



PART TWO
The Kilimanjaro Today

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THE KILIMANJARO TODAY

Regional Economy

The Kilimanjaro Region accounted for 5.8% of the total population of the Tanzanian mainland in 1976 according to government estimates. Its population density, at 66 persons/km², is second only to that of the Dar es Salaam area. Urban population in the Kilimanjaro Region is estimated at approximately 9% of total population, as compared to 6.8% nationwide. The estimated rate of increase of population in the Kilimanjaro Region is also higher than the national rate but slightly lower than the rate of the Arusha Region.

The laborization factor for persons 15 years and over is estimated at 62.7%, as compared to 79.5% nationwide according to the 1967 census. Again according to this census, the ratio of the unemployed to the economically active in this region stood at 7.9%, as compared to 1.8% nationwide, although the census figures include casual employment and tend to understate real unemployment. It should be noted that the unemployment rate in the Kilimanjaro Region has been the highest in the nation, at least as far as the 1967 census figures indicate.

The employment structure of this region obviously leans toward the primary sector which accounts for 83.3% of the total according to the 1967 census. This is lower, however, than the nationwide figure of 91.0%. The secondary sector accounts for 5.2% as compared to 3.8% in the Coast area, 3.0% in Tanga, 2.9% in Arusha, and 2.4% for the whole mainland. This may be a reflection of the existence of numerous estates in the region. It might also be an indication of low productivity in the secondary sector in this region.

According to government estimates of regional distribution of GDP in 1974, the Kilimanjaro Region accounted for 5.5% and had a per-capita GRP at current prices slightly lower than per-capita GDP. Nevertheless, its per-capita GRP has been assumed to be greater than per-capita GDP. Economic growth in the region, however, can be considered to have recently fallen behind the national average. According to Bureau of Statistics estimates, the annual rate of growth of GDP has been about 4.2% at 1966 prices. At the same time, the GRP of the Kilimanjaro Region is estimated to have grown at an annual rate of approximately 3.8% in 1966 prices as follows.

Economic Growth, 1966 Prices

	GDP		GRP, Kilimanjaro	
	GDP (million sh.)	Per-capita (sh.)	GRP (million sh.)	Per-capita (sh.)
1967	6,875	575	435.7	667
1975	9,590	648	688.4	680
Pearty change '67-'75	4.2%	1.5%	3.8%	0.2%

Looking at the industrial structure in terms of GDP, one sees a distinctive difference in the relative weights of the primary sector and the secondary sector.

Breakdown of GDP and GRP by Sector, 1975, (Current Prices)

	GDP (%)	GRP, Kilimanjaro (%)
Agriculture	41.9	67.1
Mining	0.6	2.3
Manufacturing	10.6	4.7
Electricity & water	0.8	1.2
Construction	4.3	2.3
Trade	12.8	10.1
Transportation and communications	8.0	1.7
Services	21.0	10.5

Inter-regional Comparison of GRP, 1974

	Regional Distribution (%)	Per Capita GRP (Per Capita GDP=100)
Arusha	6.0	113.9
Coast	3.7	95.2
Dodoma	3.3	57.1
Iringa	4.9	83.8
Kigoma	2.7	73.6
Kilimanjaro	5.5	97.0
Lindi	2.1	63.3
Mara	3.2	68.4
Mbeya	6.1	98.2
Morogoro	5.5	102.7
Mtwara	2.9	56.8
Mwanza	6.2	71.1
Ruvuma	1.8	54.6
Shinyanga	7.0	94.8
Singida	1.9	54.5
Tabora	4.2	106.4
Tanga	9.0	140.9
West Lake	4.4	84.5
Dar es Salaam	17.6	535.9
Rukwa	1.9	79.1
Total	100.0	100.0

Exports of coffee still figure prominently in Tanzania's balance of payments. They account for 15% of the country's total exports. An important role of the Kilimanjaro Region in the national economy is therefore coffee production. This does involve, however, certain problems, including instability, dependence, and dual structure of the regional economy. In 1974 the Kilimanjaro Region accounted for 54.4% of national production of coffee. The standard growth rate is the average of the growth rates of the different sectors of the national economy. It is a good yardstick for determination of the relative position of the region in terms of productivity or mobility. The actual growth rate of the economy of the Kilimanjaro Region is slightly higher than the 3.5% of the assumed standard growth rate because of higher growth rate in the agricultural sector, which accounted for 62.9% of GRP in 1967. Regional industrial productivity can be roughly gauged by 1967 data on value-added per employee in agriculture and manufacturing. The agricultural productivity of the Kilimanjaro Region is estimated at about 2.9 times the national average. The region's manufacturing productivity, however, is only about 32% of the national average.

Public Finance

In spite of some change as of July 1, 1977, Tanzania's system of public finance still has the basic feature of a high degree of centralization.

As for expenditures, all the decisions concerning budgetary allocation are made at the Treasury upon approval by the Parliament. The Treasury, then, disburse its budgets periodically (quarterly) toward three directions, the Prime Minister's Office, Regional Development Director's Office and the other Ministries. Those budgets are broadly divided into recurrent budget and development budget. The regional recurrent and development budgets come straight from the Treasury, though its budgetary negotiation has to go through the Prime Minister's Office. In addition to this, a special fund, called the Regional Development Funds, is allocated to various specific projects, while development funds for specific National Projects under direct control of the Ministries concerned are disbursed directly to the former Ministry's branch offices which are now under supervision of the RDD's Office.

Except for some revenues that are collected by the regional government and used in the region for development expenditures under Treasury assessment, all revenues are ultimately absorbed by the Treasury.

Accordingly, an analysis of the public finances of the Kili-manjaro Region as based on such a public finance system has to be an analysis of the amount of funds that flow from the region to the Central Government by different routes as well as of the amount allocated to the region by the Central Government by different routes.

Present State of the Finances of the Central Government

The finances of the Central Government consist of a recurrent budget account and a development budget account, the following table describing both in terms of both revenues and expenditures.

Official Government Revenue and Expenditure Accounts

Revenue	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	(Shs. Million)	
								1974/75 Provisional Actuals	1975/76 Estimates
Recurrent Revenues:									
Direct taxes	263.7	338.6	352.0	447.6	532.0	601.6	697.1	1,007.3	996.6
Indirect taxes	588.9	660.8	827.1	916.6	898.6	1,325.2	1,911.2	2,424.0	2,369.1
Income from property	107.9	93.7	116.2	111.9	131.9	106.2	153.5	212.8	200.8
Miscellaneous Revenue	163.1	164.2	130.7	146.8	182.7	197.1	227.2	266.0	177.0
Revenue and capital transfers *6	5.9	12.5	150.9	60.2	114.0	126.5	33.9	80.4	84.1
Subtotals *1	1,129.5	1,269.8	1,576.9	1,683.1	1,859.2	2,356.6	3,022.9	3,990.5	3,827.6
Development Revenues:									
External sources, loans	81.5	122.7	121.5	269.7	347.4	455.9	466.9	661.3	1,205.4
Grants	2.5	0.1	0.4	0.1	37.8	62.4	214.4	377.3	645.3
Internal sources, loans	159.4	132.5	230.7	250.0	265.4	268.5	346.4	481.8	575.0
Grants	1.8	4.2	3.9	3.8	0.3	—	—	—	0.3
Surplus from recurrent budget	64.5	83.8	50.2	51.6	78.6	130.4	237.9	15.0	199.6
Other *7	34.4	117.2	203.6	253.9	184.9	38.8	376.6	397.2	386.1
Subtotals	344.1	460.5	610.5	829.2	884.4	956.0	1,642.2	1,932.6	3,011.7
Grand totals *3	1,409.1	1,646.5	2,137.2	2,460.6	2,665.0	3,182.2	4,427.2	5,923.1	6,639.7
Expenditure	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75 Provisional Actuals	1975/76 Estimates
Recurrent Expenditure:									
Economic Services	231.7	267.6	307.2	349.4	376.0	440.1	656.1	934.7	590.4
Social Services	290.9	335.6	434.5	501.6	560.3	664.9	881.2	1,045.4	1,135.5
General Administration	346.1	368.6	480.0	533.0	543.5	478.7	943.8	1,261.1	1,157.4
Other purposes	196.3	216.2	305.0	247.4	300.8	372.5	303.9	733.4	744.7
Total Recurrent Expenditure *2	1,065.0	1,186.0	1,526.7	1,631.4	1,780.6	2,226.2	2,785.0	3,974.6	3,628.0
Surplus *4	64.5	83.8	50.8	51.6	78.6	130.4	237.9	15.0	199.6
Subtotals	1,129.5	1,269.8	1,576.9	1,683.0	1,859.2	2,356.6	3,022.9	3,990.5	3,827.6
Development Expenditure:									
Economic Services	196.2	343.4	343.5	585.2	644.0	730.5	1,205.9	1,302.5	2,174.3
Social Services	71.4	57.7	81.3	111.2	73.5	83.2	140.3	230.8	375.8
General Administration	76.5	59.4	94.7	132.8	166.9	142.3	296.0	290.8	461.6
Total Development Expenditure	344.1	460.5	610.5	829.2	884.4	956.0	1,642.2	1,932.6	3,011.7
Total Development and Recurrent Expenditure	1,409.1	1,646.5	2,137.2	2,460.6	2,665.0	3,182.2	4,427.2	5,923.1	6,639.7

Source: The Treasury

*1 Including reimbursements and appropriations-in-aid *2 Excluding Revenue contribution to Development Budget

*3 Excluding surplus on recurrent account *4 Including transfers from recurrent to Development Budget

*5 Medium and long-term government security sales to financial institutions, N. B. C. and others

*6 Includes transfers from funds, inter-departmental transfers, repayment of loans, etc.

*7 Includes short-term borrowings from Bank of Tanzania

A major feature of recurrent revenues is that they consist almost entirely of tax revenues, with indirect tax revenues accounting for more than 50% of the total.

As for development revenues, since the surplus in the recurrent budget is small, they consist for the most part of money borrowed at home and abroad.

The overall picture with respect to revenues is one of a gradual increase in the relative weight of development revenues and in the rate of dependence on external sources, the tax burden rate being just under 25%.

The breakdowns by function are 20%, 40%, and 40% for economic services, social services, and general administration, respectively, in the case of recurrent expenditures and 70%-plus, 10%-plus, and 15%-plus, respectively, in the case of development expenditures.

Present State of the Finances of the Kilimanjaro Region

The funds allocated to the Kilimanjaro Region by the Central Government can be divided into two categories: those for which the regional government has a say in how they are to be used and those for which it does not. Only with respect to the first categories is reliable data available. Fortunately, however, the following table encompassing both categories, although only with respect to per capita development expenditures, has been made available to us.

On the basis of several assumptions and deductions, it has been possible to derive the following figures on the finances of the Kilimanjaro Region.

Reflux Rates for the Kilimanjaro Region

	Outflow (1,000 shillings)				Inflow (1,000 shillings)			Reflux rates (%)			
	Total	T _{kc}	T _{rc}	SL _{kc}	Total	R _{ck}	D _{ck}	O _{ck}	Tax	Direct inter-government	Indirect inter-government
									R _{ck} /TO	$\frac{(R_{ck}+D_{ck})}{TO}$	TI/TO
1972/73	46,191	2,317	16,245	—	59,969	40,964	4,568	14,437	88.7	98.6	129.8
1973/74	46,540	3,757	14,852	—	91,023	48,768	17,647	24,608	104.8	142.7	195.6
1974/75	144,183	5,204	108,744	7,810	95,979	68,861	19,888	7,230	47.8	61.6	66.6
1975/76	171,001	6,219	154,882	9,900	70,289	19,706			41.1	52.6	

*T_{kc} : Tax outflow from the regional government to the Central Government.

*T_{rc} : Tax outflow from the Internal Revenue Office in the region to the Central Government.

*SL_{kc} : Special levies from the region to the Central Government.

*R_{ck} : Recurrent expenditure allocations from the Central Government to the regional government.

*D_{ck} : Development expenditure allocations from the Central Government to the regional government.

*O_{ck} : Development expenditure allocations from the Central Government to the Kilimanjaro Region over which the regional government has no control (including corresponding recurrent expenditure allocations).

*TI : Total Inflow.

*TO : Total Outflow.

Reflux Rates

Defining the reflux rate as the ratio of inflow of funds into the region to the outflow of funds from the region, the "tax reflux rate" is the ratio of funds allocated to the region by the Central Government for recurrent expenditures, i.e., the tax inflow to the region, to the tax outflow to the Central Government, the "direct intergovernmental reflux rate" is the rate obtained by taking into account as well the funds allotted by the Central Government for development expenditures in which the regional government has a say, and the "indirect intergovernmental reflux

Structure of the Finances of the Kilimanjaro Region

	1972/73 (%)	1973/74 (%)	1974/75 (%)
Recurrent revenues	40,793 (68.0)	54,418 (59.8)	67,454 (70.3)
Development revenues	19,176 (32.0)	36,605 (40.2)	28,525 (29.7)
Totals	59,969 (100.0)	91,023 (100.0)	95,979 (100.0)
Recurrent expenditures	40,986 (68.3)	48,789 (53.6)	68,864 (71.7)
Development expenditures	18,983 (31.7)	42,234 (46.4)	27,115 (28.3)
Totals	59,969 (100.0)	91,023 (100.0)	95,979 (100.0)
Recurrent/development	2.2	1.2	2.5
KGEF (%)	24.1	58.2	73.3
K/C (%)	2.5	2.7	2.1

* Although the "recurrent/development" ratio here is that for expenditures, it would be almost the same for revenues.

* KGEF: the percentage of total government development expenditures in the Kilimanjaro Region represented by development expenditures of the regional government.

* K/C: the ratio of the total allocations of the Central Government to the Kilimanjaro Region to the total of the budgetary funds procured domestically by the Central Government by other means than borrowing.

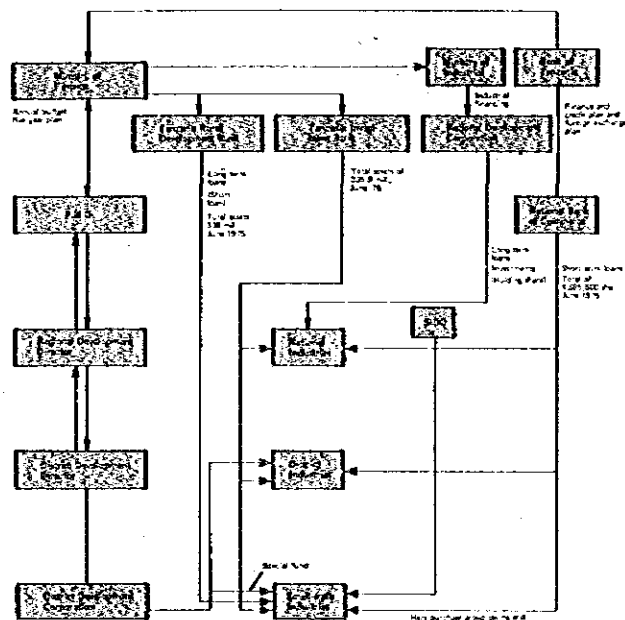
rate" is the rate obtained with the additional factor of funds for recurrent and development expenditures over which the regional government has no control.

There are three main routes for the tax outflow from the Kilimanjaro Region to the Central Government: via the regional government, via the Internal Revenue Office, and in the form of special levies (the routes via the P. M. O. and ministries have not been taken into account here since they represent only a small percentage of the total and there is no reliable data on them in any case). Taking figures on them into account, it is possible to obtain the values for the reflux rates indicated in the following table.

Banking System

In this country, the investment allocation to industries through banking institutions is generally well specialized (as indicated in the following chart), which means the government can easily manage their investment allocations to each industrial group. On the other hand, however, this makes for a lack of incentive for improvement of efficiency and difficulty in getting access to funds in the absence of appropriate financial suppliers.

Institutional Framework of Financing



The following can be said of the distribution of funds in the Kilimanjaro Region through the banking system.

- 1) The Kilimanjaro Region has plenty of financial resources in comparison to its level of investment activities. In other words, it is a major supplier of funds to other regions.
- 2) As for financing equipment, the Kilimanjaro Region's position is quite low as far as major banking institutions are concerned.
- 3) As for financing working capital, Kilimanjaro's share is still high but gradually declining. This may be partly due to the downward trend of new investment activities as seen in the financing of major banks. Under such circumstances, it can be predicted that even though the present level of industrial development of the region is somewhat higher than the national level, its share of industry will be declining in the future.

In addition, there are such nonmonetary financial institutions as the National Insurance Corporation, the Tanganyika Post Office Savings Bank, the National Provident Fund, and the Tanzania Housing Bank. From the standpoint of public finance, the function of all but the last is that of providing the government development funds through the purchase of government securities with funds procured from the general public.

People's Preference Survey

The plan, being an "integrated" one, covers many different areas and will affect the whole of the lives of the people of the region. Accordingly, the opinions of the people themselves should be reflected to the greatest extent possible in the planning and evaluation process. That is why the planners took to the field, talking to people in general in the region and engaging in lively discussions at R.D.D. and D.D.D. offices. In order, however, to get a still better idea of the people's views, it was deemed necessary to carry out an opinion survey.

The survey was carried out in January and February of 1977, the respondents being opinion leaders in the various areas of the region. Of the 222 effective respondents, 60 were from Hai, 60 from Moshi, 48 from Rombo, and 54 from Pare; 80.6% of them were males; and over half of them had received a secondary or higher level of education. The questionnaire consisted of ten questions covering major aspects of the Integrated Development Plan. Only some of the results will be reviewed here.

Do you think population of your village is growing very fast and causing problems?

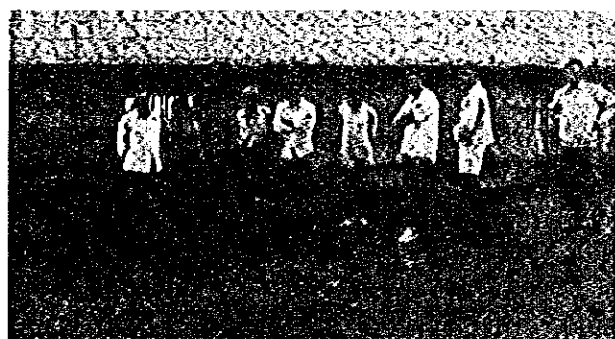
Yes	No	No response	Total
182	39	1	222
82.0%	17.5%	0.5%	100%

Since 82% answered "yes" to this question, rapid increase in population is obviously already giving rise to tangible problems in their everyday lives.

If you answered yes for the above question, what do you think best to do?

	Very effective	Effective	Less effective	No response
Agricultural development	58.1%	26.1%	10.0%	5.9%
Development of small industry	30.6%	44.6%	16.7%	8.1%
Development of large industry	3.6%	12.2%	35.9%	48.6%
Birth control	8.6%	12.6%	35.6%	43.2%

Agricultural development was cited by 58% of the respondents as being a very good way of coping with the population problem, the next most popular solution being development of small-scale industry.



Ujamaa Village Assembly House

What do you think your village needs in order to improve living conditions?

Order of priority	Answer
1. Hospitals	60.8%
2. Water supply	59.0%
3. All-weather roads	45.5%
4. Housing	28.4%
5. Small-scale industry	22.1%
6. Marketing through cooperatives	21.2%
7. Marketing of farm produce	15.3%
8. Educational materials for primary schools	14.4%
9. Electricity supply	9.9%
10. Bus service	9.9%
11. Secondary education	8.6%
12. Telephone service	4.1%
13. Libraries	2.3%
14. Community centers	1.8%

The overwhelming top priority choices were hospitals, water supply, and all-weather roads. Lowest priority was given to community centers, libraries, and telephone service, all of which relate to the interaction process of the social system and the demand for which will become greater and greater as supply increases. The reason why they were given such low priority is that contact between the people and the administrative apparatus is not very close.

Furthermore, no substantial difference in priorities was detected between the districts, except for a somewhat lower priority in the Moshi and Hai districts for all-weather roads, which is attributable to the fact that these districts are already better provided with roads than the others.

Land-use Inventory

The Kilimanjaro Region has a total area of 13,209 km², which represents 1.5% of the area of mainland Tanzania, and an estimated population of 865,000 persons as of 1975, which amounts to 5.7% of the national figure. The overall regional population density is the second highest in the nation at 49.4 persons/km², the highest being that of the Mwanza Region at 53.6 persons/km².

The region's location is 3 – 4 deg. south latitude, 37 – 38 deg. east longitude. At its northern end is situated Mt. Kilimanjaro, with an altitude of 19,340 ft. at Kibo Peak, the highest in Africa, and snow-capped the year round. Along the lower reaches of the Pangani River, which is the boundary of the region with the Masai Steppe to the west, there are also lands with altitudes as low as 1,800 ft.

There is considerable variation within the region with respect to climate, terrain, soil, and other natural conditions influencing agricultural production. For instance, while some areas receive as much as 2,500 mm of rainfall annually, there are other areas, and not just the top of Mt. Kilimanjaro, which have less than 400 mm.

On the southern and eastern slopes of Mt. Kilimanjaro between the altitudes of 3,000 ft. and 6,000 ft. and in the Pare mountains at altitudes above 3,500 ft. in what are known as kihamba or highland areas, there is plentiful rainfall and favorable temperature and soil conditions, which make possible high population densities in excess of 500 persons/km² and rate of cultivation of over 70%. On the other hand, lowland areas in the region are characterized by dryness and high temperatures and are practically uninhabited.

Highland Area

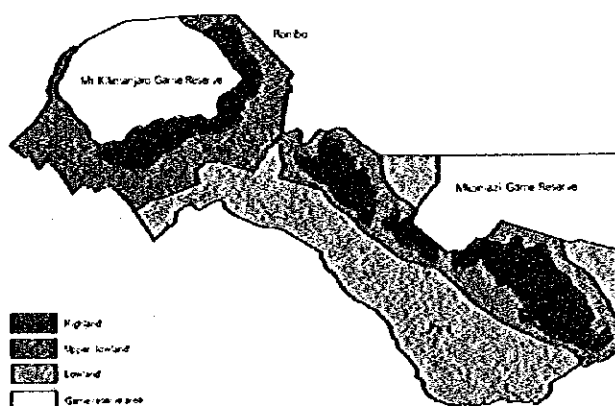
The highland areas, which have been agriculturally developed for a long time, have a very high socioeconomic level in comparison with most other areas of the country, as shown by income, education, and other indicators. Here there is efficient mixed cultivation of the food crop bananas with the cash crop coffee, with some maize as well. Livestock raising is of the stall-feeding type, the animals involved being for the most part dairy cattle. This form of agriculture makes for large and stable yields, which make it possible to support a dense population.

In 1975 approximately 550,000 persons, or 65% of the regional population, lived on an area of about 2,200 km², or 16% of the total area of the region, for a gross population density of 255 persons/km² and a net population density (water surfaces, forest areas, steep slopes, and other uninhabitable areas not taken into account) of 448 persons/km², both of which are 4 times as high as the regional averages (Gross population density of 65 persons/km² and net population density of 103 persons/km²).

Lowland Area

The upper lowland areas in the region, located in between the highland areas and the lowland areas mentioned above and known as shambalands, have been developed only as recently as the 1960's for cultivation of such food crops as maize, finger millet, and beans and such cash crops as sisal, cotton, and sugar. In addition to crop cultivation there is also some livestock raising in these areas, chiefly of cattle for meat and occasionally for trading or status purposes as "property" on the hoof. Since they do not, however, have as favorable natural conditions as the kihamba lands, yields are not as high or as stable, and the use of the land is not as intensive.

Approximately 60% of the total area of the region, or 8,000 km², consists of semi-arid savanna lands, forests, game reserves, etc.



Past Population Growth

The growth of population in Kilimanjaro District has been rapid. Although Chagga contact with the outside world dates from the 17th Century, the first record of the number of people dates from 1871.

Fosbrooke (1954) estimated that at the advent of German rule (1891) the population of Kilimanjaro District was 60,000 and by the end of World War I it had doubled to 120,000 people. The first crude counting of people in Tanzania was done in 1921, the second count in 1931, and the third in 1938. It was not until 1948 that the first reliable census was carried out in the country. This was followed by another in 1957 and the most recent one in 1967.

The table below shows how population has grown both in the former Kilimanjaro District and the Pare District, which together make up the Kilimanjaro Region. As one can see from these figures, there has been a 4.3-fold increase in the population of the Kilimanjaro District and a 3.4-fold increase in the population of the Pare District in the past 45 years the average annual growth rates for the periods 1948-57, 1957-67, and 1967-75 being 3.5%, 2.3%, and 3.7%, respectively.

Year	Kilimanjaro district	Pare district	Totals
1921	128,443	—	—
1928	143,013	—	—
1931	155,337	56,431	211,768
1948	267,700	—	—
1957	365,000	—	—
1967	503,087	149,635	652,722
1975	672,711	192,289	865,000

Remark: The urban population of Moshi Town is not included in the figures for 1921, 1928, and 1931.

Administrative System

In 1970 the Rombo District split off from the old Kilimanjaro District, and in 1973 the remaining territory of the Kilimanjaro District was divided into the Hai District and the Moshi District, making four districts in all in the Kilimanjaro Region taking into account the Pare District, the status of which has remained as it was.

The administrative hierarchy in descending order below the district is: division, ward, and village, the numbers of each being as follows:

	Hai	Moshi	Rombo	Pare	Totals
Divisions	2	6	5	6	19
Wards	10	29	11	25	75
Villages	83	148	57	131	419

The regional capital is Moshi Town, which had a population of 50,000 in 1975 and which also serves as the headquarters of the Moshi District. The Hai, Rombo, and Pare district headquarters are Sanya Juu (pop. 5,000), Mkuu (pop. 5,000), and Same (pop. 15,000). Approximately 80% of traditional villages have been registered, the registered village being the smallest unit in the administrative hierarchy. The breakdown of the total number of villages is as follows:

	Hai	Moshi	Rombo	Pare	Totals
Registered	59	113	55	94	321
Unregistered	22	30	1	28	81
Old Ujamaa	2	5	1	9	17
Totals	83	148	57	131	419

Settlement Land and Its Population

The table below indicates the amount of land in each district in the region. It should be noted that 28% of the land has been designated as national park or game reserve land, in which no human settlement is allowed, and that the Pare District accounts for approximately 60% of the regional total.

(Unit: km ²)	Hai	Moshi	Rombo	Pare	Totals
Administrative land	2,110 (16.0%)	1,764 (13.3%)	1,435 (10.9%)	7,900 (59.8%)	13,209
Land with human settlement	1,516 (15.9%)	1,532 (16.1%)	504 (5.3%)	5,960 (62.7%)	9,512
Regulated land	594 (16.1%)	232 (6.3%)	931 (25.2%)	1,940 (52.4%)	3,697

Population and population density in the region are as indicated below. Particularly noteworthy here are the fact that over 40% of the population is concentrated in the Moshi District and the exceedingly high population densities of the Rombo and Moshi districts in comparison to the national average of 15 persons/km².

	Hai	Moshi	Rombo	Pare	Totals
Land with human settlement (km ²)	1,516	1,532	504	5,960	9,512
Population, 1975	160,544 (18.6%)	365,895 (42.3%)	146,272 (16.9%)	192,289 (22.2%)	865,000 (100%)
Net population density (persons/km ²)	105.9	238.9	290.0	32.3	90.9

Population Distribution

In order to give a better idea of how the population of the region is distributed, it has been broken down below by altitude zone. One sees that whereas 50.7% of the population is concentrated in the Mt. Kilimanjaro (Hai, Moshi and Rombo) highland zone, only 5.7% is to be found in the lowland zone.

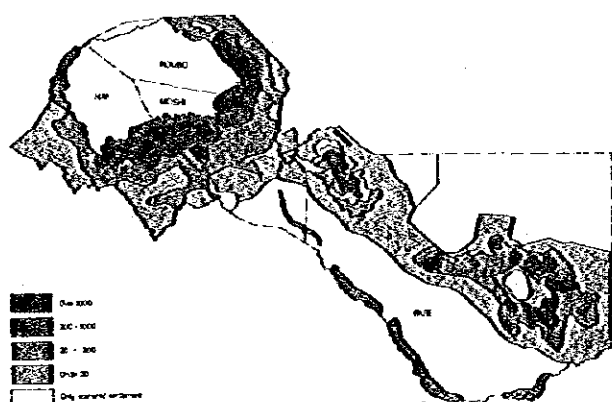
Zones	Hai	Moshi	Rombo	Pare	Totals
Highland	98,800 (11.4%)	242,800 (28.1%)	97,000 (11.2%)	117,200 (13.6%)	555,800 (64.3%)
Upper lowland and footland	41,900 (4.8%)	111,300 (12.9%)	49,300 (5.7%)	57,400 (6.6%)	259,900 (30.0%)
Lowland	19,800 (2.3%)	11,800 (1.4%)	0	17,700 (2.0%)	49,300 (5.7%)

Population Density

The following table gives the distribution of population density in order to give a better idea of the distribution of human settlement in the region. As one can see, only 14% of the total area has a population density over 100 persons/km², and a full 72% has only scattered settlement of under 20 persons/km². Also noteworthy is the fact that, besides urban areas, there are some rural areas in the Mt. Kilimanjaro and Pare highlands with extremely high densities in excess of 500 persons/km².

Population density (persons/km ²)	Hai	Moshi	Rombo	Pare	Region
Over 1,500	0.1%	1.7%	0.2%	0.1%	0.3%
1,500 – 1,000	2.1%	3.4%	2.6%	–	1.1%
1,000 – 500	3.4%	11.0%	3.6%	1.0%	3.0%
500 – 200	6.6%	8.7%	5.4%	2.8%	4.5%
200 – 100	5.6%	13.4%	8.4%	3.1%	5.4%
100 – 20	20.5%	13.4%	10.1%	12.2%	13.5%
20 – 5	33.4%	15.5%	4.8%	26.6%	23.8%
Under 5	28.3%	32.9%	64.9%	54.2%	48.4%

Population Density Map, 1975



Description of Agriculture

Agriculture is the major industry of the region, and more than 90% of the regional population is estimated to have depended upon it for employment in 1976. Coffee is a main export crop of Tanzania, and Kilimanjaro is the largest coffee producing region of the country. Bananas and maize are staple foods of the region.

Agriculture in the region is characterized by two distinctive areas of farming: the highland areas, which are located on the south and east slopes of Mt. Kilimanjaro and on the slopes of the North and South Pare mountains at altitudes of 1,100 meters to 1,800 meters, and the lowland areas, which include the areas along main roads going through Moshi Town and those on the east and west sides of the North and South Pare mountains at altitudes of 600 meters to 1,200 meters. The former have adequate rainfall (more than 1,000 mm a year) and moderate temperatures, while the latter have insufficient rainfall (1,000 mm to 700 mm a year) and higher temperatures. Coffee and bananas are grown in the highland areas, which are already overpopulated, whereas maize and beans are grown in the lowland areas, which are sparsely inhabited.

Smallholdings

Smallholder farming is dominant in the region. A typical farmer in a highland area has some plots for coffee and bananas in the vicinity of his house and some additional plots in a lowland area on which he grows maize, beans, or other crops. A typical farmer living in a lowland area, on the other hand has some farming plots near his house, located in town, and additional plots at some distance. On these plots he grows maize, cotton, bananas, and vegetables. A limited number of farmers grow paddy rice, cotton, and maize by means of irrigation. Generally speaking, farmers are not interested in the use of chemical fertilizers. However, manure is intensively applied in coffee and banana cultivation. Agricultural chemicals are used only for coffee cultivation. In lowland areas large tractors are fairly extensively used for plowing on a contract basis. However, farming operations are based mainly on family labour, although hired labour is employed for coffee harvesting and maize weeding. Usually dairy farming is practised by smallholders in highland areas, whereas raising of beef cattle and goats usually takes place in lowland areas by way of pasturing. However, stock raising is usually only a side business for smallholders. The income of farmers in highland areas is considerably higher than that of those in lowland areas.

Plantations

There are large plantations operated by both public and private estates, such as NAFCO, TPC, etc. They cultivate wheat, sisal, and sugar cane on a large scale by means of irrigation.

Irrigated Areas

Water is of vital importance to the agriculture of the region. About 18% of the cultivated area is irrigated, which is a much higher percentage than that for the whole country. Nevertheless, more irrigation is needed to stabilize agricultural production and increase agricultural acreage to cope with increasing population. Irrigated areas are concentrated in the Moshi and Pare districts, where water is utilized mainly by means of traditional furrows. Underground water is used in lowland areas, almost half of it being obtained from natural springs and the rest from tube wells. There is some utilization of water based on dams, but more dams will have to be built in the future.

Irrigated Area of T.P.C.



Agricultural Production

At present agricultural production in the region is influenced largely by weather conditions. The annual production growth rates of cash crops, food crops and total crops during the five-year period from 1970 to 1975 were 4.6%, 0.4%, and 2.7%, respectively.

On the basis of the production of food crops, the per-capita intake of calories and protein is estimated at 1,580 calories and 38.2 grams per day in 1975.

Agricultural Acreage

Cultivated area	160,000 ha
Irrigated area	28,000 ha
Smallholding area	124,000 ha

Production of Crops

	Quantity (tons)	Value (1,000's of sh.)
Cash crops		
Coffee	21,974	197,766
Sugar	46,420	83,556
Sisal	7,240	16,652
Cotton	1,080	2,160
Seed beans	640	1,408
Pyrethrum	45	202
Castor	122	98
Subtotal	77,521	301,842
Food crops		
Bananas	304,000	152,000
Maize	33,600	25,200
Wheat	8,740	8,740
Root crops	16,240	8,120
Beans	2,520	5,040
Paddy	4,860	3,880
Vegetables & fruit	3,580	3,580
Finger millet	3,960	3,168
Subtotal	277,500	209,728
Total	455,021	511,570

Note: Average for the period from 1971 to 1975.

No. of Livestock and Products (1975)

Cattle	752,000	Meat	3,405 (tons)
Goats	193,000	Milk	69,000 (1,000's of liters)
Sheep	99,000	Chicken	122,000 (kilograms)
Swine	12,300	Eggs	204,347 (dozen)

Overall Profile of Industries

According to the results of our field survey, there are a few more than 36 kinds of industries in the Kilimanjaro Region at the present time. Most of them are industries which process agricultural and forestry raw materials for production of primary products. The highly unbalanced industrial structure in the region makes for very limited inter-industrial relations, a lack of inter-linkage between large and small units being particularly conspicuous.

Existing Industries	No. of units	Employment	Production per month
1. Coffee pulperies	4	16	23,000 kg
2. Rice & maize mills	9	3	13,500 kg
3. Sugar (jaggery)	1	100	27,200 kg
3. Sugar (refined)	1	4,000	400 ton
4. Sisal processing	6	240	40 ton
5. Livestock feed (maize)	1	10	290 bags x 50 kg
6. Cotton ginning	1	16	500 bales
7. Calabash goods	1	11	4,000
8. Lamp shades	1	3	28 units (for 2,500)
9. Mosquito coils	1	105	250,000
10. Hides & skins (tanning)	1	8	22,000
11. Leather goods	5	50	88,000
12. Saw mills	12	30	68,000
13. Carpentry	13	16	99,000
14. Plywood	1	243	380,000
15. Furniture	5	9	12,000
16. Vehicle bodies	1	12	6,000
17. Crates	1	42	170,000
18. Gypsum	1	120	42,000
19. Bricks (cement & natural bricks)	5	6 (12)	13,000
20. Pottery (including burnt bricks)	4	17	4,400
21. Gravel	1	4	26,000
22. Tin- & black-smithing	4	3	2,000
23. Metalworking	5	7	4,450
24. Engineering	2	5	12,000
25. Auto workshops	4	32	50,000
26. Bakeries	6	15	56,000
27. Tailoring	8	16	24,300
28. Textile piece goods	4	153	560,000
29. Soft drink bottling	1	55	450,000
30. Sweets & confectionery	1	38	170,000
31. Retreated tires	1	15	100,000
32. Cooking fat	1	45	—
33. Salt grinding	1	6	—
34. Chemical goods packing	1	10	—
35. Soap making	1	8	—
36. Construction & civil engineering	1	69	—



Tailoring (cottage industry)

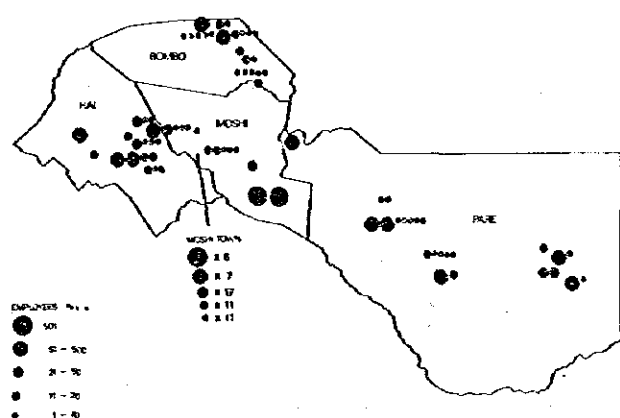
Local Distribution of Industries

Primitive small-scale industries account for more than 90 percent of the existing industries of the region. The average fixed capital investment per unit is estimated at approximately 280,000 sh., 150,000 sh. of which is accounted for by investment in machinery and equipment. If large units such as those for sisal processing are excluded, these figures come to 115,000 sh. and 70,000 sh., respectively. The average number of employees per unit comes to approximately 40 if all employment figures are taken in account other than those for the Tanganyika Planting Company and to 26 – 27 if questionable figures are excluded.

Geographical Distribution

The crop-based industries, including sisal processing, are mainly located in Pare and Moshi. The leather goods industries are very small and located in Moshi rural and Rombo. Sawmilling is more or less evenly distributed among the districts. Plywood, furniture, and fixture manufacturing is located in Moshi urban. Basic industries such as metalworking, engineering, and automobile workshops are located exclusively within the area of Moshi Township. Moshi urban is the center of industrial production in the region.

Location of Existing Industries



Of these, the following are presently production forests. Except for the Rau forest and the Kahe forests, they all have at the same time a natural environment conservation function.

Forest	Location	Area (ha)
Rau	Moshi	620
Kahe I and Kahe II	Moshi	1,277
Kilimanjaro	Hai, Moshi and Rombo	185,896
Chambogo	Pare	5,467
Chome		14,283
Total		207,543

Production from these forests has been fairly steady for the last several years, but since demand for forest products has been steadily growing within the region, since 1974 it has been necessary to bring in products from other regions in order to fill the gap between demand and regional production.

Year	Production (m ³)	Total demand (m ³)	Shortage (-) or Surplus (+)
1971	16,900	67,863	- 50,963
1972	19,500	16,090	+ 3,410
1973	30,700	17,487	+ 13,213
1974	15,400	23,790	- 8,390
1975	20,400	33,095	- 12,695

Production timber, the fine hardwoods of the high forests, consist of *ocotea usambarensis* and *olea welwitschii*, with small quantities of *chlorophora excelsa*. Indigenous softwoods such as *podocarpus*, *juniperus procera*, *pinus patula*, and *pinus radiata*, are also found in these forests.

The number of forestry stations and tree nurseries in each district since 1972:

	Forestry station	Tree nurseries under the Department of Regional Natural Resources	Tree nurseries as national projects
Hai	West Kilimanjaro	Sanya Juu	Engare Nairobi Londoresi
Moshi	—	Rau F. B.	Old Moshi
Rombo	Rongai	Ambon	Najara Rongai
Pare	Same Gonja	Same Gonja	—
Totals	3	4	5

The main consumers have been as follows:

Consumers	1972	1973	1974
Majengo Timbers	351	1,911	339
Kilimanjaro Saw Mill	1,648	3,423	4,576
Kilimanjaro Timbers	528	5,044	5,943
Sambarani Saw Mill	0	273	416
New Kilimanjaro	186	302	690
C. Singh	660	1,923	5,686
Moshi Plywood	0	3,567	2,368
Totals	3,373	16,443	20,018



Kinds of Game Reserve

There are three kinds of designated areas which the game office controls.

1) Kilimanjaro National Park

The area above 9,000 feet above sea level on Mt. Kilimanjaro has been designated as a national park.

2) Mkomazi Game Reserve Area

An area of 1,940.0 km² in northeastern Tanzania adjoining a portion of the southern boundary of Kenya's Tsavo National Park. The country is very arid and consists mostly of open plains with isolated rocky hills. The main type of vegetation is thorny bushes.

3) Kilimanjaro Game Reserve Area

This is an area of 1,790.0 km² on Africa's highest mountain, extending from the 6,000-foot line to the summit (19,340 feet). At lower altitudes the reserve consists of mountain rain forests, which give way to scrub, then alpine moorland and finally icefields, in ascending order of elevation.

4) Game Control Areas (specific species are being protected)

• Kilimawe Game Control Area	320.0 km ²
• Ruwu River Game Control Area	2,270.0 km ²
• Sanya Plain Game Control Area	175.0 km ²

Migration of Wildlife

The migration of animals in the Mkomazi Game Reserve Area is roughly of two types: south-north and east-west. In either case, the animals start to migrate at the beginning of the dry season and return to the original area at the start of the rainy season. Extensive south-north migration is observed especially in Mkomazi Game Reserve East among animals such as elephants, grante gazelles, zebras, rhinoceroses, and hartebeests. The destination is the comparatively water-rich savannas of Tsavo National Park West in Kenya.

The east-west migration is smaller in scale than the south-north migration, though it involves for the most part the same species. One destination is the Uмба river area; another is the Mkomazi River area.

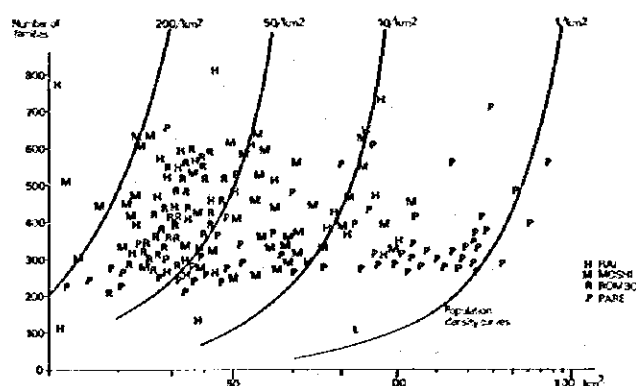
Number of Villages

The order of the hierarchy of administrative levels from top to bottom is: region, district, division, ward, village. Since 1975 there has been a drive for formation of registered villages from traditional villages, the reorganization having been approximately 80% completed as of the end of 1976. The table below gives the number of administrative units on each level.

	Hai	Moshi	Rombo	Pare	Totals
Divisions	2	6	5	6	19
Wards	10	29	11	25	75
Villages	83	148	57	131	419
Registered	59	113	55	94	321
Unregistered	22	30	1	28	81
Old Ujamaa	2	5	1	9	17

Size of the Villages

The Figure below gives a breakdown of the villages for which data is available according to the amount of area that they cover, such villages representing approximately 80% of the total number of villages in the region. One would expect almost all the villages which cover an area of less than 10 km², which represent approximately one-half of the total to be located in highland areas and most of those which cover more than 100 km², which represent 14% of the total, to be located in lowland areas. The average area covered is 22.7 km².



Village Distribution

As of 1975 the rural population distribution of the Kilimanjaro Region was as indicated in the table below, 70% of the rural population being in highland areas, 24% in upper lowland and footland areas, and only 6% in lowland areas.

	Hai	Moshi	Rombo	Pare	Totals
Highland areas	98,800	242,800	92,000	117,200	550,800
Upper lowland & footland areas	36,900	61,300	49,300	42,400	189,900
Lowland areas	19,800	11,800	0	17,700	49,300
Totals	155,500	315,900	141,300	177,300	790,000

Although there is no data available regarding the location of the 419 villages in the region, it would seem reasonable to assume that their distribution is approximately the same as the population distribution above. The following table divides the number of villages among the different zones on the basis of this assumption.

	Hai	Moshi	Rombo	Pare	Totals
Highland areas	53	112	37	87	293
Upper lowland & footland areas	20	29	20	31	100
Lowland areas	10	7	0	13	26
Totals	83	148	57	131	419

The Registered Village, the Basic Unit of Human Settlement

Nationwide more than 7,600 villages have been registered, 321 of them being located in the Kilimanjaro Region. Moreover, another 80 – 100 are expected to be registered in the region before too long.

The registered village is not only the smallest unit of regional administration but also the basic territorial community in terms of production, commerce and transportation, and education. In the Kilimanjaro Region the average village has 2,200 persons in 367 households and an area of 22.7 km² as well as the following public facilities as the sphere of everyday life:

- Village office
- Primary school
- Dispensary
- Post vendor
- TANU office
- Domestic water stand
- Religious facility
- Small shops

On the next echelon above the village in the administrative hierarchy is the ward, which includes 5 – 6 villages. Above that is the division, consisting of 3 – 4 wards, which comprises a living sphere in which services of a higher level are available to residents.

Kihamba Villages

The Kihamba lands in the Mt. Kilimanjaro and Pare highlands have the greatest annual rainfall in the whole country (1,000 – 2,000 mm) and have been settled and cultivated for more than 300 years, the chief crops presently being coffee and bananas. They are densely inhabited, chiefly by smallholders each cultivating 0.4 – 0.6 ha. of land and having a higher standard of living than the people in other areas of the region. Besides the traditional furrows, in recent years water pipelines have been laid for irrigation, and the road networks are well developed. Moreover, other public facilities and infrastructure are more fully provided than in other areas of the region, particularly in areas like Machame, where there are electricity, telephone service, private water supply connections, and other modern amenities even though they are rural areas.

Shamba Villages

The Shamba lands of the Mt. Kilimanjaro upper lowland and Pare footland areas have been opened up to settlement since the 1930's to relieve population pressure in the highland areas, people either living there or commuting there to cultivate the land. There is 700 – 1,000 mm of rainfall a year, maize and beans are among the main crops, and the population density is medium (100 – 200 persons/km²). Since there is room for extension of farmland in these areas, they will be able to accommodate the population overflow from highland areas. In terms of social infrastructure, however, they are not as well off as the highland areas.

Ujamaa Villages

In the lowland areas of the Kilimanjaro Region there are presently 17 Ujamaa villages, listed below, which have been constructed under government guidance. Since there is less than 500 mm of rainfall here annually, agriculture has to be based on irrigation. Besides improvement of the agricultural infrastructure, more social infrastructure is also urgently needed. Moreover, in view of the extremely low density (less than 20 persons/km²) and scattered distribution of population, villagization will be necessary in order to raise infrastructural efficiency.

	Location	Area (ha)	Households	Establishment
Losaa	Hai	—	48	1973
Uroni	"	100	47	1971
Miwaleni	Moshi	30	95	1970
Lotima	"	4,250	400	1971
Chekereni	"	200	250	1970
Shirima Tunda	"	267	220	1973
Mtakuja	"	115	107	1970
Chala	Rombo	150	240	1971
Bendera	Pare	—	100	1970
Kalemani	"	39	70	1971
Luani	"	200	68	1970
Kileo	"	47	134	1969
Kigonigoni	"	700	120	1969
Mkwini	"	67	103	1968
Njiro	"	110	162	1970
Kimunyu	"	40	186	—
Kazamwendo	"	—	—	—

Medical and Health Service

The standard of medical care facilities in the Kilimanjaro Region is not particularly high in comparison to that of other regions. This region, however, does have an advantage in terms of accessibility to such facilities, mainly because of the fact that most of the people of the region are concentrated in the highland areas. Such concentration of population, needless to say, is a favorable circumstance not only for medical care but also for all other types of social service. There are many indices of the level of medical service besides the crude death rate, including life expectancy and the infant mortality rate, and even with respect to such indices the Kilimanjaro Region boasts a record second only to that of the capital, Dar es Salaam.

The amount of facilities is still far from being adequate in absolute terms, however, and one can hardly say that demand for medical and health service is being fully met. A problem that figures here is disparity between different areas of the region. Although, on the average, accessibility is very good in the region, in some low altitude areas, particularly in the Pangani basin area, there are many villages without dispensaries, which makes for a much lower social service level than that obtaining in urban areas in the region. Other problems include the need of medical care facilities for more manpower and public utilities, including purified water, electricity, telephone service, and roads, and the need to increase the number of dispensaries, which serve as the facilities in the medical care facilities network which are closest to the people who are actually served.

Mortality and fertility estimates, 1973

	Kilimanjaro region	National average
Crude birth rate	48.2	45.6
Crude death rate	15.8	17.7
Natural rate of increase	32.4	27.9
Life expectancy	51	47
Infant mortality rate	130	152

Service levels of medical and health facilities, 1976

	Kilimanjaro region	National total or average
No. of hospitals	11	129
No. of hospital beds	1,440	19,268
No. of health centers	10	206
No. of dispensaries	114	1,981
% of pop. within 10 km of hospital (1967)	84.0	24.9

School Education

In terms of facilities the Kilimanjaro Region has higher levels of primary and secondary education than other regions. At the same time, children in the region attend school more years on the average than those in other regions, the average number of years attended being 1.25 times the national average. In recent years there has been emphasis on providing more primary schools under the slogan "universal primary education by 1977." Nevertheless, investment in primary schools will have to be continued for some time even after achievement of this goal in view of the fact that, as shown in the table below, there are some 20,000 fewer Standard VII leavers than Standard I pupils.

At the present time the region has 30 secondary schools with a total of 8,191 students, 15 of them located in Moshi, which is a stronghold of secondary education on the national level. As the percentage of primary school leavers who go on to secondary school and beyond rises, the demand for such educational facilities will grow, and in order to meet this demand, it will be necessary to provide new technical schools, technical colleges, vocational institutes, etc.

Present condition of education service, 1976

	Primary education	Secondary education
No. of schools	599	30
No. of classrooms	3,358	260
No. of teachers	2,994	316
P/T ratio	49.6	25.6

Estimated number of pupils, 1980

	1976	1980	Increase 1976-80
Standard-I	35,918	31,895	0.89
Standard-II	27,890	31,934	1.15
Standard-III	19,444	32,474	1.67
Standard-IV	17,390	33,013	1.90
Standard-V	16,639	35,488	2.13
Standard-VI	15,724	27,556	1.75
Standard-VII	15,567	19,212	1.23
Totals	148,572	211,572	1.42

Present State of Transportation Over Wide Area

As a corridor between the regions of Tanga and Arusha in northeastern Tanzania, the Kilimanjaro Region has long had a well-developed transportation network.

Aviation

The Kilimanjaro International Airport, located on the regional boundary with Arusha and opened in 1972, is one of the most modernly equipped airports in the country. It used to be a central point on the route operated by East African Airways, with approximately 42,000 passengers arriving or departing in 1975. With the recent change in the international situation in East Africa, however, the airport is now being used only by the newly formed Tanzania Airways, which operates a total of fourteen flights to and from Mwanza, Tanga, and Dar es Salaam a week.

Railways

Railways in the Kilimanjaro Region are operated by the East African Railway Corporation, with Moshi figuring as an important nodal point in northern Tanzania along the Tanga, Voi, and Arusha lines. Emphasis is on cargo, with passenger service accounting for only a small percentage of operations. Up to 1973 the amount of cargo carried was increasing, but this trend has been reversed since the Voi line was shut down in 1974. The decline in transport capacity occasioned by the shortage of available locomotives and wagons poses a major problem.

Trunk Roads

The trunk road running the length of the Kilimanjaro Region and connecting Dar es Salaam and Tanga with Arusha has long been an axis of the transportation network of northern Tanzania. With additional roads of the same class connecting with Nairobi and Mombasa, Moshi is an important transportation nodal point in this respect as well.

Ports

The nearest port to the Kilimanjaro Region is Tanga Port, which handled 162,000 t. of exports and 217,000 t. of imports in 1975. A large proportion of the crops grown in the Kilimanjaro Region for export pass through this port, but oil and other industrial products are imported to the region primarily via the port of Dar es Salaam. It is therefore to be hoped that the facilities of Tanga Port will be expanded in order to be able to handle a greater portion of imports to the Kilimanjaro Region.

Present State of Transportation Within the Region

1) Automobile ownership

Nearly 4,000 motor vehicles are estimated to be owned in the Kilimanjaro Region, and in the past the rate of registration of new cars has been about 400 a year. Because of severe foreign exchange limitations in recent years, however, fewer vehicles have been imported, and the total number owned in the region can be considered to have leveled off.

2) Road traffic pattern

The road traffic pattern in the Kilimanjaro Region is formed by a combination of the wide-area Tanga-Moshi-

Arusha axis and the radial pattern that centers on Moshi, the chief kind of traffic being commercial and industrial.

3) Transportation of goods and other cargo

Farm produce accounts for a large proportion of shipments within the region. Almost all cash crops and a small proportion of food crops as well are shipped outside the region by a national company by way of official markets, the means of transportation being railway and road. Since the transportation industry is underdeveloped, this national company has to arrange for transportation itself for each shipment. This being the case, it will be necessary in the future not only to increase railway shipment capacity but also to promote the development of the transportation industry as a whole.

4) Bus service

Buses are mostly privately operated, in many cases by individual owners. There are, however, such public bus companies as the National Transport Company (KAMATA) and the East African Railways Corporation, both of which run long-distance routes, and the Kilimanjaro Development Corporation (KIDECO), which operates lines inside the Moshi District.

Since bus service is indispensable to the people living in the region, it will be necessary to increase public bus service in order to cover areas not adequately covered by private bus service and to have the buses run more regularly according to fixed time schedules.

Present State of Roads Within the Region

There are three classes of roads in the region: trunk roads, regional roads, and district roads. Trunk roads fall under the national Ministry of Works, and the other two classes of roads are the responsibility of the corresponding administrative levels, i.e., the regional government and the district authorities, respectively.

Although the road density of the Kilimanjaro Region is fairly high in comparison to that of other parts of the country, it varies considerably between different districts, being low in terms of area in the Pare District and in terms of population in the Moshi District.

In terms of rate of paving and rate of all-weather capacity, the trunk roads in the region are for the most part satisfactory, but the other classes leave a lot to be desired. Hence the need to build more all-weather roads both for promotion of industry, including shipments of farm produce, and in order to make the everyday lives of the people living in the region more convenient.

Communications

Postal service and telecommunications service are provided by the East African Posts and Telecommunications Corporation (E.A.P.T.C.), which has a head office for the region in Moshi.

Besides this head office, there are seven departmental post offices and 28 subdepartmental post offices throughout the region. This network will have to be expanded, however, in the future.

There are ten telephone exchanges in the region, but since they are concentrated mostly in Moshi, such facilities will have to be expanded in the Pare and Rombo districts.

Water Supply System

Water supply in Tanzania is achieved through two different kinds of systems: urban water supply systems and rural water supply systems. The former have private connections to individual houses, while the latter provide only domestic water points for communal use from which housewives carry water to their own homes. Another distinction between the two is that in the case of urban water supplies consumers are charged either at a metered rate or in the form of a property tax, whereas rural water supply systems are not to any degree self-supporting.

The Rate of Rural Water Supply

The rate of rural water supply in the region in 1976 was 44%, in comparison to an average of 20% for the entire country, this rate being higher than that of any other region in the country. Besides the relative economic well-being of the region, the following are technical reasons for such a high rate.

Ease of water resource development and water intake
(River streams and springs account for a considerable portion of water resources.)

Economy of water distribution
(90% of water distribution systems depend on gravity)

Efficiency of water supply
(Water supplied population per project in this region is 3,164 persons versus an average of only 2,355 nationwide.)

Rural Population With Piped Water

Piped water supply in this region was commenced in the early 1960's, with clean water being supplied to about 300,000 people by 1975.

The water supply rates in 1975 were 46.4% in Moshi, 28.4% in Rombo, 24.0% in Hai, and 47.5% in Pare.

Present Development of Water Supply

As of 1975, 887.5 km of pipeline was laid, and the total length will be approximately 2,000 km by 1980.

In 1970 WDID adopted several new design criteria in order to reduce project unit cost.

The standards for rural water supply in Tanzania are those tentatively proposed by the Tanzanian Water Health Standard Committee. In 1975 physical and chemical tests on water were carried out which indicate that most of the water is suitable for domestic use, though some of it requires chlorination and removal of iron.

Problems in Water Supply

The water-supply and water-use system of the Kilimanjaro Region can basically be divided into 3 patterns: 1) mountain areas, 2) footland areas, and 3) areas along the Pangani River.

The following are future problems that are anticipated on the basis of an analysis of these three patterns:

Qualitative and quantitative change in water demand
(mountain areas in Moshi, Rombo, and Hai);

Stabilization of water supply
(mountain areas in South Pare);

Tightness of water supply due to increase in urban population; and Water use systems in newly developed areas.

Urban Water

There are urban water supply systems in the towns of Moshi and Same, their water supplied populations being 30,000 (60% of total pop.) and 6,000 (40%), respectively, in 1975.

Sewage Disposal

There is only one sewage disposal system in the Kilimanjaro Region, that of Moshi Town. So far, 30% of the existing dwellings in the town have been connected to this system. The existing sewage disposal system consists of a sewage treatment plant and a sewer network which covers only the central areas of the town.

The provision of sewage disposal service is not only of great benefit to those directly provided with it, but also an essential condition for maintaining a healthy living environment in the town or area as a whole. It will be particularly important in the towns of Moshi and Same because of the sharp increase expected in quantity of sewage discharge and its pollutant content and increasing residential density.

Electrification

Power consumption in the Kilimanjaro Region in 1975 was 19.0 million KWH, and the number of consumers in the same year was 3,858. The rate of increase of power consumption between 1965 and 1975 was only 80%, or less than half of the average of 170% for the whole country. The percentage breakdown of electricity consumption by category of consumer is as follows.

Domestic	Commercial	Industrial	Public lighting
21.9%	16.9%	60.0%	1.2%

Coastal Grid System and the Kilimanjaro Region

In the past the Kilimanjaro Region adopted a regional power self-supply system together with Arusha known as the Arusha/Moshi System.

A new system was adopted to ensure balance between supply and demand over a wide area by raising a 132 KV power transmission line from Hare in 1976 for integration of the power supply with coastal regions.

This is called the "Coastal Grid System," by which a steady supply of power to this region from large-capacity hydro-electric stations in Hare and Kidatu has been made possible.

Power facilities in this region include the following:

Power stations	: Nyumba ya Mungu Hydroelectric Station (8MW) Moshi Thermal Station (0.8MW) Kikuletwa Hydroelectric Station (1.16MW)
Substations	: Kiyungi Substation (132/66 20MW) (66/33 10MW) (33/11 2.5MW) Moshi Trad. School Substation (33/11 5MW) Same Substation (132/66/33/11)
Transmission and distribution lines	: 132, 66, 33, 11, 0.4 KV

Employment

Manpower development is a key factor to the economic and social development of Tanzania, and top priority has been placed on it as a national policy by setting the goals of universal primary education and achievement of self-sufficiency in manpower at all skill levels.

The population over 15 years old was about 51% of the regional total in 1975, and the labourization rate was about 62%, women accounting for about 38% of the regional labour force. Employment in the agricultural sector is overwhelming, accounting for 83% of the regional total, and more than 90% of employment in agriculture is accounted for by smallholders. Unemployment stands at 9.4%, which is much higher than nationwide. In fact, one of the biggest problems facing the region is that of finding employment opportunities in the coffee-banana belt of Mt. Kilimanjaro for young people, most of whom are primary school leavers without full-time work owing to the shortage of agricultural land.

Educational Level

The educational level of the people in the region is generally higher than the national average, as evidenced by literacy and education figures. The literacy rates of the region and the whole country in 1976 were 84% and 70% respectively. Also, whereas the region accounted for only about 6% of the national population, it accounted for about 10% and 22% of the total numbers of primary and secondary schools in the country.

From the regional point of view, secondary education is important to manpower supply as it is one of the main sources of middle-level manpower. The number of secondary school leavers in the region is estimated at 19% of the national total. Moshi Technical Secondary School has been operational since 1966 as a valuable source of supply of skilled labour. However, it serves the whole nation as there is only one other technical secondary school of its kind in the country at present. In accordance with government policy, vocationalization of secondary education has been making way since 1973. The reorganization of 8 existing secondary schools other than Moshi TSS is now under way: 2 agriculture-oriented, 4 commerce/craft-oriented, 1 technical and 1 home economics/craft-oriented secondary schools.

At present there is only one technical college and only one university in the country for provision of high-level manpower, although another technical college is under construction at Arusha. A number of vocational institutions which provide high- and middle-level manpower have been operated by various ministries and parastatals, but again not on a regional basis. In light of the present state of higher education and vocational education and training, the regional requirement for high- and middle-level manpower has to be adjusted for the most part at the national level.

Salaries and Wages

Minimum wages are stipulated by law: 380 shillings per month for commercial work and 230 shillings for agricultural work. The average monthly wage of employees in the region was 600 shillings in 1975, as compared to 569 shillings for the whole country. In general, salaries and wages of employees of parastatals are higher than those elsewhere, and those of private enterprises are the lowest. The wage gap between industries is significant while that between male and female seems to be minor. The working hours are usually 8 hours per day, but 7 hours in the case of government employees.

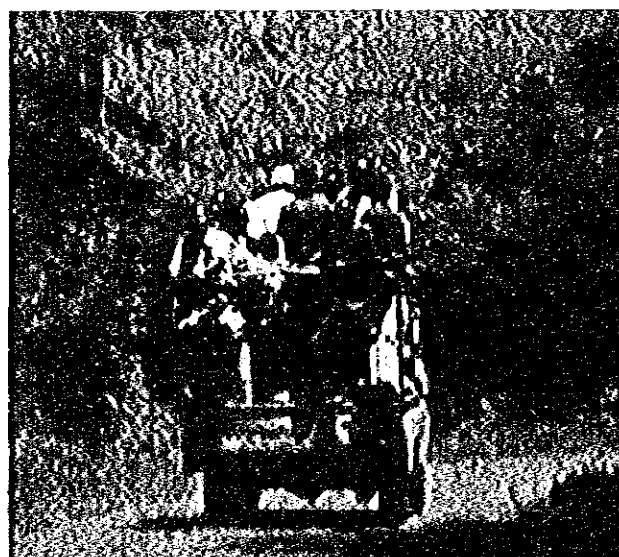
Major Indications

Employment, labour force & population (1975)

Agriculture	204,374	81.6%
Mining	1,046	0.4
Manufacturing	11,146	4.4
Construction	1,293	0.5
Public utilities	769	0.3
Commerce	5,963	2.4
Communications	4,343	1.8
Services	21,638	8.6
Total	250,572	100.0%
Unemployed	26,000	
Labour force	276,570	
Population, 15 years & over	441,102	
Population	864,514	

Secondary education (1976)

No. of secondary schools	30
Enrollment	8,191
Form IV leavers	1,550
Form VI leavers	152



Commuters