	287	71	162	40

Source: Ministry of Watrer Energy and Minerals

Response to cost sharing is yet to be described as satisfactory. Despite the concept being accepted in principle by most people, they are still unwilling to contribute voluntarily when they are required to do so. However, it has been observed that in the needy areas particulary in the lower zone where water is always scarce participation and contribution made by people is higher compared to the highlands where water is abundant.

4.3.5 Rural Water Supply Scheme Inventory

Base-line data survey on water supply schemes in Tanzania done in may 1993 and a recent revisit of schemes done in 1995 by the Ministry of Water Energy and Minerals indicates that there were 1,853 functioning water points and 111 water supply schemes in Kilimanjaro region. The region has a total of 2197 water supply points/schemes. About 344 water points and water scheme were

not functioning. Tables LXXX and LXXXI below give summary of water points/schemes situation in the region in 1995.

TABLE LXXX: A RURA L WATER SUPPLY SCHEMES INVENTORY BY DISTRICT 1995

Districts/type	Moshi Urban			Moshi Rural			Rombo			Mwanga			Hai			Same		
Status	T	NF	% NF	T	NF	% NF	T	NF	% NF	T	NF	% NF	T	NF	% NF	T	NF	% NF
Gravity	2	-	0	29	-	0	14	-	0	8	-	0	13	-	0	20	-	0
Shallow wells and pumps	-	-	-	3	-	-	-	-	-	56	7	13	-	-	-	2	-	0
Pumping	2	-	-	-	-	-	2	-	-	3	-	-	3	3	100	5	2	20
Diesel	-	-	-	-	-	-	2	-	0	1	-	0	2	=	0	4	1	-
Electric	2	-	0	-	-	-	-	-	-	1	-	0	-	-	-	1	-	-
Solar	-	-	-	-	-	-	-	-	-	1	-	0	-	-	-	-	-	-
Total (public taps)	7	3	60	883	21	2	616	193	31	79	20	25	493	90	18	121	17	14

Source: Ministry of Water Energy and Minerals/Regional Water Engineer Kilimanjaro, Moshi, 1995

TABLE LXXXI: SUMMARY OF RURAL WATER SUPPLY 1995

District	Regional Total				
Status	Total (T)	Functioning (F)	Non-Functioning (%F)	% Non-Functioning	% NF
Gravity	96	96	-	100	-
Shallow wells and Pumps	61	54	7	89	11
Pumping	15	14	1	93	7
Diesel	8	7	1	88	12
Electric	6	6	-	100	-
Solar	1	1	-	100	-
Total (public taps)	2197	1853	344	84	16

Source: Regional water Engineer Kilimanjaro, Moshi, 1995

4.3.6 Problems Facing Rural Water Supply:

There are a number of problems facing rural water supply in the region. The major ones are:-

i) **Inadequate supply level of schemes**

Many water schemes are operating under capacity or yield inadequate water due to changes in the hydrological cycle brought by human activities mainly deforestation and cultivation of water sources. These activities cause inadequate rainfall and drought and thus disturbing ground water recharge processes.

ii) **Poor maintenance**

Quite a number of water schemes in the region were constructed over 30 years thus due to old age and poor maintenance, their carrying capacity are greatly reduced. Most affected schemes in this case are water pipes, bore holes and pumps which were drilled and installed in the 1960s and 1970s.

iii) **Contamination**

Pollution associated with surface water is another major water problem in the region as the water mainly from streams and rivers need expensive treatment to make it safe for human consumption. But as surface water source get reduced due to deforestation it is expected that after sometime the problem will be minimized as ground water shall be a big source of water than is the case now.

iv) **Lack of Manpower and Equipments**

The region has shortage of working equipments and qualified manpower particularly Engineers, Thus hindering progress of project implementation. More Engineers and replacement of tools and equipments is required.

v) **Communication**

It is difficult to reach some schemes due to transport problems.

vi) **Inflation**

Price increases of construction materials, renders planning as well as implementation of schemes difficult.

vii) **Cost Sharing:**

Most people are still ignorant of cost sharing this fact makes it difficult to involve them in project implementation.

Nevertheless, sensitization seminars are conducted aimed at relaying the cost sharing message. Those in the urban area are required to meet the cost of running and maintenance.

Viii) **Water rights**

In the region there exists a problem of water right. The conflict is between domestic and irrigation water demands. Much water is being abstracted from rivers by traditional irrigation furrows without considering other water users such as for domestic and electricity generation.

4.3.7 Technology:

Gravity schemes are dominant in the region because of the topography of the area. A few existing pumping schemes are used mainly in lower areas. Hand pump equiped shallow wells are used in areas where water table is high. Solar energy is a recent technology and there are very few schemes of this type in the region. Table LXXXI(c) shows various types of water supply technology in common use in the region.

TABLE LIII: TECHNOLOGICAL MIX ADOPTED IN KILIMANJARO REGION, 1995

Type of Technology	No.	%	Remark.
Gravity	96	56	In- expensive Manageable and Sustainable
Hand Pumps	61	36	Manageable Sustainable and Inexpensive
Diesel	7	5	Relatively expensive
Electric	3	3	Expensive
Solar	1	0	Easily manageable and Sustainable
Total	168	100	-

Source: Ministry of Water, Energy and Minerals/Regional water engineer- Kilimanjaro.

4.3.8 Future Strategy:

The region continues to survey and design new water projects under the regional vote for survey and investigations. Design on these schemes are spearheaded normally by Disrict Engineer. Nevertheless it is now becoming difficult for both the region and district councils to finance water schemes because of costs involved, as such, efforts are being made to design small project/water schemes covering one or several villages whose costs the community could afford through cost sharing. Since most schemes are old and worn out, rehabilitation/Extension of the schemes should be done when funds are available.

4.3.9 Urban Water Supply:

Water supply in urban Moshi and Same are well developed compared to other towns while in towns like Hai, Rombo, Moshi rural and Mwanga obtain water from supply schemes which serve both rural and urban communities. Table LXXXII shows the position of water requirement and supply for the district urban centres in the region.

TABLE LXXXII: URBAN WATER DEMAND AND SUPPLY KILIMANJARO REGION, 1992 .

TOWN	Population	Demand M3/Day	Supply M3/Day	% Supply
Moshi(U)	115,386	28,000	7,002	25
Hai	6,200	837	153	18
Rombo	4,700	635	320	50
Mwanga	7,750	1,046	363	35
Same	11,330	1,530	846	55

Source: Regional Water Engineer- Kilimanjaro, Moshi

4.3.10 Urban Water Supply Coverage:

The level of service (coverage) for all the towns including Moshi Municipality is inadequate due to insufficiant water discharges from water sources. Water situations in terms of coverage in urban centres in the region and demand of water sectorwise are shown in tables LXXXII, LXXXIII(a) and LXXXIII(b).

TABLE LXXXIII(a): STATUS OF WATER SUPPLY IN DISTRICT TOWNS IN KILIMANJARO REGION 1997.

Urban Centres	Ward	Village	Estimated Population	Population. Served	% Served
Moshi Urban	16	-	115,386	41,450	36
Hai	11	65	235,847	96,690	41
Rombo	20	57	239,899	93,561	39
Mwanga	16	58	115,827	50,964	44
Same	24	72	202,652	77,010	38
Moshi (R)	27	150	409,430	237,469	58
Total	114	402	1,319,041	597,234	

Source: Regional water Engineer - Kilimanjaro, 1995

TABLE LXXXIII(b): SECTOR WATER DEMAND FOR URBAN CENTRES, KILIMANJARO REGION, 1992

Urban Centres	Population	Sector water Demand							
		Domestic	Industry	Public Institution	Commercial	Education	Hospital	Other Institution	Total
Moshi Urban	145,609	20,586	3,660	1,160	1.2	730	450	400	28,186
Hai	6,200	558	137	42	43	26	17	14	837
Mwanga	4,700	700	172	53	55	30	20	16	1,046
Rombo	7,750	423	12	32	34	20	104	10	635
Same	11,330	1,020	250	76	80	49	30	25	1,530

Source: Kilimanjaro Regional Water Engineer, Moshi.

4.3.11 Sanitation:

Compared to other regions sanitation conditions in Kilimanjaro region could be said to be satisfactory. This could be attributed to the efforts, made by the Ministry of Water and Energy in funding a low cost sanitation programme in the region. UNICEF also

supported sanitation in Hai district as a vital component of Child Survival and Development Project. In Rombo district GTZ is also funding Health Programme aiming at improving sanitation in the area.

TABLE LXXXIV: DISTRIBUTION OF LATRINES IN THE REGION BY DISTRICT:

District	Total No. of H/holds	H/holds with latrines	H/holds without latrines	Coverage (%)
Hai	35,004	29,630	237	84.6
Moshi (R)	62,677	56,310	2,831	89.8
Rombo	40,000	36,076	1,860	90.2
Mwanga	79,487	59,476	219	74.8
Same	42,251	32,018	1,765	75.8
Moshi (U)	12,000	12,000	n.a.	100.0
Total	209,419	181,510	6,912	86.7

Source: Regional Health Officer - Kilimanjaro.

SECTION V

5.0 OTHER DEVELOPMENT ISSUES:

5.1 Gender Development:

5.1.1 Introducation:

The 1988 Census Report indicated that there were more women in all rural districts in Kilimanjaro Region than men. However, the report further observed that in Moshi Municipality there were fewer women than men. For the region as a whole there are 103 women for every 100 men. The Table LXXXV below indicates a breakdown in the difference of gender distribution between rural and urban areas according to family size and number of household in the region.

TABLE LXXXV: GENDER DISTRIBUTION AND FAMILY SIZE DISTRICT IN THE KILIMANJARO REGION 1988

District Status	More men than Women	More Women than Men	Gender % Increase	Number of Household	Average
Hai	-	5,439	5.7 more women	37,318	5.3
Moshi (U)	-	-	-	22,643	4.3
Moshi (R)	-	22,635	14.1 more women	63,540	5.4
Rombo	-	12,729	135 more women	35,648	5.6
Mwanga	-	4,009	9.1 more women	16,486	5.6

Same	-	5,719	7 more women	30,337	5.6
Regional	-	50,535		205,972	5.4

Source: Population Census of Tanzania 1988

5.1.2 **Women Time Schedule:**

Like in many other regions in the country, there is heavy workload placed on women in Kilimanjro region. The heavy workload of women is reportedly intensified by lack of transport facilities. Women are said to be carrying heavy load of their produce, grass, firewood and water on their heads "..... save for those who can afford and tolerate the overcrowded pick-ups and trucks"..... Table LXXXXVI below shows typical daily work schedule for the region's rural women.

TABLE LXXXVI: DAILY TIME-BUDGET OF RURAL WOMEN IN KILIMANJARO REGION

Activity	Time	Hours
Waking up, washing, preparing breakfast and feeding cattle	5.00 a.m	1.0
Eat breakfast then walk to the fields (2-3 km)	6.00-9.45	0.75
Cut and chop bananas stems and leaves cut grass, feed cattle, clean the cow-she	6.45-9.00	3.45
Collecting firewood and grass for cattle	9.00-10.15	1.55
Return home, pounding, milking, feeding cattle	10.15-11.45	1.35
Fetching water (1 to 2km) from water sources, Lunch	11.45-2.45	3.0
Work on the plot where legumes are planted, back home, feed cattles	2.45-4.45	2.0
Go and collect grass again for cattle feeding	4.45-5.45	1.0
Back home take some rest, milking and preparaton of dinner	5.45-9.45	1.0

Source: Kilimanjaro Regional Community Development Office 1994, Moshi

5.1.3 **Economic Groups:**

In response to recommendations by a Team of experts who undertook an indepth research on the "Situation of Women in Kilimanjaro Region in 1990", the region leadership vigorously embarked on the mobilization and creation of awareness amongst the women in the region so as enable them establish economic ventures. Thus by April, 1994 the region had 716 active women economic groups with 14,089 members, Table LXXXVII shows their distribution by district.

TABLE LXXXVII: WOMENT ECONOMIC GROUPS DISTRIBUTION BY DISTRICT KILIMANJARO REGION, 1994

District	Groups	Members
Hai	573	N.A
Moshi (R)	55	5166
Moshi (U)	23	2004
Mwanga	22	1291
Same	30	3907
Rombo	13	1721
Total	716	14,089

Source: Women Affairs Unit - Kilimanjaro Moshi, 1994

5.1.4 **Economic Activities Undertaken:**

Women economic groups in each district are engaged in various and varied economic activities as indicated by Table LXXVIII (a,b,c,e and f) below. Analysis of 1978 and 1988 Census Reports indicates that the proportion of women in the economically active regional population increased significantly between the year 1978 and 1988. On account of their active involmvement in income geneating activites, it may be rightly assumed that women in the rural areas of Kilimanjaro region roughly earn about 30% of their family income. However, a study is needed to confirm this assumption.

TABLE LXXXVIII: ACTIVITIES UNDERTAKEN BY WOMEN GROUP BY DISTRICT KILIMANJARO REGION (A) MOSHI RURAL DISTRICT

Project/Activity	Number of Groups	Members
Shops	16	2,569
Grinding Machines	10	432
Transportation	3	300
Sewing	6	211
Hotel/restaurants	3	150
Gardening	8	840
Livestock keeping	1	40
Local Bars	8	624
Total	55	5166

(b) Moshi urban District

Project/Activity	Number of Groups	Members
Shops	13	2,569
Sewing	3	432
Hotel/Restaturant	2	300
Weaving	1	211
Farming	2	150
Tye and Dye	1	840
Local bars	1	40
Total	23	624

(d) Hai District

Project/Activity	Number of Groups	Members
Shops	564	N.A
Grinding Milling	N.A	69
Transportation	1	N.A.
Hotel/Restaurants	2	N.A.
Farming	1	25
Milk Collection	-	-
Local Bars	4	N.A
Bakery	1	N.A.
Total	573	N.A

(e) Rombo District

Project/Activity	Number of Groups	Members
Shops	8	1,312
Grinding Milling	-	-
Machines	2	87
Sawmills	1	150
Sewing	2	172
Total	13	1721

(f) Same District

Project/Activity	Number of Groups	Members
Shops	5	405
Grinding/Milling	2	306
Sewing	10	323
Farming	2	95
Pottery	2	122
Bakery	1	40
Total	22	1,291

Source: Regional Community Development Office, 1988

5.1.5 Day Care Centres

Since there is heavy workload on women in Kilimanjaro region, the need for child care system is quite big. By the end of 1994 the region had 325 Day Care Centers (Nurseries) with a total of

15,387 under 7 years children. The average number of children per centre is 47. The Day Care Centres are principally run by voluntary agencies, parent organisations and churches. Not a single Day Care Centre is run by the government. In 1989 it was estimated by the Regional Community Development Office that only about 6% of the total number of pre-school Children enjoyed Day Care Centres services in the region. This is a small portion compared to the estimated, pre-school children, totalling 206,450 in that year.

5.2 Cooperative Societies.

The region has a number of 266 cooperatives, most being agricultural coops. followed by savings and credit societies as observed in the table below (LXXXIX).

TABLE LXXXIX: COOPERATIVE SOCIETIES BY TYPE AND DISTRICT, KILIMANJARO REGION, 1998

Type of Society	District						
	Hai	Rombo	Moshi (R)	Mwanga	Same	Moshi (U)	Total
Agricultural	41	16	40	10	15	-	122
Saving & Credit (SACCOS)	10	11	31	6	1	19	78
Consumer Coops.	2	2	2	1	2	16	33
Industrial	-	3	-	1	-	4	10
Tranposrt	-	-	-	-	-	+	+
Fishinmg	-	-	-	-	-	1	1
Livestock	-	1	1	-	-	-	2

Others	6	1	3	1	1	8	2
Total	69	34	77	19	19	48	266

Source: Regional Commissioner’s Office, Kilimanjaro

5.3 Programmes and Various Activities Supported By NGO's in Kilimanjaro Region 1995

Name of Organisation	Activities
1. Community Development Trust Fund (CDTF)	Provision of funds, material and equipment to rural development programmes like: (i) Afforestration (ii) Agricultural Activities (iii) Water and other Environmental conservation related issues (iv) Provides Aids to organised groups institution and individuals for specific projects
2. Kilimanjaro Environmental Development Association (KEDA)	Supports and gives Aids to Environmental Conservation Activities especially Tree-planting in the region
3. Diocese of Same	Tree-planting Activities and water conservation projects
4. Diocese of Moshi	Funds and provides support to Environmental conservation projects
5. KKKKT Northern Diocese	Supports and Aids in Tree-planting projects on Community self-help basic
6. Roman Catholic Mission Diocese of Same	Provide funds for water supply projects in Ngulu, Mgagao and Pangaro villages in Mwanga District
7. Evangelical Lutheran Church of Tanzania Northern Diocese	Funds for supply of water to about 90,000 people in Shari, Mamba, uswaa, Roo, Kwasadala, Kambi ya Nyuki and Boma ya Ng'ombe villages in Hai District

8.	Dambo Development Association for Mbokome	Supply water to 8171 people in Kimambo, Natiro and Mwika Villages
9.	MACDA Marangu Community Development Association	Supply water to 300 resident of Marangu West in Moshi Rural District
10.	Red Cross of Tanzania	Support lower Moshi Villagers, in construction of VIP latrines provision of other social services such as construction of shallow wells and health-care
11.	Same Agricultural Improvement Project	(i) Organize farmer into farming groups (ii) Offer training, funds, and supportive service in agriculture and Livestock husbandry (iii) Train farmers on improved irrigation methods and the use of draught animals in cultivation
12.	Traditional Irrigation Improvement Programme (TIP)	(i) Aid rehabilitation of traditional Cannals in Chome, Mamba, Vunta, and Gonja Villages (ii) Water source (intake) Conservation projects in Same District (iii) Offers funding and support for "Hingilili Valley" project in Mwanga and Same district respectively

13.	UNDP Household Grain Storage Development	(i)	UNDP Funds and offers training on improved grain storage methods to Makanya Hedaru, Mabirion Kisiwani, Njoro, Ngonja and Mkonga Villages in Same District
		(ii)	Construction of Grain Storage Demonstration Structures throughout the Region
		(iii)	Provide supportive logistics to the project e.g. vehicles, motorcycle etc.
14.	DANIDA Mission	(i)	Support, construction and rehabilitation of Mpirani Bombo road
		(ii)	Strengthening Women and Children Health services in Same and Gonja Hospitals
		(iii)	Strengthening Water supply services in Same Urban
		(iv)	Support women social and economic projects such as Fish-pond Construction in Chome and Rombo villages and Beekeeping in other parts of Same District
		(v)	Supports community based self-help development projects like school construction. Water supply and health
15.	EDF MICRO PROJECT	Provide; Milling machines to individuals or goups in Same District.	

16.	World Vision Tanzania Northern Zone	Provides support in the following sectors:- (i) **Water** (a) Enhancing the level of water supply services by providing items like construction materials pipes and cement (b) Construction of water canals for irrigation purposes. (ii) **Education:** Support the construction of classrooms and provision of desks (iii) **Health** Construction of clinics and provision of public health education
17.	International Labour Organisation (ILO)	Provides support to youth and Women group projects by giving Loans for project such as:- (i) Toiloring (ii) Restaurant (Migahawa) (iii) Shoe Making (iv) Cattle keeping
18.	Kanisa la Kiinjili la Kilutheri Tanzania	Provides support in the following sectors: **Health:** Construction of Gonja Hospital and Manka Dispensary **Education:** Construction of Manka Secondary School Construction of Hostels at Same and Hedaru
19.	Kanisa Katoliki Dayosisi Tanzania	(i) Support to Water Supply Project at Vudee Village (ii) Supports Diary farming in the District (iii) Rehabilitation of health Centres

20.	Water Aid	Construction of water pipes in New-Keni and Old-Keni mengeni Water Project in Rombo District.
21.	German GTZ	(i) Support to water supply project serving Marua Fughatie, Nanjara, Makindi, ushiri and E.K.T.M. In Rombo District (ii) Provides technical support, funds and material to promote Artisan, crafts, Trade and small scale industries in the district.
22.	Sasakawa Global 2,000	Provides loans to buy farm inputs to Ibukoni, Alemi Ikwini and Shimbi Mashariki villages in Rombo District.
23.	ILO RYTHE Project	Support youth economic activities in the Districts such as poultry farming.

SECTION VI

6.0 POTENTIAL INVESTIMENT AREAS

6.1 Agriculture:

Agriculture is the main economic activity contributing over 75 percent employment to the rural population and contributing greatly about 60% to the region's GDP. The Highland and Intermediate zones are the most agricultural potential areas in the regions. They are fertile, with good reliable rains and moderate temperatures. With these much agricultural advantages their zones are capable of producing a variety of food and cash crops both tropical and temperate ones and are much suited for dairly farming. However, these two zones are highly populated with densities ranging from 250 persons/sqkm in the intermediate zone to 650 people in the highland zone. The lowland zone is relatively dry with unrealiable rains. It is in this zone that population density is low less than 50 people/sq km. Irrigation farming is popular in this zone. River water is the main source for irrigation.

Agricultural land occupied 6,433 sq km regionwise, out of this 333,640 hekta is under cultivation. Important cash crops being coffee, cotton, sugar cane, sisal, sunflower, beans and wheat. Important food crops are bananas, bean and maize. In the highland areas average hectarage owned per family is 0.5 while in lowlands it is ajbout 1.5 hectares/family. The much scramble for land in the region has led much exodus to other regions the country.

There are about 52,000 heactares of land under traditional irrigation in the region. Crops like coffee, bananas, vegetables and fruits are grown in these areas. Modern irrigation is at Arusha Chini area with 7,800 ha. Under sugar cane. Lower Moshi and Ndungu are among modern irrigation schemes with about 900-1100 ha. Problems facing irrigation activities are mainly inadequate water supply for irrigation mainly river water, and proper irrigation management systems. In order to curb this bottleneck the region needs to explone the possibility of getting underground water or attempts should be made to draw water from Miwaleni project/kikuletwa.

6.2 Livestock:

Dairy cattle farming has much potential in the highland and intermediate zones. Introduction of Heifer Project International has proved successful and of much benefit to peasant farmers in the region. Further expansion of this project will not only raise their incomes from more milk sales but will too positively affect development of coffee/bananas farms by increasing the level of soil fertility through more cattle manure application.

Another area of potential investment in livestock lies in strengthening of Artificial insemination project. Timely service required by livestock keepers is very essential in the improvement of the local breed or in multiplication of better dairy cattle. The already existing A.1 centres, many of them are non functioning through different reasons. Currently only 8 centres out of the 24 centres are rendering service. The district concils and NGO could

be effective partners in the development or rehabilitation of this vital sectoral service.

6.3 Forestry:

Forest resources are being depleted through encroachment by human activities including search for fuelwood and expansion of agricultural land. Establishment of new forest reserves or expansion of the existing ones are the most effecting ways to curb enviromental degradation in the threatened areas. Sensitisation of local communitites and institutions into more and effective participation in establishment of both private and public afforestation plantations should be encouraged. More free seedlings should be raised by participants themselves rather than the government which seems to be less effective. Further more, promotion of fuel saving stoves and fuel saving cooking techniques should also be invested in.

6.4 Tourism

The region has abundant tourist attraction potentials. It is believed that if the potential sites were developed and properly managed the region would be ranked second to Arusha. Some of these attratctions are:-

- Mt. Kilimanjaro; the highest mountain in Africa, famous for tough mountaineering expeditions and the only one with snow in the tropics.
- Kilimanjaro National Park; it covers 756 Sq. Km, famous for having variety of wild animals.

- The Rare Forest in Kilimanjaro; conserves the rare species of trees i.e. Stigma 'Msoo'. The species is only found in this forest in the whole world.
- The Mwariko Art Gallery; famous for displays of cultural activities such as carvings and traditional dances.
- Lake Challa; attractive potential site for developing tourist resort.

6.5 Industrial Sector:

Establishment of small scale industries is possibly the most appropriate approach of solving the problem of unemployment in the region what has been achieved so far in this sector is well appreciated, however, the problem of much unemployment in both rural and urban areas is still glearingly big almost in all the region's districts. Further investment in appropirate agrobased and service oriented small scale industries is greatly encouraged for job creation opportunities in the region. The existence of a network of electricity power supply in the rural areas (30.3% of all villages in the region are supplied with this farm of energy) encourages the idea of further investment into appropriate industries in the region.

6.6 Women Development:

Women economic contributions to family incomes is very significantly appreciated. Women in Kilimanjaro region have excelled in this. Women in rural areas in the region roughly earned about 30 percent of their family income. These contributions by

women could be enhanced through provision of soft loans and other credit facilities through women groups.

ANNEX A

KILIMANJARO REGION IN A NUTSHELL

1.0 **GENERAL:**

1.1 (a) **Location:**

Kilimanjaro region is located in the north eastern part of Tanzania Mainland, between latitudes $2^0\ 25^1$ and $4^0\ 15^1$ and longitudes $36^0\ 25^1\ 3^{11}$ and $38^0\ 10^1\ 45^{11}$ East of Greenwich.

(b) **Borders:**

North	-	Republic of Kenya
West	-	Arusha Region
South	-	Arusha Region
South East	-	Tanga Region

1.2 **Area:**

Land Area - 13,209 sq.k.m or about 1.4% of Tanzania Mainland area.

1.3 **Administrative Units:**

Districts	-	6
Division	-	26
Wards	-	114
Villages	-	402

1.4 **Population:**

1988 Census - 1,108,699 people

Population annual growth rate	-	2.1% perannum
Population Projection the year 2000	-	1,509,750
Population density (1988)	-	84 people/sq.k.m
Average household size (1988)	-	5.3 people

1.4 **Climate:**

Rainfall - There are two rainy seasons, April-May (major one) and September-November (minor one) mean annual rainfall 500mm in lowlands and 2,000 mm in the Highland zone.

2.0 **ECONOMIC ACTIVITIES:**

The greater part of the region's populaiton heavily dependent on agriculture and livestock keeping for their livelihood.

Agriculture:

Food crops raised are: Beans, bananas, fruits, maize, sorghum, cassava, paddy and sweet potatoes

Cash crops include:		Coffee, wheat, barley, cotton, cardamon, sisal,
Arable land	-	6,433 sq.k.m.
Cultivated land	-	333,640 ha.

Livestock Keeping:

Including dairy cattle in the highland and intermediate zones, indigenous cattle in the lowland zone; sheep and goats, piggery and poultry.

-Livestock Facilties:

Artificial Insemination Centres

Total	-	24

Operating Centres	-	8
Dips	-	56
Abattoirs	-	31
Crushes	-	29
Veterinary Health Centres	-	26
Hides and skin sheds	-	4

-Livestock Population (1993/94):

Cattle	-	485,448
Goats	-	490,338
Sheep	-	206,904
Donkeys	-	202,378
Pigs	-	14,873

Forestry:

Area under forests	-	139,832 Ha.
Area under forest reserves	-	134,377 Ha.
Number of forest reserves	-	15

2.1 **Regional Economy:**
Regional GDP at Current Prices:

Year	**Tshs(Millions)**	**USA Dollars(Million)**
1980	1,950	237
1985	2,991	181
1990	29,215	148
1994	74,898	132

Regional GDP Per Capita at Curretnt Prices:

Year	Tshs(Millions)	USA Dollars(Million)
1980	2,073/=	252
1985	2,865/=	174
1990	24,975/=	127
1994	55,716	101

Average Regional GDP Contribution to National GDP

Year	% Contribution
1980	5
1985	3
1990	4
1994	4

3.0 SOCIAL SERVICES:

3.1 Education:

(a) **Primary School Facilities (1998)**

-	Number of Schools	-	707
-	Number of Pupils	-	253,551
-	Classrooms	-	4,628
-	Shortage of Classrooms	-	1,236
-	Teachers houses	-	595
-	Shortage of Teachers houses	-	6,788
-	Desks	-	92,960

- Shortage of desks - 16,313
- Chairs - 7,831
- Shortage of chairs - 6,528

(b) **Teachers Status (1997)**

III A	-	3,797
III B	-	4,512
Total	-	8,309

(c) **Nursery Schools (1997):**

Government	-	65
Private	-	345
Total	-	410
Pupils	-	19,660

(d) **Secondary Schools (1997):**

Government	-	43
Private	-	69
Total	-	112

3.2 **Water:**

- Rural population coverage with safe drinking water (1997)-45%
- Urban population served with safe drinking water (1997) - 55%
- Types of water schemes/sources (1997)
  - (a) Pumping (powered) - 13
  - (b) Gravity - 96
  - (c) Hand pumps - 61
- Sanitation coverage - 86.7%

3.3 Health Facilities (1997)

	Total	Gov't	Private

Hospitals	16	5	11
Health Centres	18	17	1
Dispensaries	361	131	230
MCH - Clinics	213		

4.0 ECONOMIC INFRASTRUCTURES:

4.1 (a) Roads:

Trunk roads	-	640km
Regional roads	-	807km
District and Feed roads	-	2272 km
Total kilometers	-	3,719 km.

(b) Railways:

Moshi	-	Voi (Republic of Kenya)
Moshi	-	Tanga - Dar es Salaam
Moshi	-	Arusha

(c) Air Transport:

Minor Airport: Charter air planes in Moshi Town.

4.2 Energy:

144 villages supplied with electricity out of 402 villages which is about 36%.

5.0 OTHER DEVELOPMENT ISSUES:

Women Economic Groups (1994)

Groups	-	716
Members	-	14,089

5.1 Cooperative Societies

District	Number
Hai	69
Rombo	34
Moshi ®	77
Mwanga	19
Same	19
Moshi (Urban)	48

Total	266

ANNEX B

HAI DISTRICT

1.0 GENERAL:

1.1 Location/borders:

East	-Moshi Rural District
South	-Simanjiro District of Arusha Region
West and North East	-Arusha Region
North and North East	-Republic of Kenya and Rombo district respectively

1.2 Area:

Land area	-	2,112 sq.k.m

1.3 Administrative Units:

Divisions	-	4
Wards	-	11
Villages	-	65

1.4 Population:

1988 Census	-	196,901
Population annual growth rate	-	1.3% people
Prejection year 2000	-	233,924 people
Population density (1988)	-	96 people/sq.km.
Average household size (1988)	-	5.3 people

1.5 Climate:

Rainfall - 700-2000mm per annum

Temperature - 15^0 C - 30^0C

2.0 ECONOMIC ACTIVITIES:

- **Agriculture being main activity**

  Food Crops: Maize, beans, potatoes and bananas

  Cash Crops: Coffee, wheat and barley

- **Livestock Facilties:**

Verterinary Health Centres	-	9
A.I. Centres	-	6 (2 operating)
Drips	-	12
Crushes	-	9
Livestock Markets	-	3
Large Livestock farms	-	18
Annual Milk production	-	30 million Liters.

- **Livestock Population (1993/94) - Estimates**

Cattle	-	94,753
Goats	-	88,454
Sheep	-	33,237
Donkeys	-	3,976

3.0 SOCIAL SERVICES

3.1 Education:

(a) Primary School Facilities (1998)

- Number of Schools	-	140
- Pupils	-	41,568

-	Classrooms	-	806
-	Shortage of classrooms	-	333
-	Teachers houses	-	141
-	Shortage of Teachers houses	-	1,330
-	Desks	-	13,475
-	Shortage of desks	-	7,309
-	Chairs	-	1,284
-	Shortage of chairs	-	1,355

(b) **Teachers Status (1995)**

III A	-	713
Male	-	255
Female	-	458
III B	-	763
Male	-	210
Female	-	553

(c) Nursery Schools (1997)

Government	-	4
Private	-	92
Pupils	-	182

(d) **Secondary Schools (1997):**

Government	-	5
Private	-	11

3.2 **Health (1997)**

Hospitals	-	3
Rural Health Centres	-	3
Dispensaries	-	58

3.3 **Water:**

- Rural population coverage with safe drinking water (1997) - 39%
- Urban population coverage - 18%
- Types of schemes/sources
  - (a) Pumping - 6
  - (b) Gravity - 13
  - (c) Springs - 16
  - (d) Rivers - 10

4.0 ECONOMIC INFRASTRUCTURES:

4.1 Roads:

Trunk roads	-	27 km
Regional roads	-	109.0 km
District roads	-	206 km
Feeder roads	-	184 km.
Total:	-	526.0 km

4.2 Energy:

26 villages with electricity out of 65 villages.

ANNEX C

MWANGA DISTRICT

1.0 GENERAL:

1.1 Location/Borders:

Sourth	-	Same District
West	-	Moshi Rural District and Arusha Region
North/East	-	Republic of Kenya

1.2 Area:

Land Area	-	2,698 sq.km.

1.3 Administrative Units:

Divisions	-	5
Wards	-	16
Villages	-	58

1.4 Population:

1988 Census	-	98,260 people
Population annual growth rate	-	4.7%
Population Projection the year 200-		172,711 people
Population density	-	45 people/sq.km.
Average household size (1988)-		5.6 people

1.5 Climate:

Rainfall	-	700-1000mm per annum
Temperature	-	20^0 C - 30^0 C

2.0 **ECONOMIC ACTIVITIES:**

- Agriculture being the main economic activity, producing:
  Food crops: Maize, beans, paddy, sorghum, cassava, sweet potatoes, bananas
  Cash crops: Coffee and Cotton

- **Livestock:**
  Diary cattle in highlands indigenous cattle, goats, and sheep

- **Livestok Facilities**

A.I. Centre	-	3 (Operating)
Abattoirs	-	16
Crushes	-	5
Veterinary Health Centres	-	8
Hides/skin sheds	-	2
Dips	-	13

- **Livestock Population (1993/94) - Estimates**

Cattle	-	82,915
Goats	-	98,515
Sheep	-	28,629
Donkeys	-	2,104
Pigs	-	724

3.0 SOCIAL SERVICES:

3.1 Education:

(a) **Primary School Facilities (1998)**

-	Number of Schools	-	89
-	Pupils	-	26,130
-	Classrooms	-	546
-	Shortage of classrooms	-	77
-	Teachers houses	-	39
-	Shortage of Teachers houses	-	613
-	Desks	-	9,745
-	Shortage of Desks	-	3,320
-	Chairs	-	1,303
-	Shortage of Chairs	-	230

(b) **Teachers Status (1997)**

III A	-	430
Male	-	211
Female	-	219
III B	-	428
Male	-	156
Female	-	272

(c) **Narsery Schools (1997):**

Government	-	24
Private	-	15
Pupils	-	183

(d) **Secondary Schools (1997):**

	Government	-	7
	Private	-	13

3.2 **Health (1997)**

Hospitals	-	1
Rural Health Centres	-	3
Dispensaries	-	48

3.3 **Water:**

- Rural population coverage with safe drinking water (1997) - 38%
- Urban population coverage - 35%
- **Types of Schemes/Sources:**

(a)	Pumping	-	3
(b)	Gravity	-	8
(c)	Shallow wells	-	56
(d)	Pumping Machine	-	3

4.0 **ECONOMIC INFRASTRUCTURES:**

4.1 **Roads:**

Trunk roads	-	50 kms
Regional roads	-	193 kms
District roads	-	141 kms
Feeder roads	-	122 kms
Total	-	506 kms

4.2 **Energy:**

22 villages supplied with electricity out of 58 villages

ANNEX D

SAME DISTRICT

1.0 **GENERAL:**

1.1 **Location/Borders**

North-West	-	Mwanga District
South-East	-	Tanga Region
South-West	-	Arusha Region
North-East	-	Republic of Kenya

1.2 **Area:**

Land Area	-	5,186 sq.kms.

1.3 **Administrative Unites:**

Divisions	-	6
Wards	-	24
Villages	-	72

1.4 **Population:**

1988 Census	-	170,053 people
Population growth rate	-	1.4%
Population Projection the year 2000	-	101,162
Population density (1998)	-	5.6 people

1.5 **Climate:**

Rainfall	-	500-2000mm/annum
Temperature	-	15^0C - 30^0C

2.0 ECONOMIC ACTIVITIES

- Majority of the people engaged in agricultural activities and livestock farming.
  Main food crops grown: Maize, beans, sorghum, cassava, sweet potatoes, paddy, irish potatoes, bananas
  Cash crops: Coffee, cotton, cardamon, sunflower and sisal

- **Livestock**
  Keeping of indigenous cattle, goats and sheep

- **Livestock Facilities:**

A.I. Centres	-	2(Non Operating)
Abattoirs	-	4
Crushes	-	6
Veterinary Health Centres	-	9
Hides and skin sheds	-	2
Dips	-	9

- **Livestock Population (1993/94) - Estimates**

Cattle	-	123,259
Goats	-	110,893
Sheep	-	37,345
Donkeys	-	5,918

3.0 SOCIAL SERVICES:

3.1 Education:

(a) **Primary School Facilities (1998)**

- Number of Schools - 141

-	Number of pupils	-	40,964	
-	Classrooms	-	839	
-	Shortage of Classrooms	-		224
-	Teachers houses	-		126
-	Shortage of Teachers houses	-		1,235
-	Desks	-		17,313
-	Shortage of desks	-		- (surplus 302)
-	Chairs	-	891	
-	Shortage of Chairs	-		1,724

(b) **Teachers Status (1997)**

III A	-	603
Male	-	360
Female	-	243
III B	-	758
Male	-	340
Female	-	418

(c) **Nursery Schools (1997)**

Government	-	24
Private	-	18
Pupils	-	1,241

(d) **Secondary Schools (1997):**

Government	-	12
Private	-	7

3.2 **Health (1997)**

Hospitals	-	2

Rural Health Centres	-	3
Dispensaries	-	55
MCH Clinics	-	42

3.3 **Water:**

- Rural population coverage with safe drinking water (1997) - 44%
- Urban population coverage 38%

- Types of Schemes/Sources
  - (a) Pumping - 5
  - (b) Gravity - 20
  - (c) Pumping Engine - 5
  - (d) Shallow wells - 2

4.0 ECONOMIC INFRASTRUCTURES:

4.1 Roads:

Trunk roads	-	191 kms
Regional roads	-	163 kms
District roads & Feeder roads	-	414 kms.
Total	-	768 kms

4.2 Energy:

16 villages supplied with electricity out of 72 villages

ANNEX E

ROMBO DISTRICT

1.0 GENERAL:

1.1 Location/Borders:

West	-	Hai District
North	-	Republic of Kenya
East	-	Republic of Kenya
South	-	Moshi Rural District

1.2 Area:

Land Area	-	1,442 sq.km.

1.3 Administrative Units:

Divisions	-	5
Wards	-	20
Villages	-	57

1.4 Population:

1988 Census	-	200,859 people
Population annual growth rate	-	2.4%
Population Projection the year 200	-	267,897 people
Population density (1988) people/sq.km.	-	136
Average household size (1988)	-	5.6 people

1.5 Climate:

Rainfall	-	700-1600mm per annum

Temperature - 14^0 C - 25^0 C

2.0 ECONOMIC ACTIVITIES:

- The major economic activity is agriculture and dairy farming (zero grazing).

  Main food crops grown: Bananas, finger millet, maize, beans, groundnuts, round potatoes
  Cash Crops: Coffee

- **Livestok Facilities**

A.I. Centre	-	3(2 operating)
Dips	-	12
Abattoirs	-	6
Crushes	-	9
Veterinary Health Centres	-	Nil
Hides/skin sheds	-	Nil

- **Livestock Population (1993/94) - Estimates**

Cattle	-	59,102
Goats	-	150,978
Sheep	-	55,622
Pigs	-	10,618

3.0 SOCIAL SERVICES:

3.1 Education:

(a) **Primary School Facilities (1998)**

-	Number of Schools	-	122
-	Number of Pupils	-	50,991
-	Classrooms	-	733
-	Shortage of classrooms	-	248
-	Teachers houses	-	130
-	Shortage of Teachers houses	-	1,207
-	Desks	-	18,906
-	Shortage of Desks	-	2,382
-	Chairs	-	1,563
-	Shortage of Chairs	-	869

(b) **Teachers Status (1997)**

III A	-	588
Male	-	279
Female	-	309
III B	-	749
Male	-	270
Female	-	479

(c) **Narsery Schools (1997):**

Government	-	Nil
Private	-	105
Pupils	-	10,132

(d) **Secondary Schools (1997):**

Government	-	6
Private	-	8

3.2 **Health (1997)**

Hospitals	-	2

Rural Health Centres	-	3
Dispensaries	-	46
MCH Clinics	-	26

3.3 **Water:**

- Population (Rural) coverage with safe drinking water (1997) - 41%
- Urban population coverage - 39%

- **Types of Water Schemes/Sources (1995):**
  (a) Pumping - 2
  (b) Gravity - 14
  (c) Pumping Eng. - 2

4.0 **ECONOMIC INFRASTRUCTURES:**

4.1 **Roads:**

Trunk roads	-	44 kms
Regional roads	-	108 kms
District roads	-	55.5 kms
Feeder roads	-	562.5 kms
Total	-	770 kms

4.2 **Energy:**

24 villages supplied with electricity out of 57 villages

ANNEX F

MOSHI RURAL DISTRICT

1.0 GENERAL:

1.1 Location/Borders:

West	-	Hai District
North	-	Rombo District
East	-	Rombo District
South-East	-	Mwanga Region
South-West	-	Arusha Region

1.2 Area:

Land Area	-	1,713 sq.km.

1.3 Administrative Units:

Divisions	-	4
Wards	-	27
Villages	-	150

1.4 Population:

1988 Census	-	342,553 people
Population annual growth rate	-	1.9%
Population Projection the year 2000	-	430,276 people
Population density (1988)	-	224 people/sq.km.
Average household size (1988)	-	5.4 people

1.5 Climate:

Rainfall	-	700-2000mm per annum

Temperature - 15^0 C - 25^0 C

2.0 ECONOMIC ACTIVITIES:

- Agriculture and livestock keeping are the major economic activities in the district.

  Food crops grown: Bananas, maize and beans.

  Cash crops grown: Coffee and Sunflower

- **Livestock**

  Keeping mainly of dairy type under zero grazing in the upland areas. Range livestock keeping is carried out in the howland zone.

- **Livestock Facilities**

A.I. Centre	-	10(3 operating)
Dips	-	10
Abattoirs	-	5
Crushes	-	Nil
Veterinary Health Centres	-	Nil
Hides/skin sheds	-	Nil

- **Livestock Population (1993/94) - Estimates**

Cattle	-	125,419
Goats	-	41,498
Sheep	-	52,071
Donkeys	-	190,380
Pigs	-	3,531

3.0 SOCIAL SERVICES:

3.1 Education:

(a) **Primary School Facilities (1998)**

-	Number of Schools	- 191
-	Number of Pupils	- 74,836
-	Classrooms	- 1,418
-	Shortage of classrooms	- 231
-	Teachers houses	- 137
-	Shortage of Teachers houses	- 1788
-	Desks	- 27,331
-	Shortage of Desks	- 4,366
-	Chairs	- 2,347
-	Shortage of Chairs	- 1,759

(b) **Teachers Status (1995)**

III A	-	1,122
Male	-	460
Female	-	662
III B	-	1518
Male	-	423
Female	-	1,095

(c) **Narsery Schools (1997):**

Government	-	7
Private	-	109
Pupils	-	7,058

(d) **Secondary Schools (1997):**

Government	-	10
Private	-	24

3.2 **Health (1997)**

Hospitals	-	4
Rural Health Centres	-	4
Dispensaries	-	85
MCH Clinics	-	59

3.3 **Water:**

- Population (Rural) coverage with safe drinking water (1997) - 58%

- **Types of Water Schemes/Sources (1995):**

(a)	Pumping	-	-
(b)	Gravity	-	29
(c)	Shallow wells	-	3
(d)	Pumping Eng.	-	Nil

4.0 **ECONOMIC INFRASTRUCTURES:**

4.1 **Roads:**

Trunk roads		-	68 kms
Regional roads		-	234 kms
District roads	and Feeder roads	-	587 kms
Total		-	889 kms

4.2 **Energy:**

26 villages supplied with electricity out of 150 villages

ANNEX G

MOSHI URBAN DISTRICT

1.0 GENERAL:

1.1 Location/Borders:

West	-	Hai District
North	-	Moshi Rural District
East	-	Moshi Rural District
South	-	Moshi Rural District

1.2 Area:

Land Area	-	58 sq.km.

1.3 Administrative Units:

Divisions	-	2
Wards	-	16
Villages	-	Nil

1.4 Population:

1988 Census	-	96,838 people
Population annual growth rate	-	6.2%
Population Projection the year 200-		203,780 people
Population density (1988)	-	3,339 people/sq.km.
Average household size (1988)-		4.3 people

1.5 Climate:

Rainfall	-	800-1000mm per annum
Temperature	-	25^0 C - 30^0 C

2.0 **ECONOMIC ACTIVITIES:**

- Wage employment in government, public service and private enterprises.
- Agriculture and livestock a very limited scale, producing crops like maize, beans, sweet potatoes, bananas and vegetables.
- **Livestock**
  Keeping of dairy cattle in stalls, piggery, sheep and goats.

3.0 **SOCIAL SERVICES:**

3.1 **Education:**

(a) **Primary School Facilities (1998)**

-	Number of Schools	- 24
-	Number of Pupils	- 19,062
-	Classrooms	- 286
-	Shortage of classrooms	- 123
-	Teachers houses	- 22
-	Shortage of Teachers houses	- 615
-	Desks	- 6,190
-	Shortage of Desks	- -(surplus 762)
-	Chairs	- 443
-	Shortage of Chairs	- 611

(b) **Teachers Status (1997)**

III A	-	341
Male	-	55
Female	-	286
III B	-	296

Male - 21
Female - 275

(c) **Narsery Schools (1997):**
Government - 6
Private - 6
Pupils - 864

(d) **Secondary Schools (1997):**
Government - 3
Private - 6

3.2 **Health (1997)**
Hospitals - 4
Rural Health Centres - 2
Dispensaries - 69
MCH Clinics - 9

3.3 **Water:**

- Urban population served with clean water (1997) - 36%

- **Types of Water Schemes/Sources (1995):**
  (a) Pumping - 2
  (b) Gravity - 2
  (c) Pumping Eng. - 2

4.0 **ECONOMIC INFRASTRUCTURES:**

4.1 **Roads:**

Tarmac roads	-	60 kms
Earth roads	-	200 kms

ANNEX H

INFORMATION ABOUT TANZANIA

1.1 GENERAL

Location: (29_0E-41^0; 1^0S - 12^0S)

Land Frontiers:

To the North:	Kenya and Uganda
To West:	Burundi, Rwanda and Zaire
To South:	Zambia, Malawi and Mozambique
To East:	Indian Ocean

AREA OF MAINLAND

Land area	881,289 Sq.Km.
Water area (Inland)	61,495 Sq.Km.
Tanzania area	942,784 Sq.Km.

TANZANIA MAINLAND AREA BY REGIONS (SQ KM)

Total 942,784

Arusha	82,428	Morogoro	70,799
Coast	32,407	Mwanza	35,248
Dodoma	41,311	Lindi 66,046	
Iringa	58,936	D'Salaam	1,393
Kigoma	45,066	Rukwa 75,240	
Kagera	39,627	Ruvuma 66,477	

Kilimanjaro	**13,309**	Shinyanga	50,781
Mara	30,150	Singida	49,341
Mbeya	62,420	Tabora	76,151
Mtwara	16,707	Tanga	26,808

Population

TOTAL POPULATION AND LIFE EXPECTANCY FOR TANZANIA - BY REGIONS, 1967, 1978, 1988, 1996:

REGION	TOTAL POPULATION				LIFE EXP. 1988	
	1967 (No.)	1978 (No.)	1988 ('000)	1996** ('000)	M Yrs	W Yrs
Dodoma	709,380	972,005	1,234.9	1,472.5	57	58
Arusha	610,474	926,223	1,348.4	1,784.0	46	51
Kilimanjaro	**652,722**	**902,437**	**1,106.0**	**1,703.5**	**50**	**50**
Tanga	771,060	1,037,767	1,307.3	1,521.8	45	47
Morogoro	682,700	939,264	1,254.0	1,519.4	44	47
Coast	428,041	516,586	636.5	740.9	44	45
Dar es Salaam	356,286	843,090	1,357.6	1,945.7	47	49
Lindi	419,853	527,624	645.0	744.8	57	62
Mtwara	621,293	771,818	887.4	976.7	46	48
Ruvuma	395,447	561,575	781.4	1,001.3	46	48
Iringa	689,905	925,044	1,206.0	1,472.9	45	48
Mbeya	753,765	1,079,864	1,472.7	1,857.0	45	48
Singida	457,938	613,949	789.9	949.4	44	48
Tabora	502,068	817,907	1,033.8	1,232.6	46	50
Rukwa	276,091	451,897	693.3	954.7	44	47
Kigoma	473,443	648,941	857.8	1,047.6	48	50
Shinyanga	899,468	1,323,535	1,768.6	2,194.83	48	51
Kagera	658,712	1,009,767	1,358.8	1,659.5	54	55
Mwanza	1,055,883	1,443,379	1,874.4	2,270.9	53	54
Mara	544,125	723,827	968.6	1,202.0	48	51
Tanzania Mainland	11,958,654	17,036,499	22,582.4	28,252.2	49	51
Zanzibar North	56,360	77,017	97.1	119.0	46	47
Zanzibar South	39,087	51,749	70.2	91.8	45	50
Zanzibar Urban	95,047	142,041	208.4	290.4	46	52
Pemba	72,015	106,290	137.4	172.6	46	48
Pemba	92,306	99,014	127.7	160.4	45	50
Zanzibal Is.	354,815	476,111	640.7	834.2	46	49
Tanzania United Rep.	12,313,469	17,512,610	23,223.1	29,086.4	47	50

Note: The projections are based on the national Population Census of 1988, and the calculated growth rates since the 1978 census.

Source: Bureau of Statistics.

Land Use

	(Ha (millions)	Proportion (Percentage)
Small holder cultivation	4.1	5
Large scale agriculture	1.1	1
Grazing Land	35.0	39
Forest and Wood Lands	44.0	50
Other Lands	4.4	5
Total	88.6	100

Arable Land:

Arable Land (Ha)	3,634,000

Lakes

Victoria	34,850 sq km	
Tanganyika	13,350 sq km	
Nyasa	5,600 sq km	
Rukwa	2,850 sq km	
Eyasi	1,050 sq km	
Natron	900 sq km	
Manyara		320 sq km

Mountain summits (metres above sea level)

Kilimanjaro	5,895
Meru	4,566

Climate

(a) Rainfall

Main rain season on the coast is between March and May and the second season is between October and December. Rainfall is well distributed throughout the year but there is a peak during March and May.

Average maximum temperature (degrees centigrade)

	Jan.	**Apr.**	**July**	**October**
Dar es Salaam	31.6	30.1	28.6	31.3
Arusha	28.9	25.3	21.1	27.3
Dodoma	31.4	28.4	26.0	30.2

Average manimum tempereture (degrees centigrade)

	Jan.	**Apr.**	**July**	**October**
Dar es Salaam	23.3	22.9	18.3	31.3
Arusha	12.2	16.9	12.6	27.3
Dodoma	19.2	13.5	16.2	30.2

Gross Domestic Product at factor cost (billion Shs.) 1992.		
At current price		688.0
At constant prices		32.2
GDP growth rate at 1976 prices 1985-92	3.69%	
Per capita		27,355
At current price		27,355
At constant price		1,280

1.2 SOCIAL SERVICES

HEALTH FACILITIES

YEAR	HOSPITALS	RHC	DISPENSARIES
1960	98	22	975
1980	149	239	2,600
1990	173	276	3,014

Education: Enrolment rates 1995 compared with other East Africa countries

COUNTRY	GROSS ENROLLMENT	
	PRIMARY	SECONDARY
KENYA	94	28
UGANDA	76	20
TANZANIA	67	13

1.3 NATIONAL PARKS

National Parks (area in sq km)

PARK	LOCATION AND PARTICULARS
(i) SERENGETI NATIONAL PARK	**LOCATION:** At the border of Arusha & Mara Region, about 32 km from Arusha town **AREA SIZE:** 14,763 square km. It is the largest and oldest Park in Tanzania having been established under the British Colony in 195l. It contains the greatest and most spectacular concentration of plain animals left any where in Africa. **MAJOR ATTRACTIONS:** Wildebeest about 1.7 million, Lions 3,000. About 35 species of animals and 500 species of birds, Buffalos, Chetah, Leopards etc.
(ii) **LAKE MANYARA NATIONAL PARK**	**LOCATION:** Some 125 Kilometres South West of Arusha town. It was officially established and gazzetted as a National Park in 1960. **AREA:** Lake Manyara National Park covers a total area of 320 square kilometres, 230 kilometres constituting Lake Manyara itself. **MAJOR ATTRACTIONS:** The Rift Valley edge on the West with the vast lake underneath. Natural forest with many natural rivers and springs. Tree-climbing lions, various species of animals plus about 360 species of birds, Elephants, Hippos, Leopards, Baboons etc.

(iii) TARANGIRE NATIONAL PARK	**LOCATION:** South of Arusha town along the Dodoma Highway. It was established in l970. **AREA:** Tarangire National Park covers some 2,600 Square kilometres. **MAJOR ATTRACTIONS:** Tree climbing pythons, zebra, kongoni, elephant, buffalo, waterbuck, gazettes and oryx.
(iv)ARUSHA NATIONAL PARK (MOMELA)	**LOCATION:** The Park is located between Mount Meru and Mount Kilimanjaro. Formally Ngudoto National Park until 1967. Was commissioned as National Park in 1960. **AREA:** The park covers some 137 square Kilometres. **MAJOR ATTRACTIONS:** Ngurdoto Crater, Lake Momella, Mount Meru and the Natural Momela Forests. There are many species of Animals and birds. The most common being African elephant, colobus and velvet monkey, hippo, duicker and a number of bird species.
(v)KILIMANJARO NATIONAL PARK	**LOCATION:** The Kilimanjaro National Park which derived its name from Mount Kilimanjaro is part and parcel of the Mountain. It was established in 1973. **AREA:** The bounderies of the Park include the natural forest under and around the Mountain. It covers some 760 square Kilometres. **MAJOR ATTRACTIONS:** Mount Kilimanjaro with its three peaks Shira (3,962 metres) Mawenzi and Kibo (5,149 and 5,895 metres respectively) above sea level form the largest part of the Park's attraction. There are also various species of Animals, plants and birds.

(vi)MIKUMI NATIONAL PARK	**LOCATION:** It is situated some 216 km along the Dar - Zambia Highway. It was established in 1964. **AREA:** Mikumi National Park which borders with Africa's largest Game reserve, the Selous is the third biggest National Park after Serengeti and Ruaha National Park and covers 3230 sq km. **MAJOR ATTRACTIONS:** The plains sorrounding River Mkata which are rich in flora and fauna are by themselves a wonderful scenarial. The common animals found in the park include zebra, buffalos, elephants, Hippos, lions and the Impalas.
(vii)UDZUNGWA NATIONAL PARK	**LOCATION:** This Park is located South of Mikumi National Park along the Mikumi-Ifakara Highway. The Park was established in 1992. **AREA:** The Park which derives its identity from the famous Udzungwa mountain has an area of 1990 square kilometres. **MAJOR ATTRACTIONS:** Its unique species of Fauna and Flora which called for its declaration as a National Park. The Udzungwa Mountains and Forests are a good source of Rivers and springs, one of them being the famous Kilombero River, which constitutes the essential part of the multi-hactoral its total Kilombero Sugar Plantations. Additional attractions: Lions, Buffalos, Giraffes etc.

(viii)RUAHA NATIONAL PARK	**LOCATION:** The name Ruaha, is derived from the Hehe word "Luvaha" meaning a river. **AREA:** Park covers an area of 12,950 square kilometres, the second largest in the country. Ruaha National Park which was established in 1964 is situated some 130 km west of Iringa town. **MAJOR ATTRACTIONS:** The Ruaha River by itself is an attraction, leave alone some hundreds of species of Flora which sorround it. Besides there are a lot of Crocodiles, Hippos, Elephants etc.
(ix) KATAVI NATIONAL PARK*	**LOCATION:** It is located in Mpanda District, Rukwa Region. It was established in 1974. **AREA:** The Katavi National Park which is about 40 kilometres South -East of Mpanda town covers an area of 2,253 square kilometres. **MAJOR ATTRACTION:** Lakes Chala and Chada plus other springs and rivers whose waters feed into lake Rukwa constitute a unique environment. Animals in the park include zebra, sable, eland, leopard, buffalo, lion, antelops etc. Animals like, Buffalos, Elephants, Zebras and BushBucks are a good attraction to visitors.
(x)MAHALE NATIONAL PARK	**LOCATION** Located some 120 south of Kigoma town along the shores of lake Tanganyika, Mahale National Park is yet another attraction in Tanzania's Natural Heritages. **AREA**: Mahale nation Park has about 1,613 square kilometres and was gazzetted in 1948. **MAJOR ATTRACTIONS:**Chimpanzees are a major attraction. Also there is a good number of monkey species including red colobus monkeys. It is estimated that there are 700 Chimpanzees in Mahale and 15 species of monkeys whose habits tally with those of the Chimps.

(xi) GOMBE NATIONAL PARK	**LOCATION:** Gombe National Park is situated 16 km north of Kigoma town in western Tanzania. It is a narrow strip of mountainous country bounded in the east by the eastern rift valley escarpment and by lake Tanganyika in the west **AREA:** Covering some 52 square kilometres. National park, was commssioned in 1968. **MAJOR ATTRACTIONS:**Ever green forests and primates. These include Chimpanzees, Baboons, blue monkey red tails and red colobus.
(xii) RUBONDO NATIONAL PARK	**LOCATION:** The Park which form park of a number of archipelagos in Lake Victoria covers some 240 square Kilometres. it was established in 1977 **MAJOR ATTRACTIONS:** The Chimpanzees. But other attractions include, Hippos, Giraffes, and Elephants. the absence of man-eaters such as Lions & Leopards ensures a safe walk in Rubondo Park even some fishing activities with boats under Park wardens are carried out.
(xiii) NGORONGORO	**LOCATION:** It is situated west of Arusha town some 230 kms. AREA: The park covers 8320 sq km **MAJOR ATTRACTION:** Wildebeest, Lions, Buffalos, Leopards, Variety of birds species, Giraffes, elephans etc