PART FOUR : ORIENTATION AND STRATEGY

1. BASIC STRATEGY

1.1 Development Strategy

Optimum development of underdeveloped economies requires efficient utilization of all available means under given constraints, and development strategy should be formulated in such a way as to effect significant improvement in the situation in each development stage over that preceding it as measured by the extent to which successive development goals and targets are met.

The following are five specific strategies that should be adopted for the integrated development of the Kilimanjaro Region:

(1) Improvement and consolidation of the water supply system is basic to the overall development of the region in terms of both agriculture infrastructure and social infrastructure, particularly since the basic orientation of such development will be ongoing reinforcement of the agricultural sector for higher productivity.

(2) From the standpoint of efficiency of investment in social infrastructure, maximum use should be made of existing infrastructure in agglomerated areas through improvement, and extension on the basis of evaluated potential. Moreover, since organization of villages is essential for rural development, pilot villages with standardized social infrastructure and adequate production bases will point the way for further villagization programs.

(3) Since insufficient foreign exchange holdings are a serious constraint on national development, the importance of export products should be stressed in both agricultural and industrial development.

(4) Small-scale industry based on agriculture should be promoted to provide employment opportunities for the growing labor force. At the same time, programs for wider application of basic technology and improvement of existing production facilities should be implemented.

(5) If the people are to be provided with well-balanced social infrastructure and otherwise enjoy an improving quality of life under limited economic capacity, active promotion of family planning is an absolute must.

1.2 Development Stages

The development of a socioeconomic system requires method, method that cannot be by-passed or oversimplified when what is at stake is the lives of the people and the survival and prosperity of society. Each process lays the ground for the next, and each depends on the efforts of the people themselves and the changes that take place in the external environment.

The same applies in the case of a regional integrated development plan. Accordingly, we must allow for three kinds of division of time into periods.

The first is division into periods relating to the development tasks at hand, which often correspond to the stages of development of a socio-economic system:

(1) The period of independence and Africanization

This period was obviously one not so much of economic development as of destruction of the old regime and construction of a new independent Tanzania. Although Africanization may have represented the first signs of new economic development, it was substantially a period of both vehement change and stagnation that was dragged out, if not excessively destructive.

(2) The period of preparation for stability and development

This is the period in which the region now finds itself as it is about to embark upon its integrated development plan. It is a period in which amends must be made for lost markets, rapidly growing population must be absorbed, stagnation of production must be overcome, and accumulation of capital must be recommenced--in other words, a period in which the transitional socioeconomic system brought about by independence must be replaced by a new, productive, and stable socio-economic system.

(3) The Period of National Economic Integration

The development of a regional socioeconomic system based on agriculture must initially consist of strengthening of the regional economy through self-reliant efforts. Such development, however, will invariably strengthen interregional economic relations and lead to national economic integration as a sequel to national political integration, giving rise to the need for competition between regions and their economic specialization. Particularly in view of the fact that the Kilimanjaro Region is one of the more advanced regions of Tanzania, the role that it will play as a key part of the national economy is a very important question. Educational and other social infrastructure will have to be improved if this period is to be a successful one.

(4) The Period of the East Africa Community

The Kilimanjaro Region also has a close historical connection with Kenya, and particularly the Nairobi area. The closest port to it is the Kenyan port of Mombasa, and the region is incorporated in Nairobi-based tourism circuits. Moreover, the agriculture produce of the region has very strong competition in that of certain areas of Kenya. One foresees approximate simultaneity of this period with period (3) above, the two together representing a major turning point in the economy of the region. Furthermore, period (2) above obviously must be not only a period of initial construction and rebuilding of the economy but also a period of ample preparation for these periods.

(5) The Period of Asian-African Competition

What must be prepared for after period (4) is, of course, competition with the new Asia and Latin America. This could very well necessitate a very great change in course on the part of Africa, the successful accomplishment of which will depend on how successfully the turn is effected in periods (3) and (4).

It should be noted that the integrated development of the Kilimanjaro Region will create the regional economic conditions that will make it possible to adjust to this period successfully.

The second kind of division of time that we must concern ourselves with is project stages.

Naturally enough, development projects result in change in regional functions even in areas other than the area immediately affected. Accordingly, it is possible to indicate the time sequence of development of regional functions in terms of the units of time covered by individual leading projects.

The third kind of division of time is according to tasks. And since leading projects are the main strategy for completing tasks, there is correspondence between this time division and that of project stages.

Thus, once the sequence of leading projects is determined, their scale and areas of influence will be determined by the relevant economic and fiscal conditions.

By expanding regional functions, each leading project will, through its economic fruits, not only give rise to the need for the sequent project but also determine the feasibility thereof. This will both necessitate and facilitate continuity between different stages in economic and fiscal planning.

Regional integrated development planning therefore has its own in-built chronology, and the setting of 5-year, 3-year, or whatever periods for individual plans is merely an administrative convenience.

This applies, of course, to the Kilimanjaro Integrated Development Plan as well.

The Kilimanjaro Integrated Development Plan will truly be a plan for the development of the region only if and when the cyclical process of implementation of the contents of the plan as based on the results of actual observation and study followed by transition to the next plan on the basis of the results of the first truly becomes a regional administrative process and a process of participation on the part of the people of the region. This report is only the beginning.

Let us sum up by defining integrated development planning as a system of action plans for the running of a socioeconomic system.

2. RURAL DEVELOPMENT STRATEGY

2.1 Introduction

Tanzania rural development policy has undergone various stages in the process of implementing it. At a time it was an "improvement and transformation" approach through village settlement schemes of early 1960s. At another stage Tanzania moved to a more drastic and rationalized policy of Ujamaa, which we are, at the present moment, at its most logical and pragmatic implementation stage. The rural development policy which was officially proclaimed in 1967, is a part and parcel of the overall Ujamaa policy, which is the national ideological stand which will lead the nation to its socialistic goal. People have committed themselves to the principles of socialism as presented in the Arusha Declaration.

In the process of implementation, the Ujamaa, policy as related to rural development, it has met a lot of problems due to various reasons. At a time it has been due to lack of personnel, at another it has been due to low level of political understanding of those who are charged with the task of implementation. But more than that, it has been due to lack of proper understanding of the ecological and cultural situation in the area where the implementation process is to take place.

Tanzania as it is, though it is a one nation which to some extent has been unified in various aspects, and thus can be said to have succeeded in eliminating cleavages, there are still, some historical, cultural and ecological factors which differentiate one area from another. It is these factors which have to be taken very seriously into consideration when planning for social development within the national context. Without taking very seriously such factors, the implementation process can be very difficult even though the policy itself is a good one. This is because the implementation stage takes place within the environmental and societal context.

The national contextial framework which every plan has to adhere to are the set goals and aspirations of the nation. When these have been accommodated well one can apply the "shifting of gears" technique (Omari: 1976) in the planning and implementation stages so as to achieve the set goals.

2.2 The Tanzania Rural Way of Life: in particular Kilimanjaro Region

(i) The Ujamaa Village Development

The present Tanzania rural way of life is of mixture. It is neither mature socialistic society nor is it capitalistic. The whole situation can be summarized as "marching towards socialistic goal". And this reflects the national situation as a whole. At this stage when Tanzania as a nation is progressing towards her intended goals, such mixture of life should be expected. At

this stage a solid foundation has been laid down on which a solid future is to be built.

Let me mention the mixture which I have in mind for this is related to one particular point which has to be explained in the course of writing up this paper.

Since Tanzania opted for socialistic development, her rural life has been the target for social development equally to urban. One aspect of this social development is the charge of structural relationships and social systems which have been operating hitherto. According to the 1975 Village and Ujamaa Village Act, people in the rural areas are required to live in Ujamaa Villages. As it can be noted in Table I below, the growth of these social units has been very tremendous ever since they began being established in 1969 when the existing records were released. At that time there were only 809 Ujamaa villages. By March 1976, there were 7,684 villages and Ujamaa villages throughout Tanzania. In these villages, it is estimated that there are 13,065,220 people living in them. By the end of 1976, it was announced from Prime Minister's Office that about 85% of the rural people in Tanzania, who are 93%, were living in these various villages. Thus the thrust of grouping rural people together into Ujamaa villages which started ten years ago, has become a way of life in rural areas of Tanzania. Thus far achieved is something to be proud of. But the way ahead is more difficult than the beginning for it is related to the production level.

Before we can briefly discuss the problem of agricultural production in Tanzania, let us first look at the Ujamaa villages development in Kilimanjaro region.

Ujamaa Villages by Regions as per March 1976 (Mainland) (Table-1)

Region	1969	1970	1971	1972	1973	1974	1975	1976
Arusha	20	25	59	92	95	110	180	319
Coast	46	56	121	185	188	238	298	303
Dar es Sataam	-	-	-	-	-	25	53	52
Dodoma	40	75	246	299	336	354	388	392
Iringa	60	350	551	630	659	619	464	475
Kigoma	14	34	132	129	129	123	193	194
Kilimanjaro	7	9	11	24	24	14	16	535
Lindi	148*	185*	572	626	589	339	315	315
Mara	19	174	376	376	271	111	303	332
Mbeya	22	91	493	713	715	534	933	581
Morogoro	16	19	113	116	118	96	397	397
Mtwara	264*	465*	748	1,088	1,103	1,052	773	459
Mwanza	10	28	127	211	284	153	606	617
Rukwa	-	-	-	-	-	121	385	385
Ruvuma	26	120	206	206	242	180	315	217
Shinyanga	6	98	150	123	108	134	369	386
Singida	12	16	201	263	263	317	258	276
Tabora	41	52	81	148	174	156	324	398
Tanga	37	37	132	245	245	255	302	499
West Lake	21	22	46	83	85	77	72	492
Total	809	956	4,464	5,556	5,628	5,008	6,944	7,684

Source: Maendeleo ya Vijiji vya Ujamaa, Dodoma Ofisi ya Waziri Mkuu Juni, 1975
Maendeleo ya Ujamaa na Ushirika, Dodoma, Ofisi ya Waziri Mkuu Juni, 1976

(* Estimated)

The table above gives us the situation in Kilimanjaro region as regard to the Ujamaa villages development.

Between 1969-1975, Kilimanjaro region has been the last quantative wise, in the progress of Ujamaa villages formation. While most regions have been in hundreds of Ujamaa villages, Kilimanjaro Region has remained in tenth until 1975 when the new Act on the procedure of registering and establishing Ujamaa villages was inacted. As a result by June, 1976 there were 535 villages. Some of these are Ujamaa villages proper and others are ordinary villages which under the new Act are allowed to operate.

Under the new Act, rural people are grouped together in social units comprising of 250 kaya (families) regardless whether these are leading Ujamaa life economic wise or not. This is considered to be a viable first stage towards Ujamaa living. People group themselves first and then they will work out their Ujamaa economical plans later. Because of this new procedure, Kilimanjaro Region has now many villages while before the Act, she was very low as regard to the numbers of Ujamaa villages.

The new procedure in establishing villages and Ujamaa villages has enabled areas like Kilimanjaro Region to regroup their traditional villages without changing very much the structural relationship as it happened in other places where people were moved from one place to another for the purpose of establishing Ujamaa villages. It was due to this previous procedure that, Kilimanjaro Region and other regions which have very well developed traditional land tenure system were not in the forfront of developing Ujamaa villages. People were reluctant to move into Ujamaa villages because of the traditional attachment to the kihamba (Chagga) and kithaka (Pare). Furthermore, among these two ethinic groups, an entrenchment of cash crops had already been developed. Peasants had been used with cash crops like coffee and cotton from early 30s to today. They were already in cooperative endeavour under Kilimanjaro Cooperative Union and Vuasu Cooperative Union which enabled them to sell their crops cooperatively with a minimum of exploitation since such cooperative movements were attached to the international capitalistic systems (Lukwaro: 1976, Hyden: 1974). Brewin (TNR: 1965) writing about the beginning of coffee growing agriculture system which put the Chagga, and to the same extent the Pare, into the cash economy, has the following to say:

> The planting of the first coffee tree at Kilema Mission over 60 years ago was the beginning of a period of sustained development on Kilimanjaro which brought the Chagga people to a state of prosperity based on agriculture which surpassed that of most of the other peoples of Tanzania.

The coffee agricultural economy which was stated among the Chagga

people was spreaded to the Pare people as well. Though the ecological situation between these two ethinic group differ considerably, nevertheless we can generalize that it is this particular cash crop which influenced the people of Kilimanjaro to get with cooperative movements in early 30s. While on the uplands coffee became the main cash crop, in the lowland, those who managed to cultivate, especially among the Pare, cotton became another cash crop which has become very popular among the peasants. I am mentioning these two main cash crops in the region not because there are no other cash crops grown in the region, but because the peasants have been engaged in these two cash crops for much longer time. Later, peasants have been engaged in sisal, rice, and various beans production for cash and cooperative endeavour. Such kind of cooperative, as we will note later on, could be the basis for future Ujamaa development in the rural areas of Tanzania. Of course, such a cooperative, with the impact of capitalistic mode of operation needs restructuring and re-build afresh. However, the elements of cooperation is there and should be the basis of future endeavour and development.

Looking at Ujamaa village development prior to 1975, there were hardly any on the mountain slopes. In fact, to many peasants with well established land tenure system based on kihamba and kithaka system, to move into Ujamaa village was meant for those who had no traditional pieces of land to cultivate. Even the best Ujamaa villages which have won first prize on the annual Sabasaba celebration have been those on the plains as the Table-2 below shows.

Best Ujamaa Villages in Kilimanjaro Region 1970 - 1976 (Table-2)

Year	1970	1971	1972	1973	1974	1975	1976
Village	Mkwini	Mtakuja	Bendera	Chekereni	Shirimatunda	Lwami	Chekereni

Source: Vijiji vilivyoshinda Sabasaba 1976

Furthermore, the majority of the villagers in these best villages are neither Chagga nor Pare. The few Pare and Chagga people who are in these villages are either those who had no land to till or are engaged in animal husbandry, an economic activity which is not viable on the mountain slopes since there is no enough area for grazing. There is animal husbandry practiced on the mountain slopes by individual families. But such economic activities are neither based on Ujamaa living nor in large scale either. It is nowadays that some kind of cooperative ventures are being thought of otherwise as a whole this economic activity based on animal husbandry is carried out on individual families cooperation like the agricultural activities.

(ii) Land Use

As we noted in section one of this paper, the Kilimanjaro Region has been favoured by the ecological situation. The soil is so rich when compared with for example, Dodoma or Singida Regions. Kilimanjaro stands on the same level as Tanga, Mbeya, Iringa, Arusha and West Lake Region in respect to land fertility. Kigoma and Morogoro to some extent come next.

It is this soil condition which has become one of the main factors in socio-economic development in this region. With the impact of cash crops and thus access to the money economy, Kilimanjaro Region has become one of the areas in Tanzania with a relatively developed peasants' agriculture.

Generally, land use in Kilimanjaro is based on kinship structures. Basically, all inhabitants of Kilimanjaro Region are patrilineal and thus land ownership and inheritance follow this pattern. Each family (clan) has its area where its members live and cultivate. Each family has kihamba (Chagga)/kithaka (Pare) where all the agricultural activities with permanent crops, like banana, eleusine and coffee are planted. Such areas of land are generally situated on mountainous slopes where a constant manuring is done from cow dung. This kind of cultivation helped the peasant to develop their crops adequately at the same time preventing soil erosion.

In addition to this family shamba nearby their homesteads, there are some peasants who have farms in the lowlands. These farms are in area not generally considered as clan land on the same level as kihamba and kithaka for Chagga and Pare respectively. Such farms have been developed for the purpose of cultivating annual crops such as maize, cotton, sunflower and others. Of course, in the process of using the land for quite a long time "the utilization right" may change into "the possession right". But such a process may take one to two generations before if happens. Furthermore, if such a piece of land was given by one family to another for the purpose of cultivating annual crops only, after a while it may be claimed back.

Another usage of the plains, especially among the Chagga, is that they have become the source for supply of grass for cattle fodder. One particular noticeable feature of this system of land use is the carrying up from the lowlands great quantity of grass. Traditionally it was the task of women although nowadays here and there lorries and pick-ups cars are used for the same purposes. Among the Pare, the lowlands are generally utilized for animal husbandry although on the eastern side of southern Pare one notices paddy and sugar cane farms.

There is no doubt about the fertility of the lowland in Kilimanjaro Region. This can be proved by the few peasants who have

moved to the lowlands and are cultivating there. Areas such as Kikafu Chini, Arusha Chini, Miwaleni, Mwanga, Kisangara, Ndungu, Gonja Kihuriro, Mkomazi and Butu, are very fertile. These areas, with the present technology, they should prove very productive and could be the source for high yield of agricultural produces. The only problem facing some of these areas mentioned above is water scarcity. As I will mention later on in this paper, when proper irrigation system has been provided for, peasants living in these areas could develop much more than it is today.

Land utilization on the plainland as regard to Western part of Pare areas, seem to be difficult and unsuitable for agricultural economic system in most places. Some exceptions can be singled out however, as regard to the utilization of Nyumba ya Mungu Dam irrigation system. But since Nyumba ya Mungu Dam depends on water from mountainous areas, especially from Kilimanjaro, Meru and North Pare, the development of the irrigation system will depend very much on the availability of water from these areas. It may happen that water is used by other peasants on the mountainous slopes to irrigate their crops, thus preventing much flow of water to the intake at the dam. It may be sometimes, due to the shortage of rain, not enough water is getting into the dam. And since the dam is being used as a source of electricity, depending on Nyumba ya Mungu Dam for irrigation will have to be developed taking other factors as well.

Land utilization is not limited to the agriculture and animal husbandry only. On the slopes, at about 5,000 ft. above sea level, there is forest belt. In such forests there are also wild animals and birds. The belt serve various purposes. At one level, it is the source of timber and woods in general. At another, it is a natural source for water springs. In Kilimanjaro area, the forest belts are connected with the beautiful mount Kilimanjaro and thus it becomes a kind of national park as well.

Besides the few mentioned produces above, we could also add the following crops in relation to the land utilization. In the areas where some big farms have been earmarked for special crops, such crops have been of commercial purposes and the farms in this respect are run cooperatively or as companies. I have in mind agriculture produces like sugar which is produced under irrigation system at the Tanganyika Planting Company at Arusha Chini and another factory of a less scale at Gonja. We have also irish potatoes, onions and pyrethrum farms on the higher western slopes of Mount Kilimanjaro. It is also on these areas where we find the newly nationalized coffee estates which were originally owned by the capitalistic farmers.

As a general note, on the mountains, land utilization has reached its maximum. Population pressure is noticeable. Traditional land in the name of kihamba and kithaka among the Chagga and Pare respectively is no longer adequate for being utilized economically

by all the people residing in the area. The system of fragmenting the family/clan land among the heirs, (normally sons) enhance this uneconomical land use in Kilimanjaro Region. The small pieces of land, notwithstanding the ecological situation, cannot be utilized by the peasants economically whereby they can produce not only for their subsistence, but for surplus as well. In such a situation, there is a tendency of people moving into areas which were hitherto not cultivatable due to the traditional norms and customs. There are incidences whereby peasants have cultivated in the forest reserve areas and near sources of water, places which were forbidden to be cultivated in the past by the elders. Such areas were earmarked for religious functions like shrines or other purposes approved and sanctified by the society at large. But due to the coming of western culture, especially as introduced through educational systems and foreign religions, such beliefs are non-existence. As a result people do not regard such places as sacred anymore and the end result is to cultivate in such places. In the long run, forests and sources of water are destroyed and the people may suffer the consequences such as lack of water and rain. Furthermore the beauty of the country is destroyed as well.

The other alternative, which seems to be the precedent, is for the peasants without enough land for cultivation to move into plains. When this happens, the farms which were normally called shamba, are turned into kihamba, as in the case of Chagga (Masao: 1974). This kind of movement, introduces new settlement patterns which tend to weaken kinship ties since people are no longer living together as social units as noted above. It is, however, of interest to note that, for the future socio-economic development based on diversification of economic activities, the plain land is the logical place. This is said, not to undermine the prospects on socio-economic development of the mountainous areas, but as a balance check point for the problem of land availability on the mountainous slopes. Looking from that perspective, one can say that, if the population is distributed evenly and such exercises are met by good and economical land utilization, Kilimanjaro Region is not over populated. But when available good land on the mountains is correlated with the existing population density, one can say that there is a population pressure in Kilimanjaro Region (Lyimo: 1975).

It has been noted that for the whole region, suitable land for agriculture is less than 3,000 sq.km. (TANU-Kilimanjaro: 1974) This can be said in relation to the available suitable land without taking into consideration the technological know how which can change even the unsuitable areas to become very productive.

(iii) Infrastructure

Kilimanjaro Region is relatively one of the better off regions

when compared with other regions. Even the government investment pattern has been very favourably in this region in the past. It is estimated that the government of Tanzania, between 1969 - 1975 had invested Shs. 240/- in Ministries and Shs. 256/- in parastatals per head in Kilimanjaro Region. This amount to Shs. 496/- per head during the period mentioned above. When compared with other Regions (see Table-3 below), which may be classified as better off, e.g. Dar es Salaam/Coast, Morogoro, Iringa, Mbeya and Arusha, one can say that Kilimanjaro is well ahead for all other regions in this category have international cooperation projects taking place. For example, the high per head investment recorded in regard to Regions like Dar es Salaam, Coast, Mbeya, Morogoro and Iringa is due to the TAZARA Railway while Arusha is due to the East African Community Headquarter projects and expenditures.

Government Investment in Regions per Head, 1969 - 1975 (Table-3)

	Ministries	Parastatals	Totals
Better off Regions			
1. Dar es Salaam/Coast	919	1,534	2,451
2. Morogoro	376	1,502	1,878
3. Iringa	228	489	717
4. Arusha	223	435	658
5. Mbeya	205	435	640
6. Kilimanjaro	204	256	496
7. Tanga	N/A	N/A	N/A
Middle Regions			
8. West Lake	189	105	294
9. Mwanza	104	189	293
10. Mtwara	194	39	233
11. Kigoma	135	89	224
12. Tabora	148	64	212
Badly-off Regions			
13. Mara	112	52	174
14. Ruvuma	121	22	143
15. Dodoma	118	18	136
16. Shinyanga	77	34	111

	Ministries	Parastatals	Totals
17. Lindi	99	10	109
18. Singida	92	6	98
Total Tanzania Mainland	224	341	565

Source: A. Coulson: 1975

The above table can be used to illustrate the unevenly development process in Tanzania. It is, however, the aim of this paper not to get involved in this point which is nevertheless very important. The aim is to illustrate the position of Kilimanjaro Region in relation to the investment patterns of the government. This may serve as a good indicator to us when looking into the nature of infrastructures in the Region.

Basically, Kilimanjaro Region is well situated with regard to communication systems. There is Tanga-Arusha road which is all weather road and tarmac. It is strong to carry heavy trucks not more than 18 tons. Besides this, there are several good roads leading to various Districts and divisions which are equally all weather roads. In addition to roads, there is Tanga to Arusha railway and the newly built Kilimanjaro International Airport capable of handling even Jumbo Jets, is situated within the region. Telephone communications in this region are good too. As regard to the external linkage, there are roads leading to Nairobi and Mombasa. And up to the recent time the Kahe - Voi railway was operating.

Besides public transport there are individual buses, lorries and pick-ups which ferry people and food crops from one area to another. One can say that, perhaps without exagaration in the whole Tanzania, there is no other place with so many individual means of transport as it is in Kilimanjaro Region.

As regard to marketing system, when compared with other places in the country, the situation is relatively good. Peasants sell their produces to the local markets through barter exchange as well as for cash. The markets are either situated in the mountain slopes or on the lowlands within small towns or plantations. For this reason, and with the impact of cash economy in this region, one can say without hesitation that the peasants of Kilimanjaro Region have been into the orbit of cash economy for a long time. Generally, the income of the people is relatively high when compared with other regions.

When we come to education, this region is also ahead. In 1975, there were 437 primary schools with about 52,260 children in standard one alone. (Elinewinga: 1976, Table-5) Such a growth in

primary school education has been a phenomenon for Kilimanjaro Region as it can be noted in Table-4 below. There are 28 secondary schools and 5 colleges for higher training in various fields. Of course, such institutions are nationally operated and controlled. But the mere fact that these institutions for higher learning are situated in this region, is of interest.

Primary Schools in Kilimanjaro, 1965 - 1975 (Table-4)

Year	1965	1970	1971	1974	1975
No. of Schools	333	348	351	418	437
No. of Pupils	78,445	84,261	90,001	111,224	125,749

Source: Wizara ya Elimu ya Taifa Kijitabu cha Takwimu Takwimu za ulinganisho 1961 - 1975, Dar es Salaam April 1976. Note that the figures do not include unregistered schools.

Generally Kilimanjaro Region is endowed with the thirst for education. Parents have realized the use and advantage of education as a tool for social development for quite a long time. In fact in some areas children of school age do not get places in schools. This is contrary to other areas of the country whereby vacancies at schools are never filled.

Kilimanjaro Social Infrastructure, 1974 (Table-5)

Population	816,000
Per capita	679
Education	
Enrolment ratio	66%
Completing standard VII	58%
Health	
Coverage of health facilities % of population within 5 km	90%
Water	
Rural population supplied with water	513,000
Urban population supplied with water	58,000
% of population supplied with clean water	40%

Source: Prime Minister's Office, Guidelines for Third Five Year Development Plan 1975/76 - 1979/80.

The above Table-5 reveals some indicators as to which areas need strengthening when we talk about rural development. Although the above indicators are but few of the consumption oriented social development aspects, they are good telling signs. When compared with other regions again, Kilimanjaro may be put at the upper level of the developmental process. It is, however, noted that nutrition level in this region is not very favourable. Life expectancy in this region is recorded as 53 years and mortality rate is 13.6%. Thus there is a long way to go too in this region in the improvement process of the social development aspects of the peasants. It is, therefore, very vital that the intergrated rural development plan take very seriously these social services in the region when planning for rural development.

2.3 Recommendations

Planning for intergrated rural development in Kilimanjaro has to take into consideration the historical context of the socio-economic development of the region. It is from that point of view one can critically avaluate the present situation as regard to the socio-economic development and be in a better position to recommend for a better future social development program.

Kilimanjaro Region is one of the areas in Tanzania which belongs to the "pockets" of development". Due to the historical and ecological situation, the region has a very long history of peasants participation in economic activities and as a whole in their social development. For example, even before the coming of cash economy crops like coffee, cotton and the like, people of this area had developed some kind of technological know how which helped them in their agricultural economic systems. The traditional irrigation system of mfongo/ndiiwa and ndiva/sasi which existed among the Chagga and Pare respectively has been spoken of as of a high level in the technological world of the traditional people. Such irrigation system was carried out successfully using tools which existed at that time. The same system operates even up to this time with some improvement in building the furrows and water holes/dams. The government provides with cements and pipes sometimes and the peasants construct the furrows by themselves through self-help schemes. I believe this should be encouraged among the peasants of Kilimanjaro Region while supplying the technological know how in the process of preparing better and durable irrigation system. Furthermore, the plans for rural development should include some aspects of financial assistance in this area either for buying the building materials of the furrows and water boreholes or in other aspects which the peasants cannot afford to accomplish by themselves.

Peasants in Kilimanjaro are social developmental oriented people. They have tested the fruits of modern socio-economic development through their involvement in cash economy mode of production for quite a long time. Unfortunately, however, capitalistic oriented attitudes which came with the introduction of cash economy is still prevailing in some people in

this region. Thus, when planning for rural development this aspect of way of life among the people of the region has to be taken into consideration.

Notwithstanding the above statement, peasants of this region have a high level of cooperative aspiration. Although such an aspiration has been infiltrated by the capitalistic mode of production due to the historical development of the region, the principles of it could be developed and fostered for a better rural development within the overall Tanzania ideology of Ujamaa and self-reliance. Any plan for social development which does not take into consideration this traditional way of life, it may encounter the problem of non-cooperation among the peasant in the process of implementation. It is a well known fact that there are so many developmental projects which have been accomplished through self-help schemes like those under msaragambo cooperation among the Pare and the like in other Districts.

The obvious advantage of this suggestion is that by enlisting the cooperation of the peasants in the process of their social development, on one hand, a large amount of money will be served and on the other it makes them feel the projects as their own product. It is not a superimposed plan. This is, of course, what decentralization planning system is all about.

Within the above context, there is a need to plan for a more productive system for the peasants. At present, most of the production is either from individual small families farms or big plantation and estates. The rich farmers in this area may produce more if some incentives are introduced. For example, the good atmosphere of world coffee market has brought some joy and big income among rich farmers in Kilimanjaro region for this season. Also the rise of prices of the crops which was initiated by the government has motivated a lot of peasants to produce more.

But this is not the production system which we are aiming at in Tanzania of today. We aim at socialistic farming and productive system whereby people own and control the means of production communally and distribute their fruits accordingly within the members of productive units. The way Ujamaa villages are being established in this region through re-grouping of the traditional homesteads, may not be a viable for real Ujamaa village formation in the forseable future. It is, however, a very logic and pragmatic step towards the end. To achieve this end then, there is a need of restructuring and rebuilding of new systems and structures to replace the old even if those old ones are the most desired one at the moment.

How to succeed on this will depend on various factors. It will not be a desirable strategy for rural development if we just demolish the old structures and systems without replacing them with new and better ones. At the present time, for example, among the peasants in Kilimanjaro Region, what they know and believe in is the Ujamaa system of production which in essence is Ujamaa - cooperative. To expand the notion of

Ujamaa productive system so as to extend beyond family is still a difficult idea to be accepted by many. This, of course, is not a phenomenon of this region alone. It is a nationwide phenomenon, especially in the areas where land tenure system had been developed and cash economy had its feet among the peasants prior to the independence or before the Arusha Declaration.

So, when planning for Ujamaa villages we have to face the reality and deal with the situation accordingly within the national developmental plan context. Ujamaa villages in this region, may be of two to three types especially at the production level. There will be those Ujamaa villages whose members are living in their traditional vihamba and visaka, (plural of kihamba and kithaka respectively) thus owning small pieces of farms where they grow both food and cash crops. But when evaluated at the individual family unit level such production units are of little value economically. Peasants of this kind may belong to the poor peasants group. But when it comes to the marketing system, these peasants will sell their products through the cooperative unit which is their Ujamaa village according to the 1975 Village and Ujamaa Village Act. In this case they are producing individually, and since it is of small scale let us say, less than an acre, be allowed so for they have been doing so for quite long time and changing this mode of production will not effect much change; but when it comes to marketing system, things must be planned to move to a more Ujamaa way. It is not an easy thing but there are vanues already established through the traditional cooperative way which if utilized, they can serve the purpose.

When it comes to those with big farms, there is a socialistic problem in applying the above method. One cannot expect a rich farmer with, let us say, five to ten acres or more, to surrender them easily to the communal endeavour. It takes a person with guts and with a high level of revolutionary mind to do so. Therefore, to my mind this group of people, will take time before they let their means of production be socialized. This then, is the task ahead for all of us in the process of implanting and incultating revolutionary mind among the peasants.

In relation to the above, rich peasants will not let their means of production socialized so easily partly because of the historical development and partly because most of the Ujamaa villages in the country have performed badly economically in the last decade. Peasants will be motivated to join the Ujamaa way if they find that production levels at these Ujamaa villages surpass theirs. But as it is at the present moment, that is not the case in many respects.

Whatever is found among the peasants as regard to their attitude towards Ujamaa production system, should not be construed as negativity towards Ujamaa policy as such. I think at this level of Tanzania socialistic development, we can safely say that a good foundation has already been laid down and both the peasants and workers have accepted the policy. Thus when peasants show some doubts in joining Ujamaa production system it may be due to the past experiences of bad performance among the many Ujamaa economic institutions.

Taking the above general point as related to production system, we can then move to the new and planned Ujamaa villages and treat it as the third group. While on the mountain slopes things may remain the same to some extent structurally, on the plain land, especially where new Ujamaa villages are being initiated and established a different planning should be introduced altogether.

From the beginning, viable systems and structures should be established so as to enable the Ujamaa villages becoming strong productive units. This will involve planning for housing, cultivating areas, and if it is animal husbandry, grazing areas while the place of social services being taken into consideration. At this juncture of Tanzania socio-economic development, it is a must that production level should be increased. And such an increase should be encouraged and planned for in Ujamaa villages. The idea that we should not talk about surplus in socialistic reconstruction, is a perversed path of socio-economic development. In the long run, it will just under-develop the peasants. Peasants should aim at not only producing for themselves, but for surplus which will cater for the town dwellers and for earning the nation foreign exchange.

This end will not be achieved successfully in an Ujamaa village if the crops performance is bad. This may be a result of bad weather or poor method of cultivation. In both cases, it can be prevented. In case of lack of rain irrigation can take place and help the peasants in their production. In case of poor method of farming, the knowledge of good farming should be availed to the peasants. This should be among the priorities when planning for rural development in this case.

Related to the above, the problem of marketing should be looked into more carefully and concretely. Today, individual peasants sell their produces at the markets and to the middle men. Such kind of marketing system cannot exist in Ujamaa villages system of production. A form of cooperative marketing system in all produces should be the best way. For example, Kilimanjaro Region is good in vegetable produces. Green vegetables from Ujamaa villages which are sold to the markets should be handled through viable system of marketing within the Ujamaa policy.

This requires other facilities as well. In order to have vegetables sold cooperatively without loss, there is a need of good storage facilities and transport system. At the present moment we can say that, perhaps in the matter of transport, it would not be of a too much a problem especially in and about the region. But when it entails outside the region, for example, selling the vegetables to other urban centres in the nearby regions where such vegetables are not available, like Dar es Salaam, there is a need to systematize and control the transport systems, like that of the Lushoto Intergrated Development Project (LIDEP) which carry the vegetables to Dar es Salaam. This would apply to other Ujamaa economic produces like poultry and the like.

In planning for Ujamaa villages models, there has been a tendency among some technocratics and planners to have a monolithic type of models for

all Ujamaa villages throughout Tanzania. I think this is not the right way, to say the least. Such an approach tend to forget some environmental cultural and historical factors which have shaped social structures to some extent. In Tanzania, I would think, provided the various models serve to achieve the end, they should be allowed to operate. The most important thing is the functional aspect of the models which will enable the people to practice and carry out socialistic activities communally. So different models will operate in Tanzania. A model which is thought to be functional in Tabora or Mtwara, will not necessarily be the best in Kilimanjaro or Arusha for that matter. What I am saying here is that, the most important things to take into consideration in preparing for a model for an Ujamaa villages are: functional aspect of the models in relation to the Ujamaa socio-economic relation; health aspects of the model and how the infrastructures will be provided within, let us say, an Ujamaa village. So whether houses are arranged on a straight line, horse shoe or circle is immaterial. The question to ask is: will such models of Ujamaa villages serve the aspiration of the people and purposes of the socialistic goal. Once that important question has been answered, let us plan for various models, taking into consideration the variables mentioned above, which have to be accommodated.

Leaving Ujamaa villages in general, there is one point which need stress in relation to the overall agricultural economy in this area. At the present, peasants are generally engaged in either cash crops (edible and non edible) or food crops and few are getting into animal husbandry. But the later system of mode of production has not got into Ujamaa spirit except in few Ujamaa villages like Lwami, which again is a cooperative village in essence. There is a need of more diversification of economic activities in this area. The ecological situation of Kilimanjaro region and the nature of the peasants of this area themselves, do allow the diversification of various economic activities for the well-being of the peasants. Dairy produces, fishing, poultry and pork economic systems should be encouraged. I know some individual peasants have already started these activities here and there. But as Ujamaa economic activities, things have not taken off. As I said earlier, people in this area are very keen in "cooperative endeavours". Such a spirit should be encouraged in carrying out these new economic activities within Ujamaa policy. Also the small scale industry activities which have already been started in this region should be developed and strengthened further in an Ujamaa mode of production.

The aim of rural development in a nut-shell is to improve the welfare of the peasants in all aspects of their livelihood. Taking Tanzania model of social development which is a "man-centred model of social development", man has to develop himself in all aspects of his existence. The aim of Ujamaa villages living, then is to enhance such development.

Taking this broad aim of rural development, the provision of social services in Ujamaa villages is a must. Such services do add the tempo of Ujamaa living among the peasants. As I noted earlier, the peasants of this area have for a quite a long time, been introduced to various

social services. Though at present the situation in this region is relatively not bad, the people themselves demands more. They would like to have more schools, more hospitals and dispensaries or mobile clinics; they would like to have more good roads and clean running water. All these are necessary social services which, when planning for an Ujamaa village, should be taken into account. Some of these social services could be provided in conjunction with voluntary agencies which are always ready to cooperate in the process of social development. Voluntary agencies like religious institutions, YMCA, YWCA, and others could give a hand in this venture. It has happened in other areas, for example in Singida the Lutheran Church has been assisting in providing the villagers with water. The churches have been agencies for change in education and health services, and therefore I do not see why this can not be done in Ujamaa villages. I know, for example, the churches are ready to accept such a challenge and participate accordingly.

As a concluding remarks, Ujamaa policy has gone through several stages and as the President of Republic of Tanzania has said, we made some mistakes in the past ten years. The important thing to remembers in planning for Ujamaa villages, hence rural development in general, we should look back and see where we made mistakes so that we do not repeat the same mistakes again. We have gained some experiences now as regard to this policy. However, the implementation has not been easy. Sometimes it has been due to the ignorance of the planners on the local situation and sometimes it has been the problem of understanding the policy in its contextual relation. We should be in a position now to escape such mistakes because we have accummulated some experiences on how to deal with them.

With the aforesaid few statements, relating them to the socialistic principles which Tanzania is trying to put into practice, we can plan for rural development at regional level without getting out of national ideological context of socialistic development.

LAND-USE PLAN

Contents

1.1 The Purposes of the Land-use Planning

The purposes of the land-use planning in the present report are as follows:

- Classification of the land into types on the basis of natural conditions, location, and present state of use.
- Determination of the potentials of each type for agricultural and other uses.
- Determination of the various alternative land uses of each type to make it easier for administrative authorities to choose the uses that will contribute most to the regional economy.

1.2 The Main Work Components

(1) Date Processing

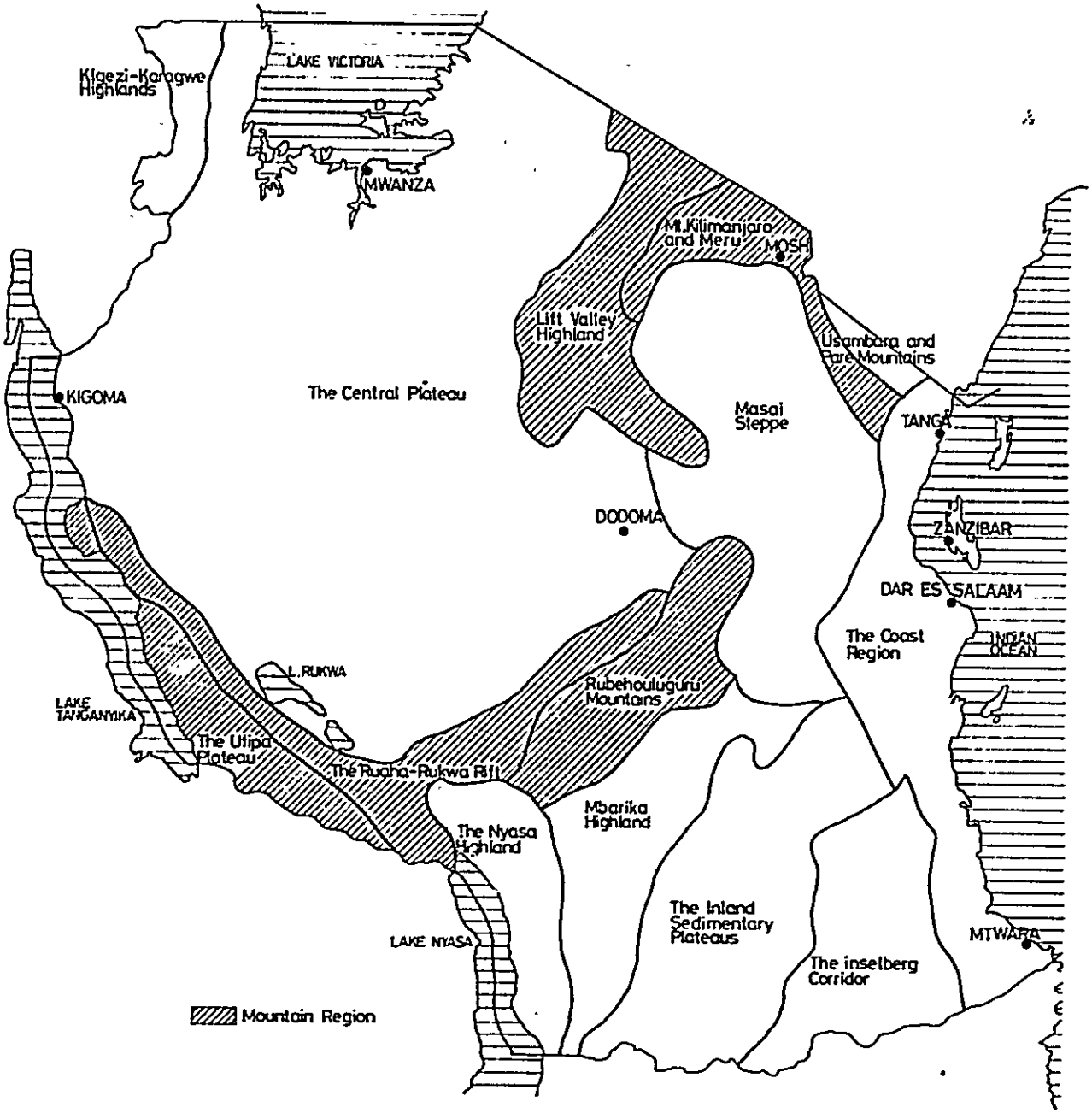
This is a process in which date on the physical conditions of the region is collected, processed, analyzed and converted into basis for study and evaluation in the coordination and integration aspects of the land-use planning process.

Step-1 Presentation of processed data in the form of basic maps on a scale of 1:250,000, in main items being elevation, slope, annual rainfall, natural vegetation, forest and game reserves, existing irrigation, soil type, geology, etc.

Step-2 Further processing and synthesis of the above basic maps for the development of land-use types for application in the land-use plan, the main items being rainfall and altitude, soil fertility, irrigation availability and accessibility, to natural damage, etc.

Step-3 Evaluation of the above composite maps with respect to the present state of land use, the state of production infra-structure, and future anticipated trends, taking into account macroframe and sectorial planning requirements, the main items being, natural land values, conservation values, infra-structural values, etc.

Step-4 Preparation of comprehensive maps on basis of the land-use guidelines regarding suitability of the land for different uses, efficiency of land evelopment, economic balance with respect to the amount of area assigned to each type of use, equitability between different areas, and so on, the main items being land-use zoning and the land development plan.


Kigezi-Karagwe Highlands
LAKE VICTORIA
MWANZA
Mt.Kilimanjaro and Meru
MOSHI
Lift Valley Highland
Usambara and Pare Mountains
KIGOMA
The Central Plateau
Masai Steppe
TANGA
DODOMA
ZANZIBAR
DAR ES SALAAM
The Coast Region
INDIAN OCEAN
L.RUKWA
Rubehoulugurú Mountains
LAKE TANGANYIKA
The Ufipa Plateau
The Ruaha-Rukwa Rift
Mbarika Highland
The Nyasa Highland
The Inland Sedimentary Plateaus
LAKE NYASA
MTWARA
The inselberg Corridor
Mountain Region

(2) Coordination

There are four major kinds of coordination required in the land-use planning:

(i) Coordination with natural conservation planning, the purpose of which is the protection and nurtural resources.

(ii) Coordination with production planning, particularly agricultural production planning, which is a major factor in determination of the overal land-use pattern.

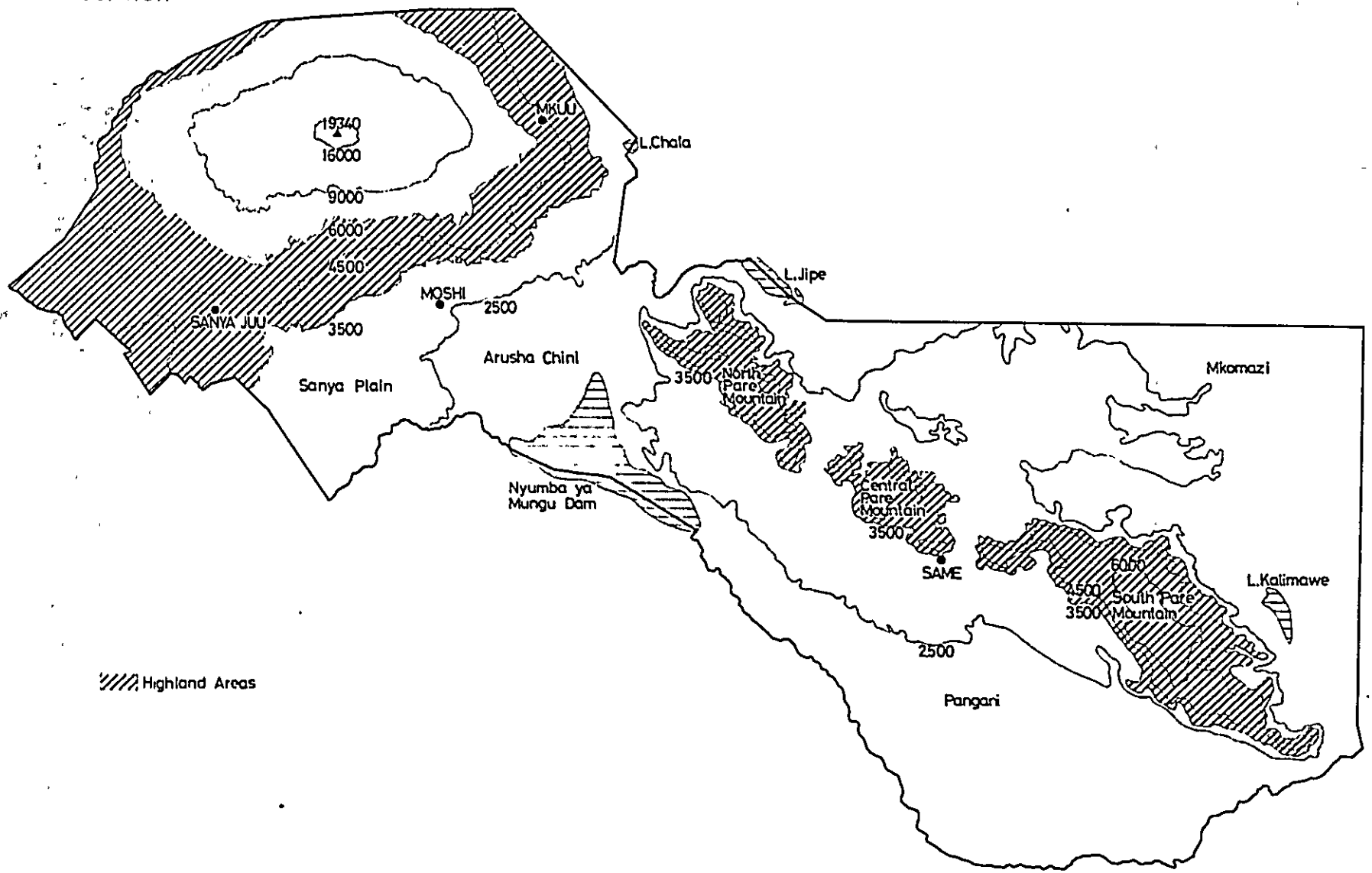
(iii) Coordination with human settlement planning, town and village development planning, and social infrastructural development planning.

(iv) Coodination with economic development, social development, and other macroframe planning.

1.3 Integration

In this aspect of the land-use planning process, measures for implementation of land-use policy and the time and spatial sequences of land development will be determined through overall evaluation of the different possibilities with respect to land-use type and development priorities on the basis of efficiency, fairness, and other criteria and regional land development guidelines set on the basis of the results of the different kinds of coordination mentioned above.

LOCATION


19340
16000
9000
6000
4500
3500
2500
MKUU
L.Chala
L.Jipe
MOSHI
SANYA JUU
Sanya Plain
Arusha Chini
Nyumba ya
Mungu Dam
North
Pare
Mountain
Central
Pare
Mountain
South Pare
Mountain
SAME
Mkomazi
L.Kalimawe
Pangari
Highland Areas

2. LAND-USE INVENTORY

2.1 Outline

The Kilimanjaro Region has a total area of 13,209 km^2*, 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/km^2*, the highest being that of the Mwanza Region at 53.6 persons/km^2.

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/km^2 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.

* According to 1967 national census.

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 km^2, or 16% of the total area of the region, for a gross population density of 255 persons/km^2 and a net population density (water surfaces, forest areas, steep slopes, and other uninhabitable areas not taken into account) of 448 persons/km^2, both of which are 4 times as high as the regional averages (Gross population density of 65 persons/km^2 and net population density of 103 persons/km^2).

The upper lowland areas in the region, located in between the highland areas and the lowland areas mentioned above and known as shamba lands, 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 km^2, consists of semi-arid savanna lands, forests, game reserves, etc.

2.2 Agricultural Area

(1) The net agricultural acreage of the region is 1,630 km^2, and the gross agricultural acreage 1,990 km^2, which includes housing lots, farm roads, irrigation channels, etc., and accounts for about 15% of the total area of the region.

Approximately 70%, or 1,130 km^2, of the net agricultural acreage is accounted for by smallholders, the remaining 30% being cultivated by cooperatives or by public corporations in the form of large-scale estates.

The table below gives, by district, the net agricultural acreage (cultivated area), the rate of cultivation, the cultivated area per household, etc.

	Hai	Moshi	Rombo	Pare	Totals
1. Total area (km^2)	2,109.9	1,764.1	1,435.0	7,900.0	13,209.0
2. Cultivable land (%) (i).	1,516.3 (71.9)	1,346.7 (76.3)	502.4 (35.0)	5,012.9 (63.5)	8,378.2 (63.4)
3. Land already under cultivation (ii)	725.1	621.5	283.8	360.1	1,990.5
3-1 Smallholder cultivation	313.2	354.0	354.2	392.6	1,414.0
3-2 Estates	315.4	203.7	0.6	56.8	576.5
4. Rate of cultivation (%)	47.8	46.1	56.5	7.2	23.6
5. Rural population	155,500	315,900	141,300	177,300	790,000
6. $\frac{3}{5}$ (ha/person)	0.47	0.20	0.20	0.20	0.25
7. $\frac{3-1}{6}$	0.29	0.14	0.20	0.18	0.19
8. Irrigated area	32.0	154.4	3.0	90.0	279.4
9. Rate of irrigation (%)	6.4	34.6	1.0	25.0	17.5

Remarks:

(i) This is the total area of the region minus water surfaces, forest and game reserves, steep slopes, and otter land that cannot be cultivated.

(ii) This is what is otherwise referred to as the "gross agricultural acreage."

(2) Smallholdings

At the present time a full 94% of the households in the region are smallholding households, and the members of these households represent 91% of the total population of the region of 865,000 persons. The land cultivated by them --approximately 3,000 km^2-- accounts for 22.5% of the total area of the region and can be classified into the following three categories according to land-use type: (i) high-density cultivation in highland areas, (ii) cultivation by smallholders in upper lowland and footland areas, and (iii) extensive (as opposed to intensive) cultivation and grazing in lowland areas. Each type is profiled below.

(i) High-density Cultivation in Highland Areas

In areas at altitudes of 4,000-6,000 ft. on the southern and western slopes of Mt. Kilimanjaro and 4,000-5,000 ft. in the Pare highlands which have the most favorable natural conditions in the region for both agricultural production and the living enviroment, including annual rainfall in excess of 1,000 mm, cultivation by smallholders assumes the following characteristics.

Both cultivation and housing are very dense specially in Mt. Kilimanjaro Area, with a cultivation rate of 80%, a population density of 620 persons/km^2, and gross agricultural acreage of 0.66 ha/household.

Approximately 65 % of all of the smallholders in the region are settled in these areas and engaged in cultivation of coffee and bananas. About % of them also engage in stall-feeding dairy cattle raising, each household having several cows, and % of them also have land in lowland areas on which they grow maize and grass from which they make hay for their cattle.

In these areas the ample seasonal rainfall and suitable gradients (4-8 deg. on Mt. Kilimanharo and 4-15 deg. in Pare) have made it possible to develop irrigation to a considerable extent for protection against drought in the dry season, approximately % of the cultivated land in them being coverted by such irrigation systems.

In order to cope with growing population and increasing demand for land, it is necessary that measures be adopted for maximum and most effective use of all of the land available in these areas since they are the best endowed areas in the region in terms of the quality of the land itself and the extent to which irrigation, road, and other networks have already been developed

(ii) Cultivation by Smallholders in Upper Lowland and Footland Areas

The following are the characteristics of cultivation by smallholders at altitudes below 4,000 ft. on the slopes of Mt. Kilimanjaro and primarily in footland areas in the Pare District in which annual rainfall averages 700 mm.

The rate of cultivation is 35 %, the population density 60 persons/km^2, and the gross agricultural acreage 2.72 ha/household, which respectively represent 50 %, 10 %, and 400% of the corresponding figures for the highland areas.

Approximately 25 % of all of the smallholders in the region are settled in these area and are engaged in mixed cultivation of mainly maize and beans. Approximately % of them also raise a score or two of meat cattle, goats and other livestock by grazing.

The cultivated land is basically distributed along the irrigatio channels leading from the highland areas and along the courses of rivers, a major problem being evaporation and seeping underground of these waters in the dry season.

Another problem is the fact that settlement in these areas is rather scattered, which makes for low efficiency of production and social infrastructure, and correction of this situation is a major task involved in the land-use planning.

(iii) Extensive Cultivation and Grazing in Lowland Areas

The following are the characteristics of cultivation by smallholders in flat areas below 2,500 ft. at the base of Mt. Kilimanjaro, where the annual rainfall is below 500 mm, and in the Mkomazi and Pangani blocks of the Pare District and adjacent areas of the footland block.

The rate of cultivation is 6.0%, the population density 25 persons/km^2, and the gross agricultural acreage 1.27 ha/household, which respectively represent 0.8%, 0.4%, and 200% of the corresponding figures for the highland areas.

Approximately % of all of the smallholders in the region are settled in an extremely localized fashion in these areas, cultivating maize, beans, cotton, and other crops which are strongly drought resistant and making use of swampland grass for grazing.

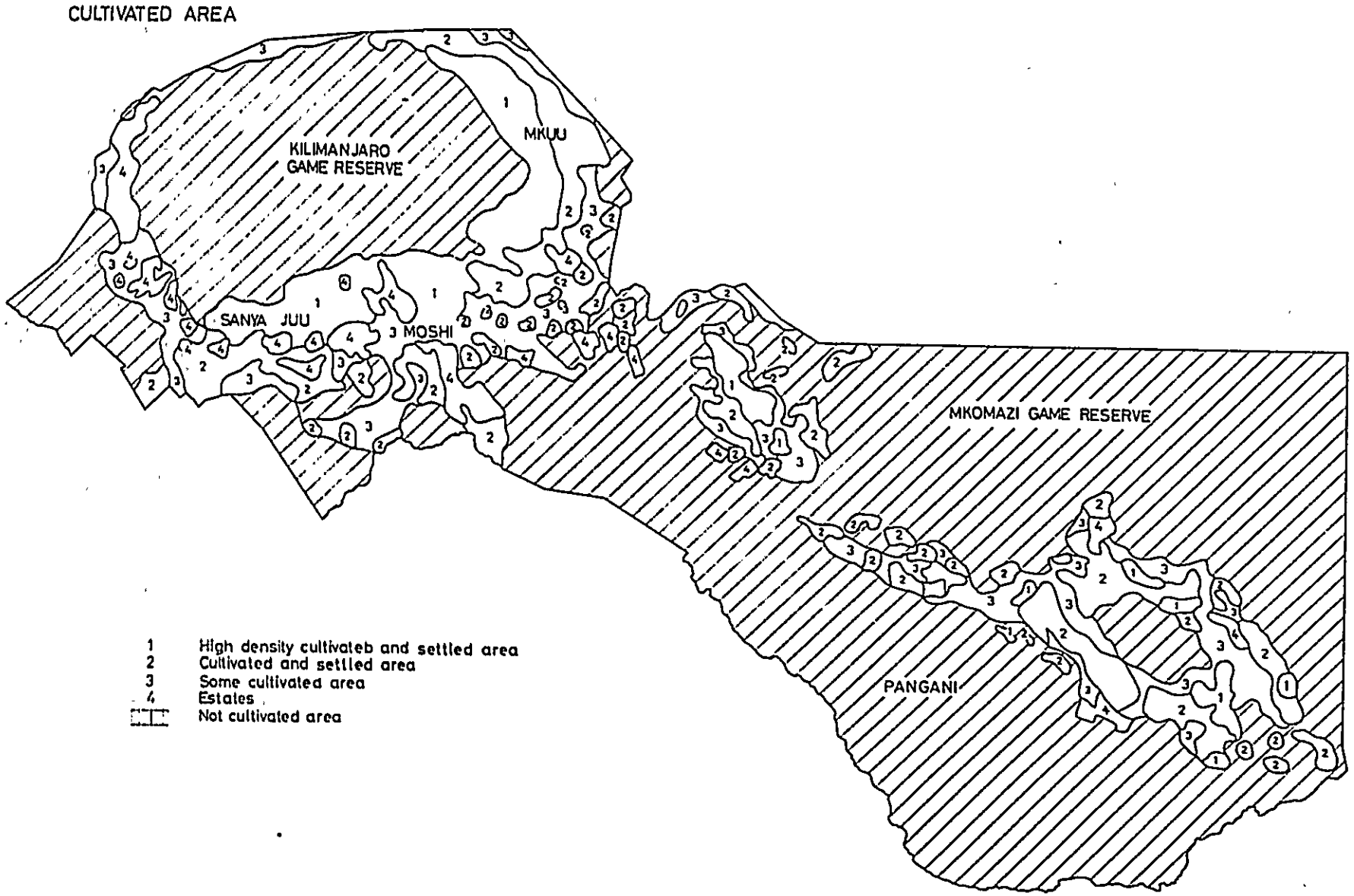
What is needed here in terms of land-use planning is the discovery of locations in these wide areas which are suitable for intensive cultivation because of relatively good water and soil conditions.

(3) Estates

There are 81 large agricultural estates in the region run either privately or by public corporations and covering a total areas of approximately 500 km^2, which represents 4% of the total area of the region and 15% of its existing cultivated area. They are located along the regional and trunk roads running between altitudes of 2,500 ft. and 4,000 ft. on the slopes of Mt. Kilimanjaro from Ol Molog in West Kilimanjaro, through lower Moshi, and on to Himo as well as along the Same road in the footland areas on the west side of the Para mountains.

The largest of these estates is the N.A.F.C.O. estate in West Kilimanjaro, which covers approximately 130 km^2 and is operated by a public corporation and in which the chief crop is wheat. Together with the Moshi estate run by the same entity, it accounts for 37% of the total area of agricultural estates in the region. The largest private estate is the T.C.P. sugar cane estate in lower Moshi, which covers 70 km^2.

A total of 47 nationalized farms in the Hai and Moshi Districts raise coffee, maize, and beans and together account for an area of 125 km^2. In addition, these are T.S.C. and private sisal farms, private wheat, jaggery, and pyrethrum estates, and estates run by old Ujamaa villages in which maize, beans, and other crops are grown.


CULTIVATED AREA
KILIMANJARO GAME RESERVE
MKUU
SANYA JUU
MOSHI
MKOMAZI GAME RESERVE
PANGANI
1 High density cultivateb and settled area
2 Cultivated and settled area
3 Some cultivated area
4 Estates
Not cultivated area

2.3 Reserved Area

(1) Kilimanjaro National Park

There are eight national parks in Tanzania, with a total area of approximately 32,600 km^2, of which the Kilimanjaro National Park is the fifth largest with an area of 756 km^2, or 5.7% of the total area of the Kilimanjaro Region, and extends upwards of approximately the 9,000 ft. line on the slopes of Mt. Kilimanjaro.

This national park, along with the neighboring Mt. Meru National Park, is a valuable asset in the northern Tanzanian tourism sphere and as such comes under the direct jurisdiction of the Ministry of Natural Resources and Tourism. The mountain reaches an altitude of 19,340 ft. at its highest peak, which is the highest point in Africa. A permanent glacier caps the upper portion of the park, and in the park there is complete protection of the terrain and of the primeval flora and wildlife.

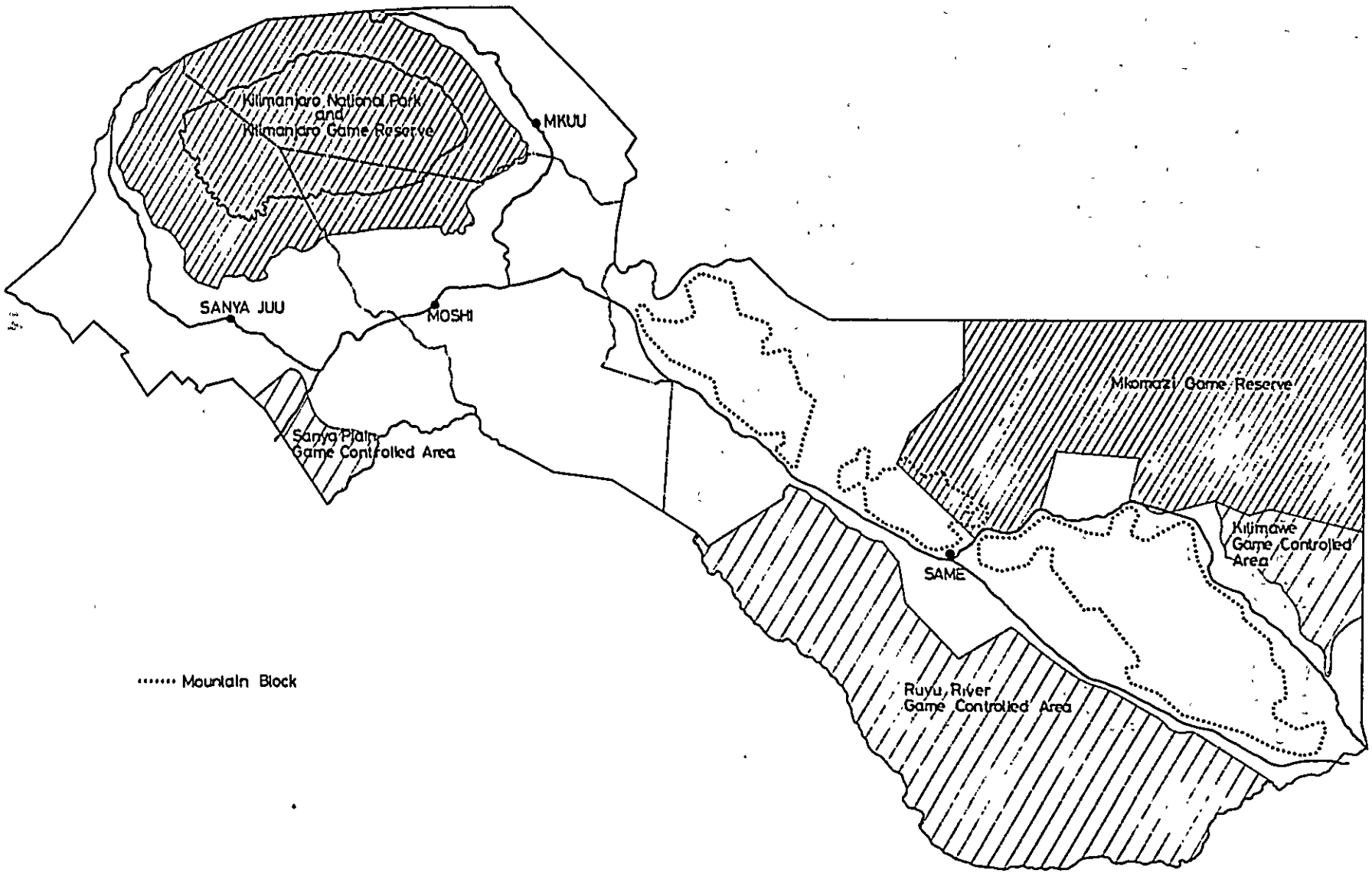
For the more than 4,000 visitors who climb the mountain each year, there are five ascent routes, eleven huts and shelters, and two hotels at Marungu, the main base camp. No settlement or other use of this area is allowed, except for the control activities of the park staff.

(2) Game Reserve and Game Control Areas

There are 17 game reserves in Tanzania with a total area of approximately 79,000 km^2, two of which are located in the Kilimanjaro Region: the Kilimanjaro Game Reserve (1,790 km^2) and the Mkomazi Game Reserve (1,940 km^2). Together, these two game reserves in the country (9%). They come under the jurisdiction of the Department of Game of the Ministry of Natural Resources--the former as an area for protection of mountain wildlife above the 6,000 ft. line on Mt. Kilimanjaro, and the latter as an area for the protection of savanna wildlife at altitudes below 3,000 ft. As in the case of the Kilimanjaro National Park, settlement and other land uses are not allowed in these areas.

There are also 39 game control areas nationwide, of which two are located entirely in the Kilimanjaro Region and two other partly in it. The first two are the Rau Forest Game Control Area, below Moshi Town (3.0 km^2) and the Kalimawe Game Control Area (320.0 km^2), in the Mkomazi R. valley, and the other two are the part of the game control area extending over the Sanya Plain and the Lelatema Mountains that covers the western corner of the lowland zone of the Kilimanjaro Region (175.0 km^2) and that part of the Ruvu R. Game Control Area in the Pangani R. valley which lies in the Pangani zone, again of the Kilimanjaro Region (2,270.0 km^2). Together, these four game control areas cover an area of 2,768.0 km^2 in the region, which represents 21 % of the total regional area.

NATIONAL PARK AND GAME RESERVE MAP



(3) Forest Reserves

There is great diversity in the region with respect to terrain and climatic conditions and hence also with respect to vegetation, the pattern of distribution of which basically follows altitude lines (see Natural Conservation Plan).

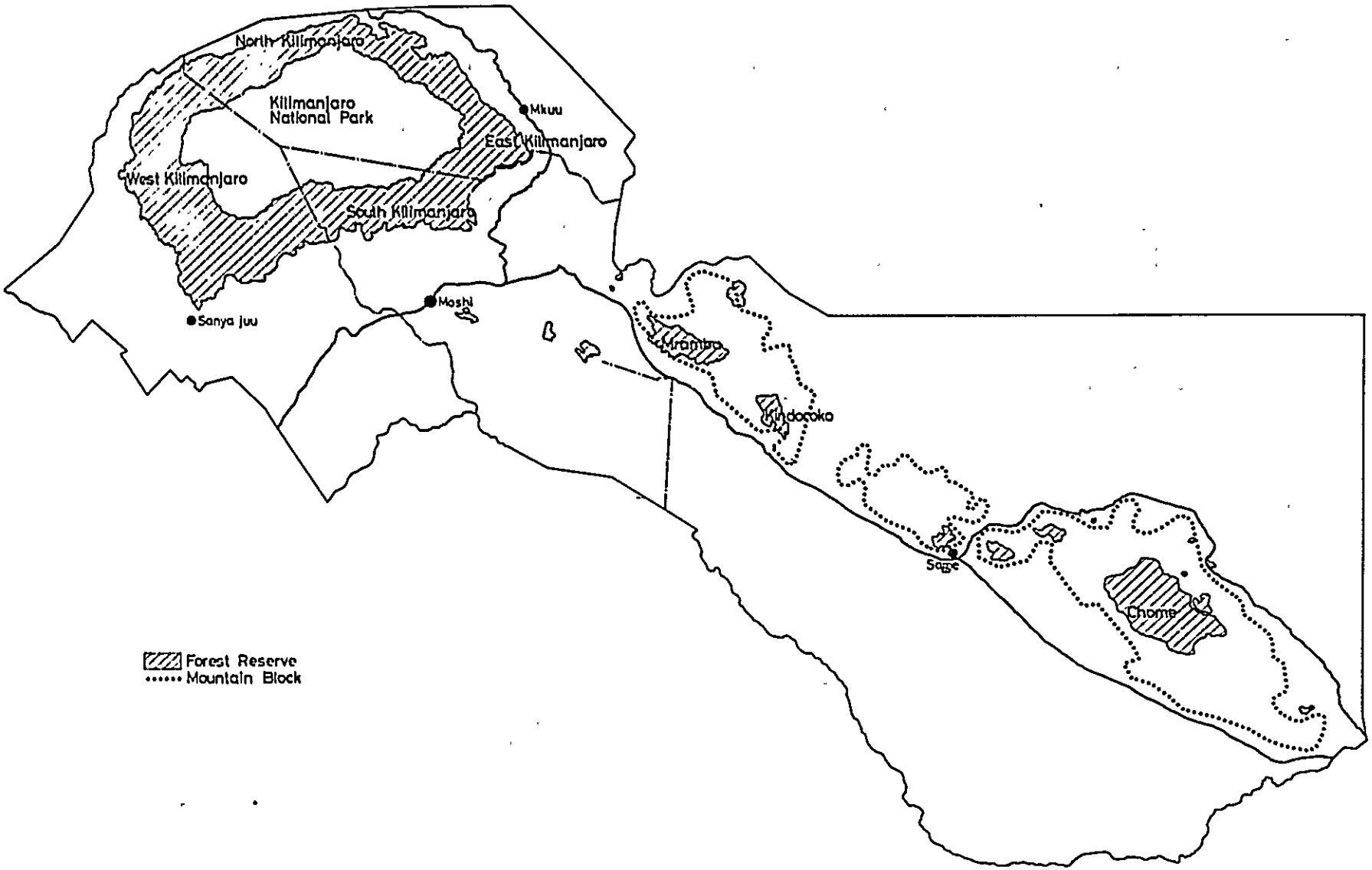
Forests, woodlands, thickets, and the like are distributed almost entirely between 6,000 ft. and 9,000 ft. on the slopes of Mt. Kilimanjaro and above 4,000 ft. in the Pare zone, their total area amounting to approximately 2,110.0 km^2, or 16 % of the regional total. Of this 1,256.9 km^2, 60 % has been designated as forest reserves for both natural conservation and forest production, the former consisting of such functions as nurturing of water resources and prevention of soil erosion and landslides.

At present there are 24 such forst reserves in the region covering 9.5% of the regional total, which is somewhat lower than the 14.5% that all forest reserves in Tanzania represent of the total national area.

Of these 24 forest reserves, which in all cover an area of 1,243.7 k or 99 % of the total area of the 24 reserves, government, and the other under that of the regional government.

In the region there is approximately 600 km^2 of unreserved forests, which are either privately owned or under the joint management of villagers and which mainly provide fuel wood.

FOREST RESERVE MAP



2.4 Land-use Blocks

(1) Purpose of Classification Into Land-use Blocks

For the purposes of land-use planning it is necessary to classify the land into land-use types as a preliminary step to determination of the specific kinds of land-use within each land-use type in the course of making adjustments between the different types. Accordingly, the land of the region will be roughly divided into land-use blocks according to differing natural and physical conditions which exert such an important influence on land-use planning, particularly on agricultural land-use planning.

(2) Two Mountain Areas in the Kilimanjaro Region

The Kilimanjaro Region can be divided into two parts: Mt. Kilimanjaro and its environs and the Pare Mountains area.

Near the center of the Mt. Kilimanjaro area is to be found Kibo's Uhuru Peak, which at 19,340 ft. is the highest point in the region. Going 20 km north or 40 km east, one reaches the border with Kenya, 50 km south lies the Pare District, and 50 km to the west the Kilimanjaro District borders on the Arusha Region. For 200 years now the Chagga people, a Bantu tribe, have been farming here.

The Mt. Kilimanjaro area, with 5,309.0 square kilometers and 672,700 people in 1975 represents 40.2% of the total area of the region and 77.8% of its population.

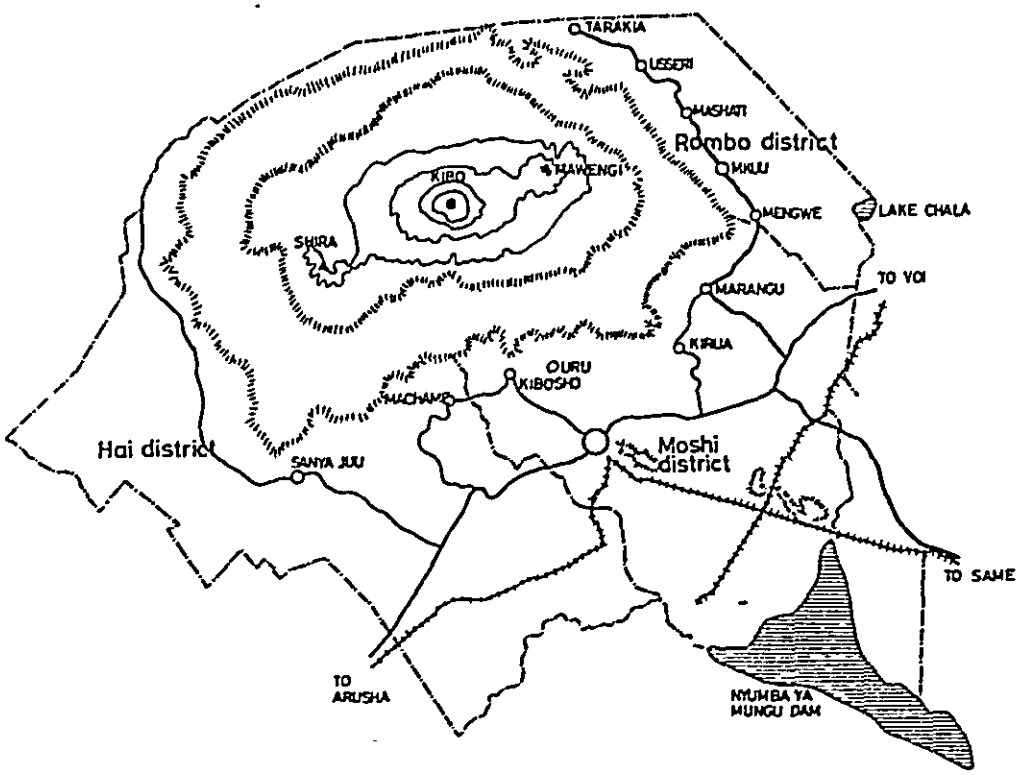
The Pare Mountains area has three separate mountain areas--the North Pare Mountains, of which Mt. Kindoroko (6,932 ft.) is the highest; the Central Pare Mountains, of which Mt. Umari (5,708 ft.) is the highest; and the South Pare Mountains, of which Mt. Shengena (8,080 ft.) is the highest--and extends beyond these mountain areas to the Kenya border to the east, the Tanga Region to the south, the Arusha Region to the west and the Mt. Kilimanjaro area to the north.

The Pare people, also a Bantu tribe, have been living here since about 1900, subsisting primarily on agriculture. Covering 7,900.0 km^2 and with 192,300 people, the Pare Mountains area represents 59.8% of the region's area and 22.2% of its population.

(3) Mt. Kilimanjaro Area Zones

The Mt. Kilimanjaro area has been divided into the five zones below on the basis of altitude, annual rainfall, terrain, soil, agricultural products, population density and other conditions:

- Alpine zone
- Forest zone
- Highland zone
- Upper lowland zone
- Lowland zone



(i) Alpine Zone

This is the part of Mt. Kilimanjaro (19,340 ft.) above the 9,000 ft. mark.

The belt between 9,000 ft. and 16,000 ft. is covered by alpine meadows with alpine and sub-alpine vegetation. Above that is an ice cap. The slope is steep, varying from 10.0 deg. to 25.0 de Since there is little precipitation, this zone is not a source of water for the lower slopes of the mountain. The ice cap, the most splendid in Africa, has a symbolic value and can be considered as a major tourism resource.

This zone ought to be designated as a primeval natural environment preservation area.

(ii) Forest Zone

This is the belt roughly between the altitudes of 6,000 ft. and 9,000 ft. on Mt. Kilimanjaro. It is presently a designated forest reserve area with both primeval and planted trees. Since its slopes are very steep, the range being 6-13 deg., and the air temperature is low, no coffee or bananas can be grown in this zone

The trees in this zone are not only potentially important in terms of the forestry industry but also important in terms of retention of water for agricultural and household use in the extensive highland, upper lowland and lowland areas of Mt. Kilimanjaro. The future land use of this zone will have to be such as to effect compatibility between forestry development and protection of primeval forests and between wildlife protection and protection of primeval forests since the zone is also a designated game reserve area.

(iii) Highland Zone

This is the belt roughly between the altitudes of 3,500 ft. and 6,000 ft. on the slopes of Mt. Kilimanjaro. The annual rainfall here averages 1,000 mm, the slope is gentle (3-8 deg.), and the soil, of the ferruginous tropical type, is deep, has a high clay content, and developed from basic rock and volcanic ash. Most of the region's coffee and bananas, both representative of the region's agriculture, are grown in this zone. Moreover, with an air temperature range of 15-25°C on the average, this zone has a very comfortable climate for habitation, which explains why 440,000 persons, mostly smallholders, or 50% of the population of the region, live here on an area of 706 km^2, or 5% of the area of the region, for a very high population density of 620 persons per square kilometer and a very high rate of cultivation of the land of 81%.

(iv) Upper Lowland Zone

This is the belt roughly between the altitudes of 2,500 ft. and 3,500 ft. on the slopes of Mt. Kilimanjaro, i.e., the belt below the highland zone. The annual rainfall here is more than the 500 mm minimum required for crop farming and in some places reaches 1,000 mm. The slope is gentle (1-3.5 deg.), and the soil is similar to that of the highland zone, except for a higher base content which restricts its use for agricultural purposes. The population density is 114 persons per square kilometer, and with a 45% rate of cultivation of the land, this zone is second only to the highland zone in terms of agricultural development to date. The main crops are maize, finger millet and beans grown by smallholders and coffee and sugar grown on estates which have made infrastructural investments for intensive agriculture. In addition, in West Kilimanjaro there is a government-operated dairy farm as well as several large wheat farms.

(v) Lowland Zone

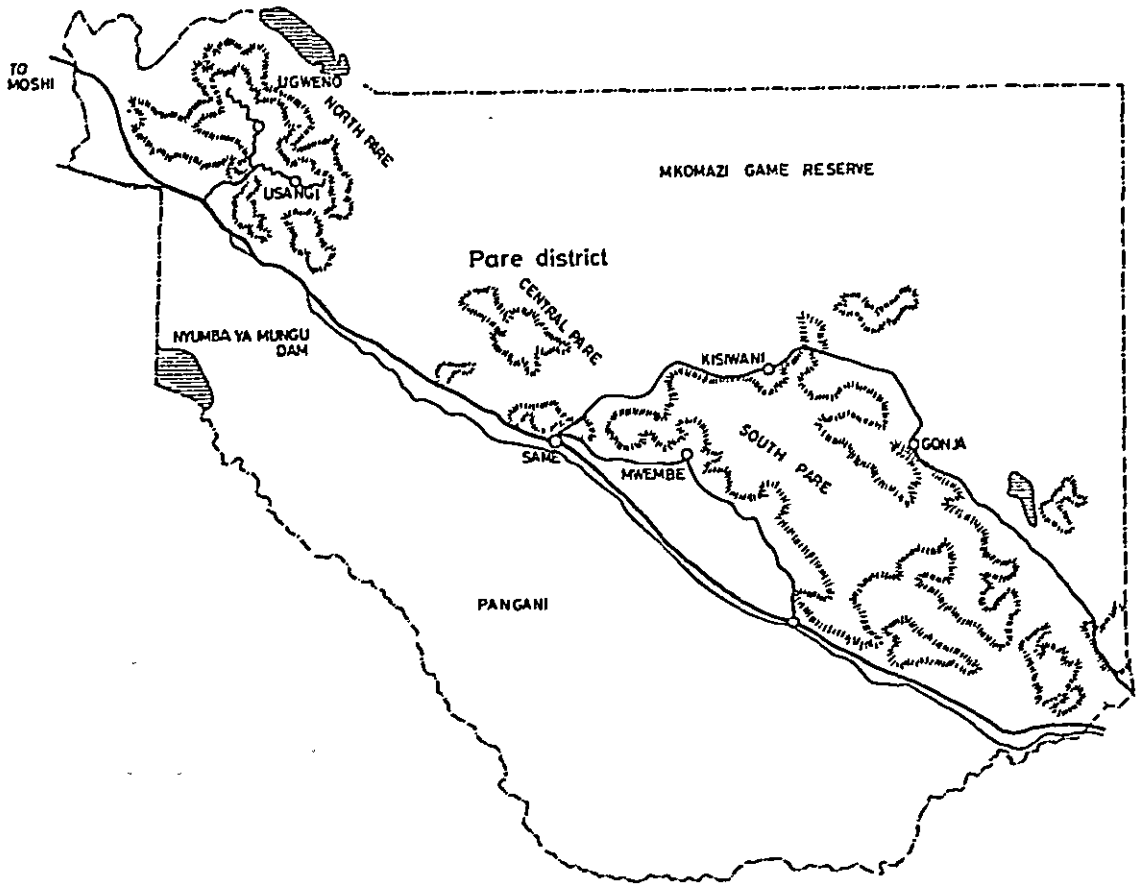
This zone comprises the semi-dry savanna grassland areas on the lower skirts of Mt. Kilimanjaro where the annual rainfall is under 500 mm and the mountain exerts hardly any ecological influence.

Although the soil is for the most part unsuitable for agricultural use and the air temperature is high, some places in this zone have good enough soil, water and other conditions to make it worthwhile to invest in the infrastructure necessary for land development.

(4) Pare Mountains Area Zones

The Pare Mountains area, too, has been divided into the three zones below on the basis of the same criteria as in the case of the Mt. Kilimanjaro area:

- Mountain zone
- Footland zone
- Lowland zone



(i) Pare Mountain Zone

This zone consists of the three mountain areas running in a northwest-southeast direction in the middle of the Pare District with an altitude range of 3,000-6,000 ft. for the most part and a peak altitude of 8,080 ft. The annual rainfall is 700-1,200 mm, and the slope is generally much steeper than in the highland zone of Mt. Kilimanjaro as well as much more irregular. As in the Kilimanjaro highland zone, the main crops are coffee and bananas. Owing, however, to the limitations set by the natural conditions, the population density is only 85 persons per square kilometer, or 14% of that of the Kilimanjaro highland, and the rate of land cultivation is only 8%, or about one-tenth that of the Kilimanjaro highland.

(ii) Pare Footland Zone

This zone consists of the almost flat areas at the foot of the Pare mountains, ranging in altitude from 2,500 ft. to about 3,500 ft. for the most part. The annual rainfall here is 500-700 mm, or above the agricultural minimum, and the slope is a very gentle 1-3.5 deg. The soils are primarily saline. The river water flowing down from the mountains and underground water are used for maize, sisal and banana production. The population density of 27.1 persons per square kilometer is slightly higher than that of the lowland zone of Mt. Kilimanjaro, while the rate of land cultivation, at 18%, is somewhat lower. In view of the natural conditions and other considerations, this zone is promising in terms of land development possibilities, particularly for agricultural uses.

(iii) Pare Lowland Zone

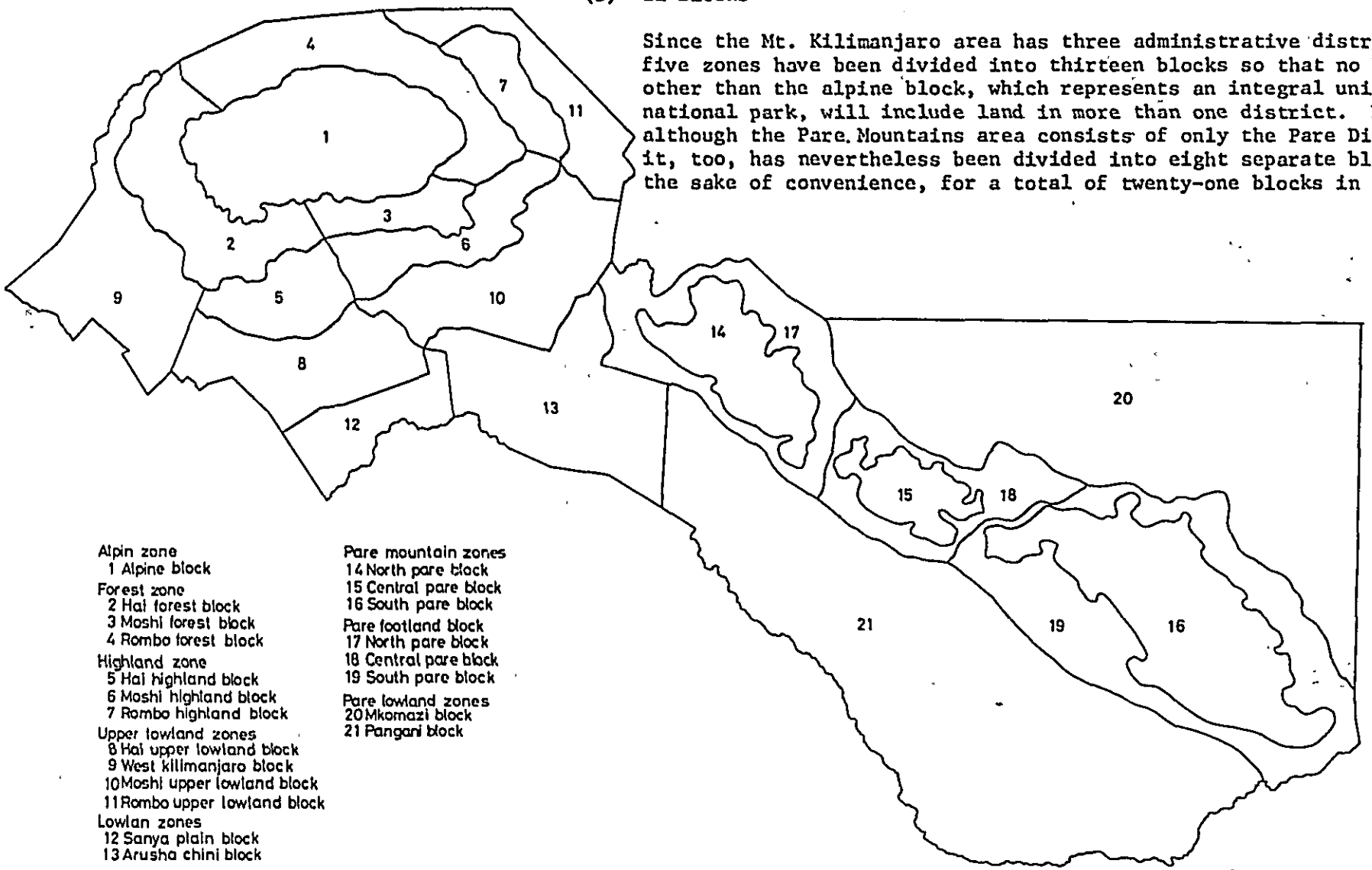
(a) Mkomazi

This area, a continuation of the Tsavo area in Kenya, is a savanna area with bushes and scattered trees and has a high wildlife potential in terms of giraffes, zebras, gazelles and otheranimals. In fact, 82% of it has already been designated as a game reserve. Although there are scattered agricultural villages in the vicinity of Lake Jipe, agricultural development of this zone is not very advisable in terms of wildlife conservation and preservation of the natural scenery.

(b) Pangani

This area is that part of the Masai steppe lying east of the Pangani River. Although there are some bush and scattered tree areas as well as some swampland, most of it consists of semi-aid areas. Presently about 91% of the zone has been designated as game control area. The altitude range is 2,500-3,000 ft., and the ground is almost entirely flat. With an annual rainfall of less than 500 mm, very little of the land is used for crop farming, although there are five irrigation project villages along the Pangani River in which bananas, maize and other crops are being grown. Furthermore, it should be worthwhile developing more land for agricultural use in localized areas where the productivity potential is high enough.

LAND-USE BLOCK MAP



Alpin zone
1 Alpine block
Forest zone
2 Hai forest block
3 Moshi forest block
4 Rombo forest block
Highland zone
5 Hai highland block
6 Moshi highland block
7 Rombo highland block
Upper lowland zones
8 Hai upper lowland block
9 West kilimanjaro block
10 Moshi upper lowland block
11 Rombo upper lowland block
Lowlan zones
12 Sanya plain block
13 Arusha chini block

Pare mountain zones
14 North pare block
15 Central pare block
16 South pare block
Pare footland block
17 North pare block
18 Central pare block
19 South pare block
Pare lowland zones
20 Mkomazi block
21 Pangani block

(5) 21 Blocks

Since the Mt. Kilimanjaro area has three administrative districts, its five zones have been divided into thirteen blocks so that no block - other than the alpine block, which represents an integral unit as a national park, will include land in more than one district. Moreover, although the Pare Mountains area consists of only the Pare District, it, too, has nevertheless been divided into eight separate blocks for the sake of convenience, for a total of twenty-one blocks in the regio

reakdown of the Area by Land-Use Blocks

	Total area (km^2)	Total pop. (persons)	Major landuse
Alpine Zone	756.0	-	National park
1. Alpine block	756.0	-	
Forest Zone	1,034.0	-	Forest and game reserve
2. Hai forest block	426.5	-	
3. Moshi forest block	192.6	-	
4. Rombo forest block	414.9	-	
Highland zone	706.8	440,060	High-density cultivation area
5. Hai highland block	216.6	100,260	
6. Moshi highland block	297.3	242.800	
7. Rombo highland block	192.9	97,000	
Upper lowland zone	1,859.7	212,560	Cultivation area
8. Hai upper lowland block	494.0	38,360	
9. West Kilimanjaro block	532.4	13,600	
10. Moshi upper lowland block	500.2	111,300	
11. Rombo upper lowland block	333.1	49,300	
Lowland Zone	972.5	18,000	Extensive cultivation and grazing
12. Sanya plain block	276.9	6,200	
13. Arusha Chini block	695.6	11,800	
Pare Mountain Zone	1,450.0	123,420	High-density cultivation area
14. North Pare block	358.8	49,000	
15. Central Pare block	196.2	9,920	
16. South Pare block	895.0	64,500	
Pare Footland Zone	1,891.2	51,180	Cultivation area
17. North Pare block	491.9	9,500	
18. Central Pare block	249.3	4,300	
19. South Pare block	1,150.0	37,380	
Pare Lowland zone	4,558.3	17,700	Game reserve some cultivation
20. Mkomazi block	2,071.8	1,600	
21. Pangani block	2,487.0	16,100	Extensive cultivation and grazing
Totals	13,209.0	865,000	

(unit:km2)	Total area	National park	Game reserve	Forest reserve	Dam & lake	Permanent swamp	Seasonal swamp	Other forest & thiket	Steep slope	Existing urban area	Land already under cultivati
Hai District	2,109.0	163.5	590.0	386.9	-	0.8	22.2	43.5	-	2.4	628.8
Alpine & forest	590.0	163.5	590.0	386.9	-	-	-	-	-	-	-
Highland	216.6	-	-	-	-	0.4	-	-	-	0.7	184.8
Upper lowland	494.0	-	-	-	-	0.4	8.4	36.3	-	1.7	182.4
West Kilimanjaro	532.4	-	-	-	-	-	11.5	7.2	-	-	216.0
Moshi District	1,764.1	78.4	271.0	172.0	153.0	5.5	1.2	-	-	30.1	557.8
Alpine & forest	271.0	78.4	271.0	158.8	-	-	-	-	-	-	-
Highland	297.3	-	-	-	-	-	-	-	-	-	227.8
Upper lowland	500.2	-	-	7.2	-	5.5	1.0	-	-	30.1	231.0
Arusha Chini	695.6	-	-	6.0	153.0	-	0.2	-	-	-	99.0
Rombo District	1,435.0	514.1	909.0	394.9	2.5	-	-	-	-	2.4	354.9
Alpine & forest	909.0	514.1	909.0	394.9	-	-	-	-	-	-	-
Highland	192.9	-	-	-	-	-	-	-	-	2.4	160.7
Upper lowland	333.1	-	-	-	2.5	-	-	-	-	-	194.2
Pare District	7,900.0	-	1,940.0	303.1	44.5	53.7	510.4	831.2	226.8	7.0	449.6
North Pare Mountain	358.8	-	-	0.7	-	-	-	123.7	43.5	-	28.4
North Pare Footland	491.9	-	-	79.4	12.0	29.0	53.7	-	-	-	85.2
Central Pare Mountain	196.2	-	18.8	7.4	-	-	0.9	77.2	83.5	2.9	9.5
Central Pare Footland	249.3	-	120.0	-	-	-	38.7	8.2	15.3	-	28.4
South Pare Mountain	895.0	-	-	215.0	-	-	-	519.3	69.2	-	56.6
South Pare Footland	1,150.0	-	69.8	-	14.0	24.7	110.0	66.0	13.7	4.1	170.5
Mkomazi	2,071.8	-	1,731.4	-	-	-	40.5	36.8	7.7	-	27.7
Pangani	2,487.0	-	-	0.6	18.5	-	266.6	-	-	-	43.3
Totals	13,209.0	756.0	3,730.0	1,256.9	200.0	60.0	533.8	874.7	232.9	41.9	1,990.5

3. AGRICULTURAL ACREAGE REQUIREMENTS

As population grows and demand for food increases, the proportion of farmland in the region's land-use pattern, in which agriculture is already predominant, will have to increase still further. The following is an estimate of what the demand for food crop acreage and cash crop acreage will be.

3.1 Crop Production Targets

The table below gives the production targets for 1985 and 1995 for different crops.

Food crops	Production in Average year (tons)	Production targets (tons) 1985 Annual rate of increase(%)	1995 Annual rate of increase(%)
1. Bananas	305,809	431,480 (3.5)	513,220 (1.75)
2. Maize	45,466	98,110 (8.0)	145,230 (4.0)
3. Beans	2,904	5,200 (6.0)	7,000 (3.0)
4. Finger millet	3,800	6,810 (6.0)	9,150 (3.0)
5. Rice	6,332	19,670 (12.0)	35,230 (6.0)
6. Wheat	9,359	20,200 (8.0)	29,900 (4.0)
7. Cassava	3,125	5,600 (6.0)	7,530 (3.0)
8. Irish potatos	8,830	19,050 (8.0)	28,200 (4.0)
9. Sweet potatos	3,965	7,100 (6.0)	9,540 (3.0)
10. Vegetables	3,034	5,430 (6.0)	7,300 (3.0)
11. Citrus fruits	83	210 (10.0)	340 (5.0)
12. Other food crops	321	500 (4.7)	650 (2.5)
Totals and averages	393,023	619,360 (4.7)	793,290 (2.5)
		(1975-85 158%)	(1975-95 202%)

Cash crops	Production in Average year (tons)	Production targets (tons) 1985 Annual rate of increase(%)		1995 Annual rate of increase(%)	
1. Coffee	20,518	30,370	(4.0)	37,020	(2.0)
2. Cotton	1,196	3,100	(10.0)	5,050	(5.0)
3. Sugar	56,296	100,800	(2.0)	135,500	(1.0)
4. Sisal	6,986	8,510	(6.0)	9,400	(3.0)
5. Seed beans	770	1,250	(5.0)	1,600	(2.5)
6. Pyrethrum	95	250	(10.0)	410	(5.0)
7. Cardamon	19	50	(10.0)	80	(5.0)
8. Other cash crops	1,978	3,320	((5.4)	4,350	(2.7)
Totals and averages	87,858	147,650	(5.4)	193,410	(2.7)
		(1975-85	168%)	(1975-95	220%)

Remarks: (i) See the agricultural Plan for production targets up to 1985.

(ii) In determining the production targets for 1995, a rate of increase only half that of up to 1985 has been assumed for the period 1985-1995 on the basis of population projections, economic targets, the amount of land available, and other considerations.

(iii) "Other crops" refers to chiefly fruits in the case of food crops and jaggery, sunflower seeds, and castor.

3.2 Yield Targets

The table below gives the target yields for each crop (kg/ha) for 1985 and 1995 as set on the basis of actual yields in the period 1966-1975.

	Yield average year (kg/ha)	Target yields 1985 Annual rate of increase(%)	1995 Annual rate of increase(%)
Food crops			
1. Bananas	8,968	8,968 (-)	8,968 (-)
2. Maize	992	1,270 (2.5)	1,438 (1.25)
3. Beans	264	430 (5.0)	550 (2.5)
4. Finger millet	644	644 (-)	644 (-)
5. Rice	1,809	2,947 (5.0)	3,722 (2.5)
6. Wheat	1,337	1,337 (-)	1,337 (-)
7. Cassava	2,332	3,800 (5.0)	4,864 (2.5)
8. Irish potatos	3,532	5,753 (5.0)	7,364 (2.5)
9. Sweet potatos	2,478	3,170 (2.5)	3,589 (1.25)
10. Vegetables	1,896	3,088 (5.0)	3,953 (2.5)
11. Citrus fruits	1,112	1,181 (5.0)	1,512 (2.5)
12. Other food crops	2,034	2,600 (2.5)	3,020 (1.5)
Totals and averages	27,398	35,188 (2.5)	40,961 (1.5)
		(1975-85 128%)	(1975-95 150%)
Cash crops			
1. Coffee	725	928 (2.5)	1,051 (1.25)
2. Cotton	287	467 (5.0)	598 (2.5)
3. Sugar	7,948	7,948 (-)	7,948 (-)
4. Sisal	1,136	1,136 (-)	1,136 (-)
5. Seed beans	810	1,037 (2.5)	1,174 (1.25)
6. Pyrethrum	301	385 (2.5)	436 (1.25)
7. Cardamon	180	293 (5.0)	375 (2.5)
8. Other cash crops	1,130	1,210 (5.5)	1,260 (3.6)
Totals and averages	12,517	13,404 (5.5)	13,978 (3.6)
		(1975-85 107%)	(1975-95 112%)

Remarks: (i) These yield targets have been set so as to be compatible with the rates of increase in production indicated in 3.1 above and the rate of increase in demand for farmland as a result of population growth.

(ii) Different annual rates of increase have been assumed for different crops as follows on the basis of the yields in the period 1966-1975 (see Agricultural Plan).

	Food crops	Cash crops
Crops the yields of which can be expected to increase annually by 5.0% up to 1985 and 2.5% thereafter	Beans, Rice Cassava Irish potatos Vegetables Citrus fruits	Cotton Cardamon
Crops the yields of which can be expected to increase annually by 2.5% up to 1985 and 1.25% thereafter	Maize Sweet potatos	Coffee Seed beans Pyrethrum
Crops the yields of which cannot be expected to increase very much at all	Bananas Finger millet Wheat	Sugar Sisal

3.3 Agricultural Acreage Requirements

(1) Net Agricultural Acreage Requirements

The following table gives the net agricultural acreage requirements for 1985 and 1995 as determined by the crop production targets set in 3.1 and the yield targets set in 3.2 above.

		Net agricultural acreage requirements (km^2)	
		1985	1995
Food crops	Net agricultural acreage, 1975 (km^2)	Annual rate of increase, 1975-1985 (%)	Annual rate of increase, 1985-1995 (%)
1. Bananas	341.0	481.1 (3.5)	572.3 (5.3)
2. Maize	458.3	772.5 (5.4)	1,009.9 (8.2)
3. Beans	110.0	120.9 (1.0)	127.3 (1.5)
4. Finger millet	59.0	105.7 (6.0)	142.1 (9.2)
5. Rice	35.0	66.7 (6.7)	94.7(10.5)
6. Wheat	70.0	151.1 (8.0)	223.6(12.3)
7. Cassava	13.4	14.7 (1.0)	15.5 (1.5)
8. Irish potatos	25.0	33.1 (2.8)	38.3 (4.4)
9. Sweet potatos	16.0	22.4 (3.4)	26.6 (5.2)
10. Vegetables	16.0	17.6 (1.0)	18.5 (1.5)
11. Citrus fruits	0.8	1.8 (8.5)	2.2(10.6)
12. Other food crops	1.8	1.9 (4.5)	2.2 (2.0)
Totals and averages	1,146.3	1,789.5 (4.5)	2,273.2 (7.1)
		(1975-85 156%)	(1975-85 198%)
Cash crops			
1. Coffee	283.0	327.3 (1.5)	352.2 (2.2)
2. Cotton	41.7	66.4 (4.7)	84.4 (7.3)
3. Sugar	70.8	126.8 (6.0)	170.5 (9.2)
4. Sisal	61.5	74.9 (2.0)	82.7 (3.0)
5. Seed beans	9.5	12.1 (2.4)	13.6 (3.7)
6. Pyrethrum	3.2	6.5 (7.4)	9.4(11.4)
7. Cardamon	1.1	1.7 (4.5)	2.1 (6.7)
8. Other cash crops	10.8	11.3 (0.5)	11.6 (0.7)
Totals and averages	481.6	627.0 (2.7)	726.5 (4.2)
		(1975-85 130%)	(1975-95 151%)

As the table indicates, the total net agricultural acreage requirement will be approximately 2,420 km^2 in 1985, or 1.5 times that in 1975, for an increase of about 790 km^2, and approximately 3,000 km^2 in 1995, or 1.8 times that in 1975, for an increase of about 1,370 km^2.

(2) Gross Agricultural Acreage Requirements

The table below gives the gross agricultural acreage requirements for 1985 and 1995, "gross agricultural acreage" signifying not only the acreage actually under cultivation (net acreage) but also the area taken up by rural housing, roads, irrigation channels, permanent pastures, etc.

	1975	1985	(increase over 1975)	1995	(increase over 1985)
Net agricultural acreage (km^2)	1,627.9	2,416.5	(788.6)	2,999.7	(583.2)
Gross agricultural acreage (km^2)	1,990.5	2,954.8	(964.3)	3,667.9	(713.1)
Gross/Net ratio	1.22	1.22		1.22	

4. LAND AVAILABILITY

Here we shall consider how much new land is available for cultivation to meet the need for more agricultural acreage that the growing rural population will give rise to as well as the degree of facility with which such new land can be developed.

4.1 Procedure for Identification of New Land With Development Potential for Cultivation

Step-1 Selection of cultivable land in each block on the basis of a preliminary land evaluation, the following areas having been classified as absolutely uncultivable:

i - Land with a slope of 30 deg. or more (1:50,000 map used)
ii - Forest reserve areas (1:50,000 map used)
iii - Game reserve areas (1:250,000 map used)
iv - Lake and dam areas
v - Urban areas
vi - Other areas the development of which is not recommended from the standpoint of conservation of the natural enviroment (see Conservation Values map of Nature Conservation Plan).

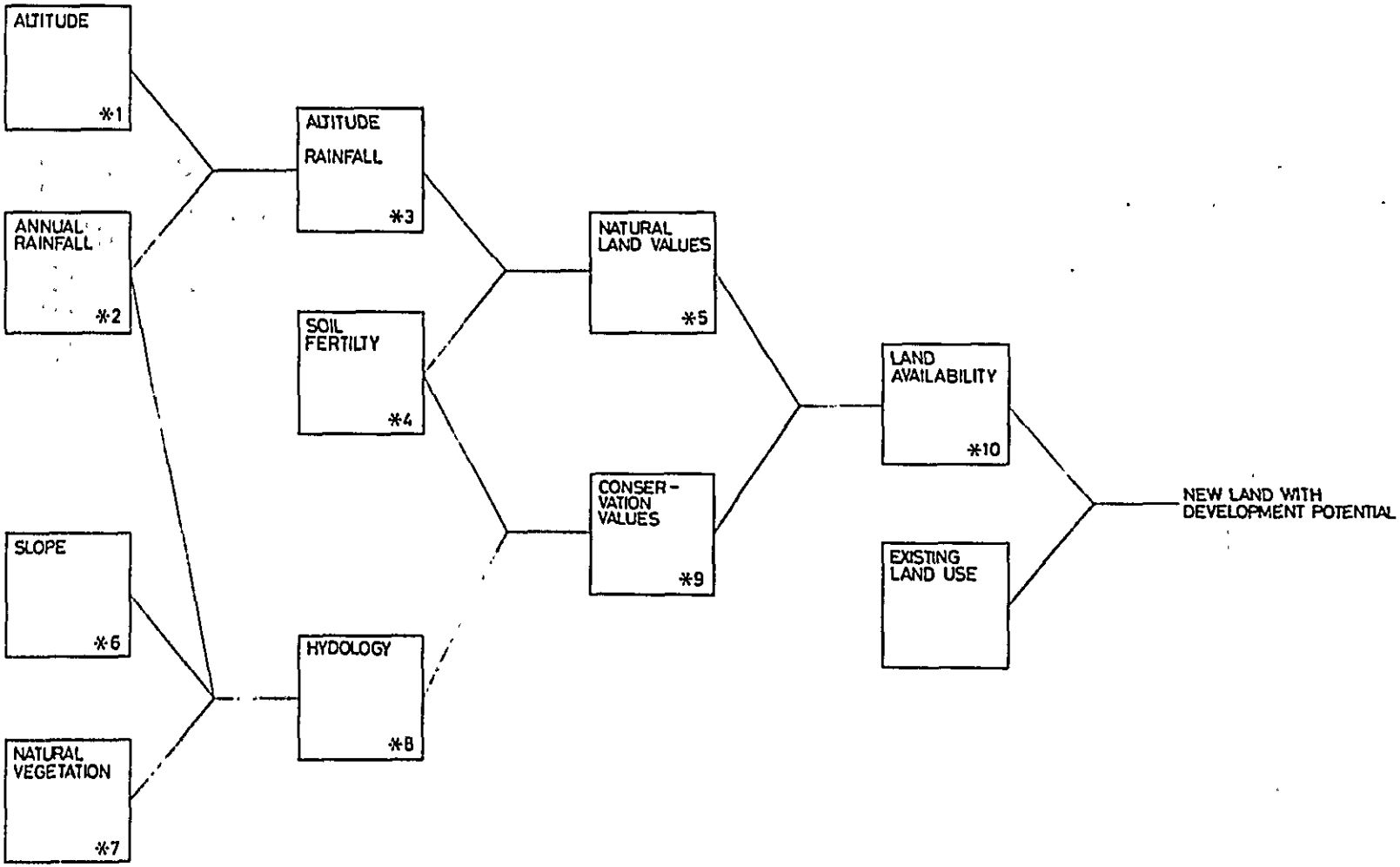
The following table gives the amount of uncultivable land in each district as definded above.

(km^2)	Hai	Moshi	Rombo	Pare	Region
i.	-	-	-	140.8	140.8
ii.	386.9	172.0	394.9	303.1	1,256.9
iii.	203.1*	112.2*	534.1*	1,940.0	2,789.4*
iv.	-	153.0	2.5	44.5	200.0
v.**	7.2	36.0	6.3	14.3	63.8
vi.	-	3.2	-	93.9	97.1
Total:	597.2	476.4	937.8	2,536.6	4,548.0

* These areas are not excluded forest reserve areas

** Urban areas are included future urbanized area

IDENTIFICATION OF NEW LAND WITH DEVELOPMENT POTENTIAL (For cultivation)



Step-2 Classification of the cultivable land identified in Sept-1 into eleven grades of cultivation suitability by the following procedure.

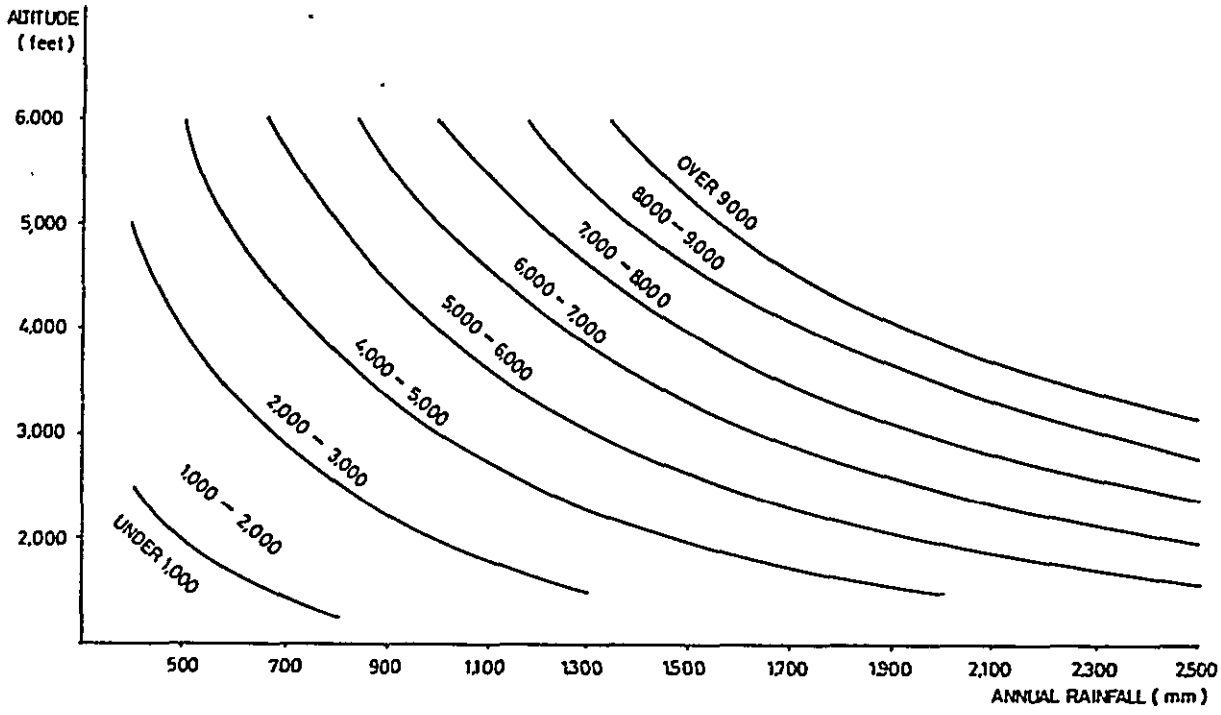
Explanation of Diagram

*1. See Elevation map.

*2. See Annual Rainfall map.

*3. Classification of the cultivable land into 10 evaluation grades on the basis of the following formula:

$$\text{Altitute (ft.)} \times \frac{\text{annual rainfall (mm)}}{1{,}000} = A$$



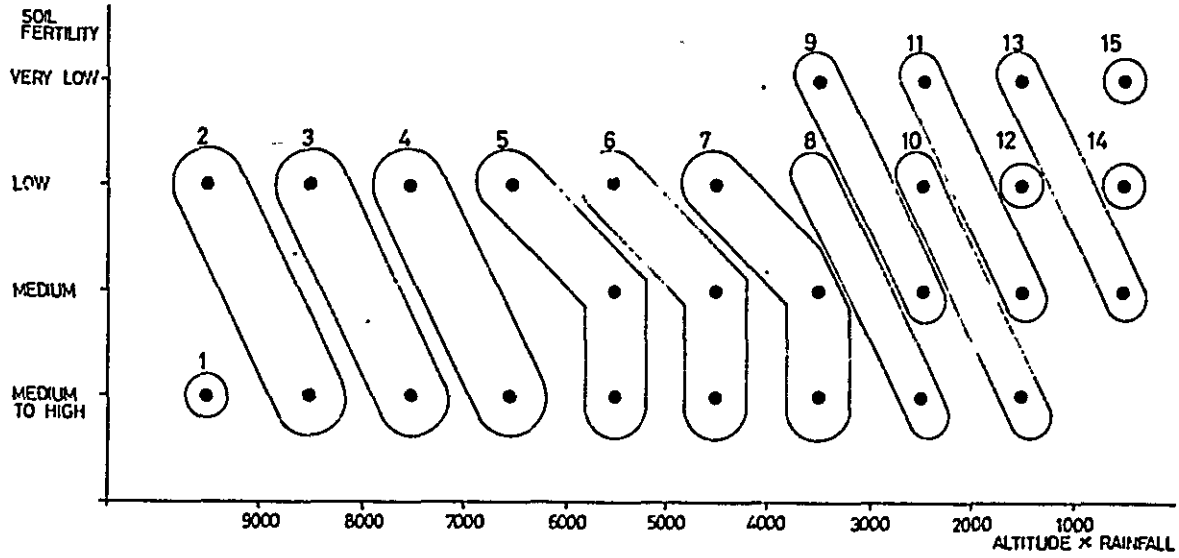
(see Altitude x Rainfall map).

*4. Classification of the cultivable land into 4 grades according to soil fertility:

	Fertility	Soil types
1)	MEDIUM TO HIGH FERTILITY.....	Ea, Fa
2)	MEDIUM FERTILITY.....	Da, Db, Fb, Ib, Ic, Jc, Je
3)	LOW FERTILITY.....	Ba, Bb, Ca, Fc, Gb, Ha, Ia Ja, Jc
4)	UNSUITABLE FOR AGRICULTURAL USE...	Aa, Ab, Jb

See "SOIL TYPES" map.

*5. Classification of the cultivable land into the following 15 categories
(see Natural Land Values map):



Natural land values
1 - 4 Very Good
5 - 6 Good
7 - 8 Fair
9 -10 Poor
11 Bad
12-15 Very Bad

*6. See Slope Map

*7. See Natural Vegetation Map

*8. See Hydrology Map

*9. See Conservation Values Map

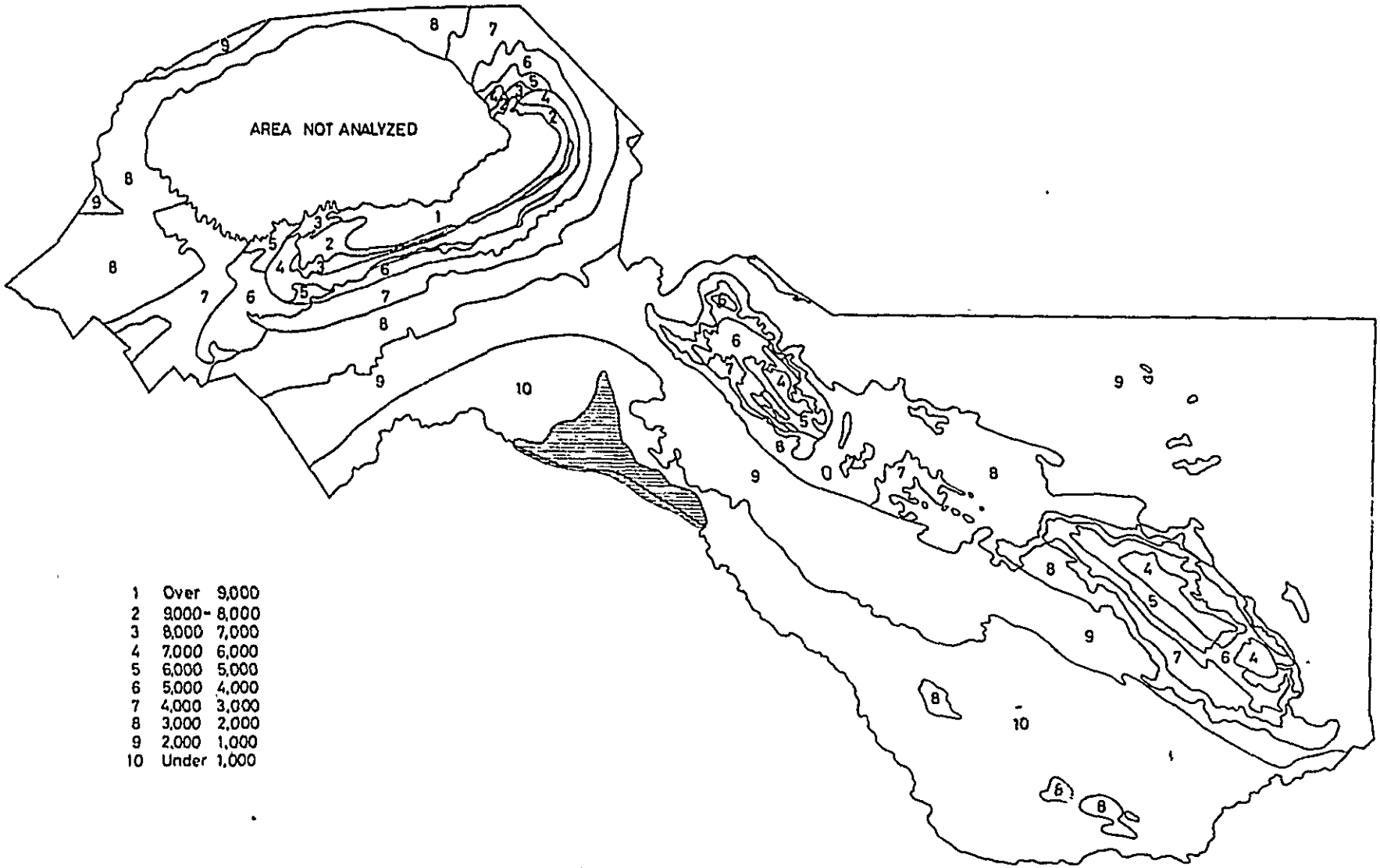
*10. Final classification of the cultivable land into the following 11 categories:

CONSERVATION VALUES	NATURAL LAND VALUES					
	VERY GOOD	GOOD	FAIR	POOR	BAD	VERY BAD
C	CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5	CATEGORY 6
B	CATEGORY 1'	CATEGORY 2'	CATEGORY 3'	CATEGORY 4'	CATEGORY 5'	

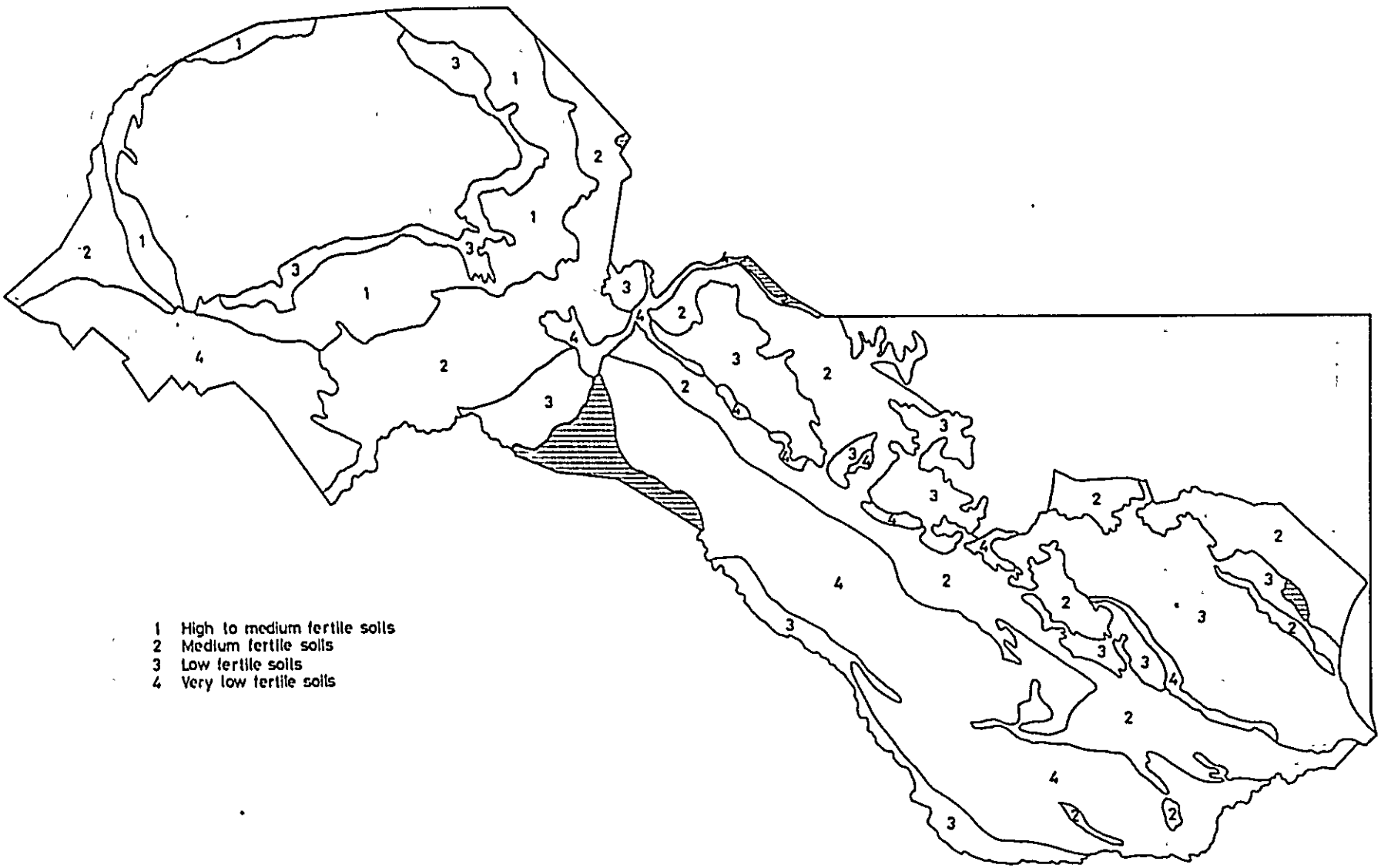
Step-3 Subtraction of the land already under cultivation from each of the above 11 categories in each block to arrive at the amount of new land with development potential for cultivation in each as indicated in the following table.

*1. See land-use 1975

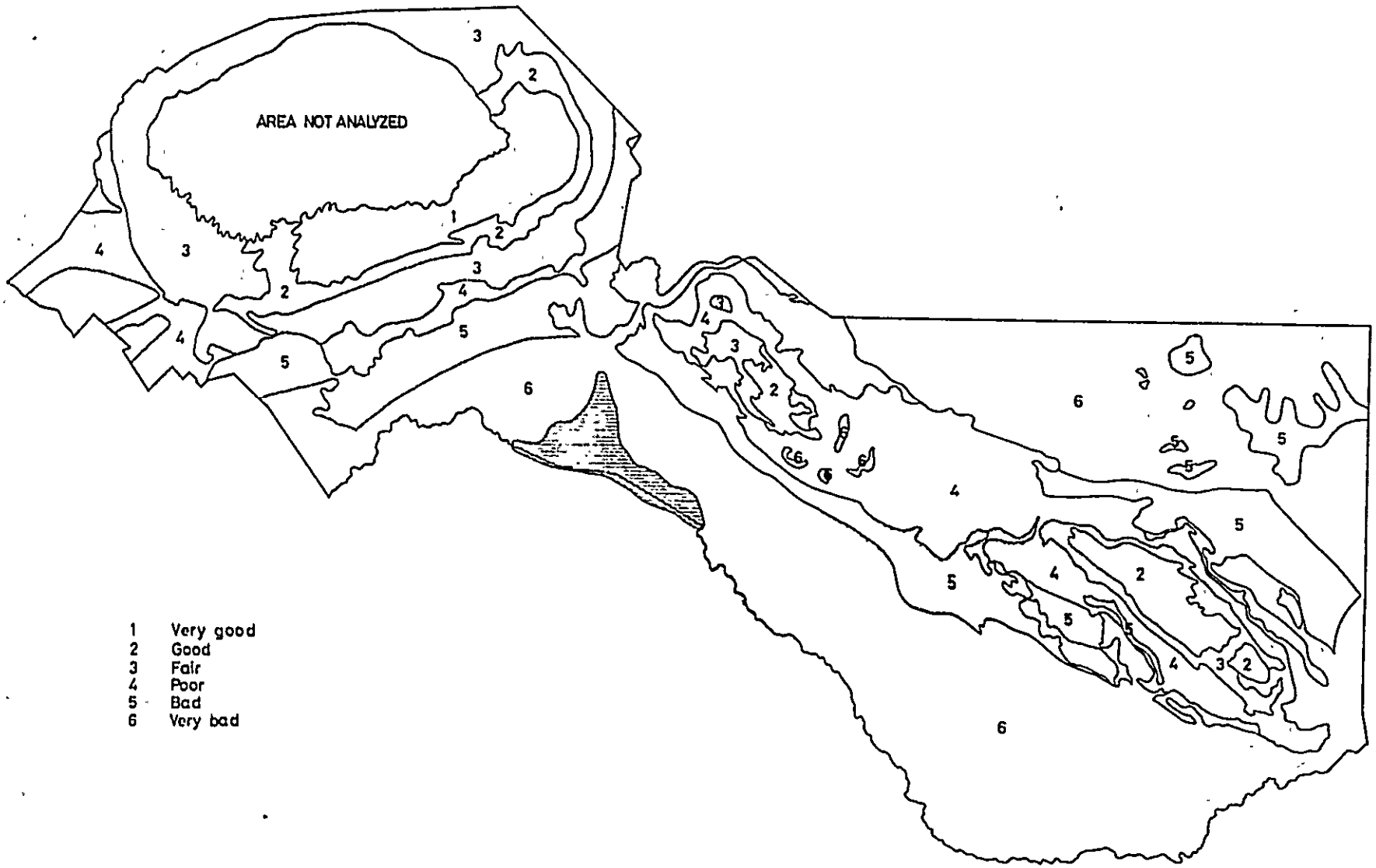
ALTITUDE × RAINFALL MAP

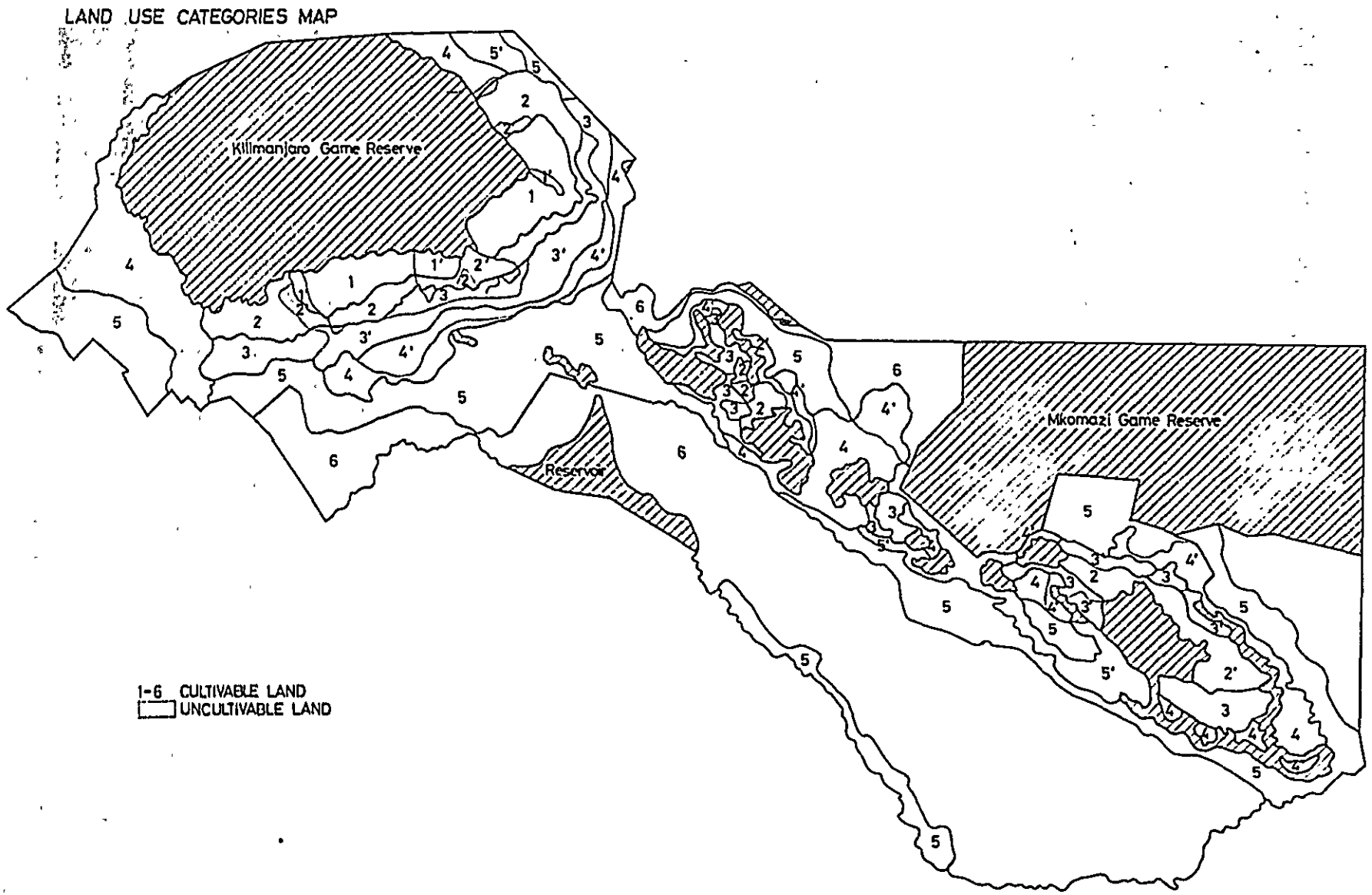


'SOIL' FERTILITY MAP

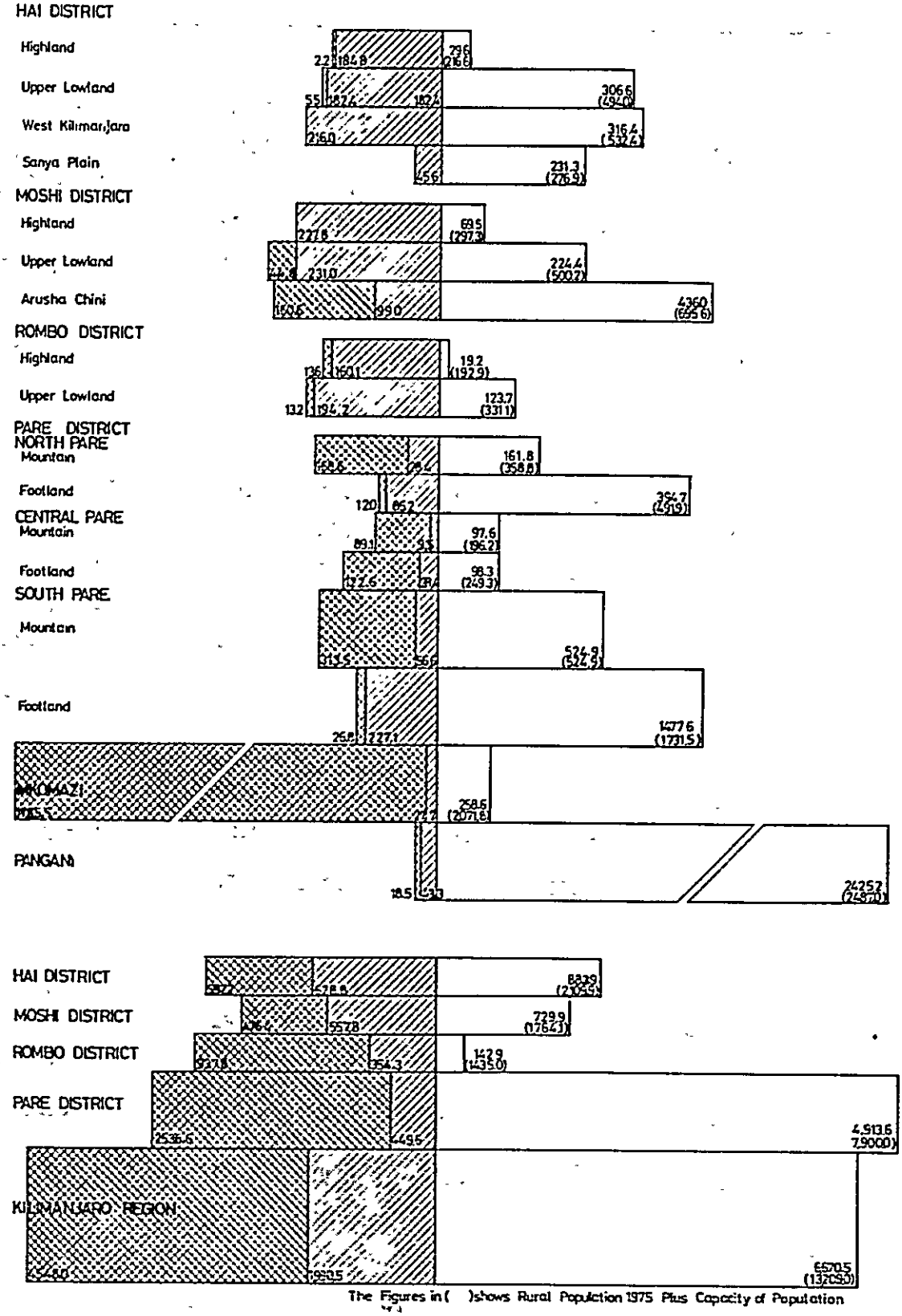


NATURAL LAND VALUES




LAND USE CATEGORIES MAP
Kilimanjaro Game Reserve
Mkomazi Game Reserve
Reservoir
1-6 CULTIVABLE LAND
UNCULTIVABLE LAND

NEW LAND WITH DEVEROPMENT POTENTIAL FOR CULTIVATION



The Figures in ( )shows Rural Population 1975 Plus Capacity of Population

Hai District (Unit:km²)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
Highland					
Category - 1	33.7	29.2	22.2	7.0	4.5
Category - 1'	11.4	9.5	9.5	-	1.9
Category - 2	99.7	84.2	74.0	10.7	15.0
Category - 2'	21.0	17.5	17.5	-	3.5
Category - 3	40.9	37.2	18.5	18.7	3.7
Category - 3'	7.7	6.7	4.9	1.8	1.0
Subtotals	214.4	184.8	146.6	38.2	29.6
Upper Lowland					
Category - 3	57.5	29.7	9.5	20.2	27.8
Category - 3'	39.3	38.1	0.4	37.7	1.2
Category - 4	98.8	29.2	23.9	5.3	69.9
Category - 4'	40.8	19.9	7.1	12.8	20.9
Category - 5	192.4	49.2	49.2	-	143.2
Category - 6	60.2	15.6	14.9	1.3	44.6
Subtotals	489.0	182.4	105.1	77.3	306.6
West Kilimanjaro					
Category - 4	314.4	203.4	6.8	196.6	111.0
Category - 5	218.0	12.6	12.6	-	205.4
Subtotals	532.4	216.0	19.4	196.6	316.4
Lowland					
Category - 4	1.8	0.3	0.3	-	1.5
Category - 5	29.6	4.6	4.6	-	25.0
Category - 6	245.5	40.7	37.3	3.4	204.8
Subtotals	276.9	45.6	42.2	3.4	231.3
Totals	1,512.7	628.8	313.3	315.5	883.9

Moshi District (Unit:km²)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
Highland					
Category - 1	151.1	114.9	104.7	10.2	36.2
Category - 1'	23.2	17.1	17.1	-	6.1
Category - 2	97.1	76.6	59.1	17.5	20.5
Category - 2'	25.9	19.2	19.2	-	6.7
Subtotals	297.3	227.8	200.1	27.7	69.5
Upper Lowland					
Category - 1	10.5	4.2	4.2	-	6.3
Category - 1'	1.1	0.4	0.4	-	0.7
Category - 2	16.1	6.5	6.5	-	9.6
Category - 2'	1.1	0.4	0.4	-	0.7
Category - 3	43.5	26.0	11.9	14.1	17.5
Category - 3'	111.4	61.3	34.1	27.2	50.1
Category - 4	30.5	16.9	9.2	7.7	13.6
Category - 4'	61.2	31.9	20.0	11.9	29.3
Category - 5	180.0	83.4	65.7	17.7	96.6
Subtotals	455.4	231.0	152.4	78.6	224.4
Arusha Chin					
Category - 4	8.7	2.9		2.9	5.8
Category - 5	137.5	79.0	0.2	78.8	58.5
Category - 6	388.8	17.1	1.4	15.7	371.7
Subtotals	535.0	99.0	1.6	97.4	436.0
Totals	1,287.7	557.8	354.1	203.7	729.9

Rombo District (Unit:km^2)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
Highland					
Category - 1	56.6	50.4	50.4	-	6.2
Category - 1'	1.3	1.2	1.2	-	0.1
Category - 2	40.4	36.1	36.1	-	4.3
Category - 2'	18.5	16.5	16.5	-	2.0
Category - 4	35.7	31.9	31.9	-	3.8
Category - 4'	3.0	2.7	2.7	-	0.3
Category - 5'	23.8	21.3	21.3	-	2.5
Subtotals	179.3	160.1	160.1	-	19.2
Upper Lowland					
Category - 1	4.8	2.9	2.9	-	1.9
Category - 1'	2.7	1.6	1.6	-	1.1
Category - 2	9.8	6.0	6.0	-	3.8
Category - 2'	59.1	36.1	36.1	-	23.0
Category - 3	48.1	29.4	29.4	-	18.7
Category - 3'	32.0	19.5	19.5	-	12.5
Category - 4	96.0	58.7	58.7	-	37.3
Category - 4'	3.6	2.2	2.2	-	1.4
Category - 5	34.8	21.3	21.3	-	13.5
Category - 5'	27.0	16.5	16.5	-	10.5
Subtotals	317.9	194.2	194.2	-	123.7
Totals	497.2	354.3	354.3	-	142.9

Pare District (Unit: km^2)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
North Pare Mountain					
Category - 2	32.5	4.9	4.9	-	27.6
Category - 2'	4.9	0.7	0.7	-	4.2
Category - 3	61.1	9.2	9.2	-	51.9
Category - 3'	41.1	6.1	6.1	-	35.0
Category - 4'	50.6	7.5	7.5	-	43.1
Subtotals	190.2	28.4	28.4	-	161.8
North Pare Footland					
Category - 4	81.3	15.2	15.2	-	66.1
Category - 4'	5.1	1.1	1.1	-	4.0
Category - 5	326.0	56.4	43.2	13.2	269.6
Category - 6	67.5	12.5	12.5	-	55.0
Subtotals	479.9	85.2	72.0	13.2	394.7
North Pare Totals	670.1	113.6	100.4	13.2	556.5
Central Pare Mountain					
Category - 3	11.6	0.8	0.8	-	10.8
Category - 3'	29.8	2.5	2.5	-	27.3
Category - 4	37.7	3.3	3.3	-	34.4
Category - 5'	28.0	2.9	2.9	-	25.1
Subtotals	107.1	9.5	9.5	-	97.6
Central Pare Footland					
Category - 4	62.2	13.9	13.9	-	48.3
Category - 5	49.4	11.1	11.1	-	38.3
Category - 5'	15.1	3.4	3.4	-	11.7
Subtotals	126.7	28.4	28.4	-	98.3
Central Pare Totals	235.8	37.9	37.9	-	195.9

Pare District-2 (Unit:km^2)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
South Pare Mountain					
Category - 2	128.0	12.5	12.5	-	115.5
Category - 2'	62.3	6.1	6.1	-	56.2
Category - 3	133.0	12.9	12.9	-	120.1
Category - 3'	116.1	11.3	11.3	-	104.8
Category - 4	43.4	4.2	4.2	-	39.2
Category - 4'	58.8	5.7	5.7	-	53.1
Category - 5	19.6	1.9	1.9	-	17.7
Category - 5'	20.3	2.0	2.0	-	18.3
Subtotals	581.5	56.6	56.6	-	524.9
South Pare Footland					
Category - 4	86.5	13.3	10.9	2.4	73.2
Category - 4'	24.2	3.8	2.9	0.9	20.4
Category - 5	684.1	104.4	79.9	24.5	579.7
Category - 5'	90.2	13.9	12.7	1.2	76.3
Category - 6	238.2	35.1	35.1	-	203.1
Subtotals	1,123.2	170.5	141.5	29.0	952.7
South Pare Totals	1,704.7	227.1	198.1	29.0	1,477.6

Pare District-3 (Unit:km^2)

	Total area	Land already under cultivation			New land with development potential
		Total	Smallholdings	Estates	
Mkomazi					
Category - 4'	51.3	4.8	4.8	-	46.3
Category - 5'	43.1	5.2	3.9	1.3	37.9
Category - 6	191.9	17.7	17.7	-	174.2
Subtotals	286.3	27.7	26.4	1.3	258.6
Pangani					
Category - 5	221.1	2.7	2.7	-	218.4
Category - 6	2,247.4	40.6	27.3	13.3	2,206.8
Subtotals	2,468.5	43.3	30.0	13.3	2,425.2
Mkomazi and Pangani Totals	2,754.8	71.0	56.4	14.6	2,683.8
Pare Totals	5,363.4	449.6	392.8	56.8	4,913.8
Regional Totals	8,661.0	1,990.5	1,414.3	576.0	6,670.5

Remarks:

"Land already under cultivation" refers to gross agricultural acreage, which is 15% greater than net agricultural acreage in the case of estates and 25% greater in the case of smallholdings.

The figures for the amount of land in the estates are as measured on the Land Use, 1975 map on a scale of 1 : 250,000 and adjusted on the basis of the figures in the

The figures for the amount of land already under cultivation by smallholders have been calculated on the basis of the rates of cultivation for the different blocks, the total area in each of the 11 categories in each block, and the amount of estate land in each of these categories in each block.

4.2 Carrying Capacity of New Land With Development Potential for Cultivation

Let us now consider the number of smallholder households that can be accommodated by the amount of new land with development potential for cultivation determined above. The procedure is as follows.

(1) The number of additional smallholder households (N) can be determined as follows:

$$N = \frac{T - E}{A}$$

where T is the total amount of new land with development potential for cultivation purposes, E that amount of the total that will be used for estates, and A the average amount of land that each smallholder should cultivate.

(2) Determination of what part of the total amount of new land with development potential for cultivation purposes should be used for estates.

The presently existing estates can be classifies into four types according to their location:

(i) Those that should be relocated since they are in areas where highly intensive cultivation and housing should be given priority, i.e, areas where use by smallholders is most advantageous.

(ii) Those that are in the same kind of areas as those in (i) above but for which it is considered sufficient only to keep them from expanding.

(iii) Those should be expanded, but only by 50% since increase of cultivation by smallholders is also considered advisable.

(iv) Those for which it is considered advisable to expand their area by 100% since development of new land for smallholder use is not considered as advisable as development for estate use.

(3) The amount of land to be cultivated by each smallholder has been set as follows for the different land classifications, primarily on the basis of natural conditions as explained in 3.1:

Land classification	1	1'	2	2'	3	3'	4	4'	5	5'
Amount of land to be cultivated by each smallholder in terms of the amount in classification 1	a	1.5a	2.0a	2.5a	3.0a	3.5a	4.0a	4.5a	5.0a	5.5a

The value of "a" has been set as 0.3 ha a 0.4 ha on the basis of the actual amount of land each smallholder now cultivates in classification 1 areas.

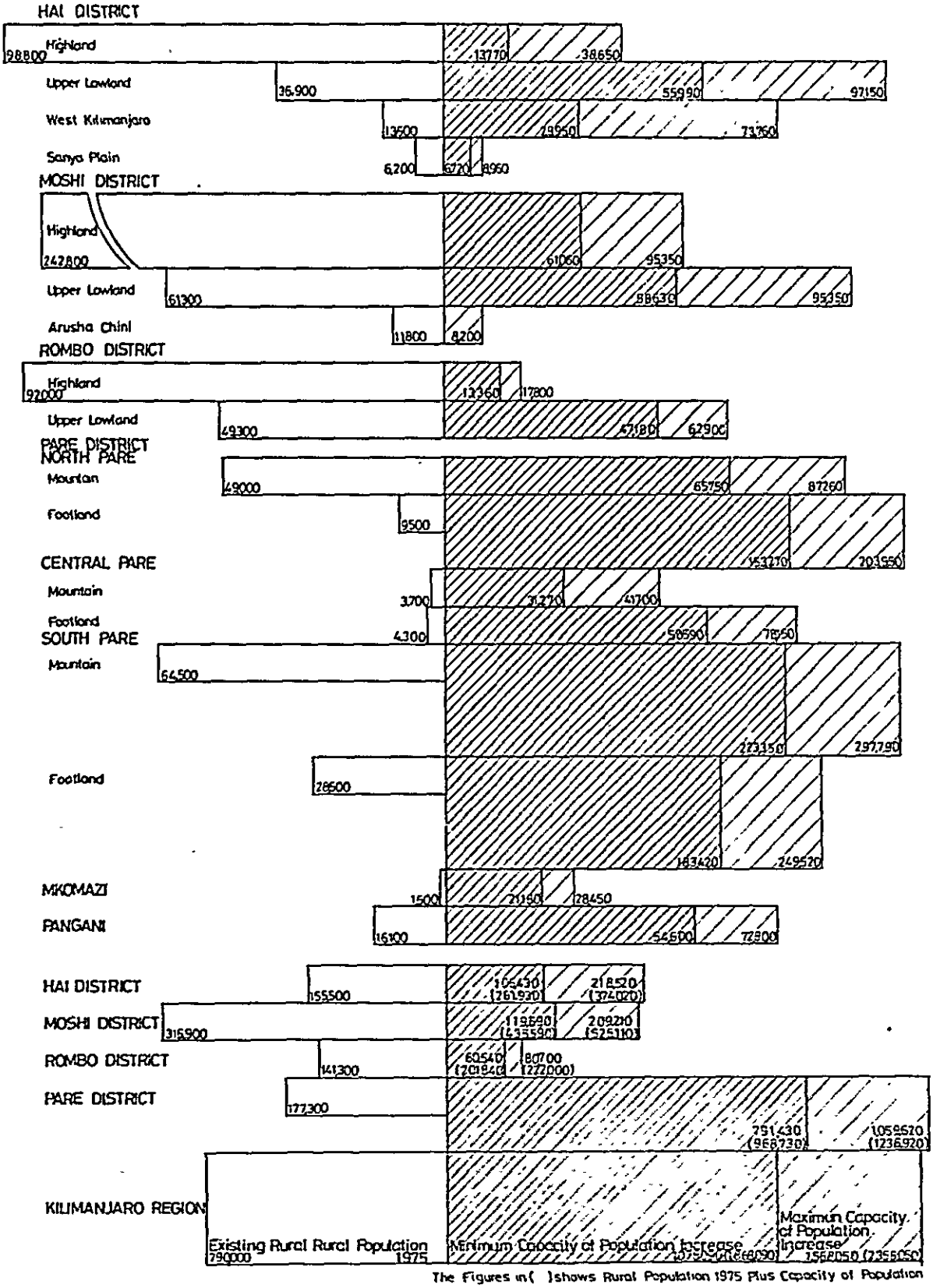
The table below recaps the conditions set in (2) and (3) above, on the basis of which the number of smallholders that can be accommodated by the new land, the amount of land that each will be able to cultivate, and the range of area that can be devoted to estate use can be calculated.

Land classification	Maximum ha/household	Number of additional smallholders: Estate	ha/household	Minimum Estate
Category - 1	0.3	Relocation	0.4	Maintaining status quo.
Category - 1'	0.45		0.6	
Category - 2	0.6	Maintaining status quo.	0.8	Expansion by 50%
Category - 2'	0.75		1.0	
Category - 3	0.9		1.2	
Category - 3'	1.05		1.4	
Category - 4	1.2		1.6	
Category - 4'	1.35	Expansion by 50%	1.8	Expansion by 100%
Category - 5	1.5		2.0	
Category - 5'	1.65		2.2	
Category - 6	Not use	Maintaining status quo.	Not use	Maintaining status quo.

The Range of Carring Capacity

	1975 population	Max. pop. no. of increase	Estimation no. of totals	Coeffi-cient of increase	Min. pop. no. of increase	Estimation no. of totals	Coeffi-cient of increase
Hai							
Highland	98,800	38,650	137,450	1.39	13,770	112,570	1.14
Upper lowland	36,900	97,150	134,050	3.63	55,990	92,890	2.52
West Kilimanjaro	13,600	73,760	87,360	6.42	29,950	43,550	3.20
Sanya Plain	6,200	8,960	15,160	2.45	6,720	12,920	2.08
Subtotals	155,500	218,520	374,020	2.41	106,430	261,930	1.68
Moshi							
Highland	242,800	105,660	348,460	1.44	61,060	303,860	1.25
Upper lowland	61,300	95,350	156,650	2.56	58,630	119,930	1.96
Arusha Chini	11,800	8,200	20,000	1.69	-	11,800	1.00
Subtotals	315,900	209,210	525,110	1.66	119,690	435,590	1.38
Rombo							
Highland	92,000	17,800	109,800	1.19	13,360	105,360	1.15
Upper lowland	49,300	62,900	112,200	2.28	47,180	96,480	1.96
Subtotals	141,300	80,700	222,000	1.57	60,540	201,840	1.43
Kilimanjaro 3 districts totals	612,700	508,430	1,121,130	1.83	286,660	899,360	1.47
Pare							
North Pare mountain	49,000	87,260	136,260	2.78	65,750	114,750	2.34
North Pare footland	9,500	203,950	213,450	22.47	153,270	162,770	17.13
Central Pare mountain	3,700	41,700	45,400	12.27	31,270	34,970	9.45
Central Pare footland	4,300	78,150	82,450	19.17	58,590	62,890	14.63
South Pare mountain	64,500	297,790	362,290	5.62	223,350	287,850	4.46
South Pare footland	28,600	249,520	278,120	9.72	183,420	212,020	7.41
Mkomazi	1,600	28,450	30,050	18.78	21,180	22,780	14.24
Pangani	16,100	72,800	88,900	5.52	54,600	70,700	4.39
Subtotals	177,300	1,059,620	1,236,920	6.98	791,430	968,730	5.46
Kilimanjaro regional total	790,000	1,568,050	2,358,050	2.98	1,078,090	1,868,090	2.36

CARRYING CAPACITY OF NEWLAND WITH DEVELOPMENT POTENTIAL FOR CULTIVATION



The Figures in( )shows Rural Population 1975 Plus Capacity of Population

Breakdown of The Area and Population By Land-use Blocks

Hai District

	New Land with dev'nt potential (km^2)		Maximum Area (km^2)	Pop.		Minimum Area (km^2)	Pop.
Highland							
Category - 1	4.5	(-7.0)	11.5	19,170		4.5	5,630
Category - 1'	1.9		1.9	2,110		1.9	1,580
Category - 2	15.0		15.0	12,500	(7.3)	7.7	4,810
Category - 2'	3.5		3.5	2,330		3.5	1,750
Category - 3	3.7		3.7	2,060	(3.7)	-	-
Category - 3'	1.0		1.0	480	(1.0)	-	-
Subtotals	29.6	(-7.0)	36.6	38,650	(12.0)	17.6	13,770
Upper Lowland							
Category - 3	27.8		27.8	15,440	(27.8)	-	
Category - 3'	1.2		1.2	570	(1.2)	-	
Category - 4	69.9	(2.6)	67.3	28,040	(5.3)	64.6	17,940
Category - 4'	20.9	(6.4)	14.5	5,370	(12.8)	8.1	2,250
Category - 5	143.2		143.2	47,730		143.2	35,800
Category - 6	44.6		-			-	
Subtotals	306.6	(9.0)	254.0	97,150	(47.1)	215.9	55,990
West Kilimanjaro							
Category - 4	111.0	(98.3)	12.7	5,290	(111.0)	-	
Category - 5	205.4		205.4	68,470	(85.6)	119.8	29,950
Subtotals	316.4	(98.3)	218.1	73,760	(196.6)	119.8	29,950
Sanya Plain							
Category - 4	1.5		1.5	630		1.5	470
Category - 5	25.0		25.0	8,330		25.0	6,250
Category - 6	204.8		-			-	
Subtotals	231.3		36.5	8,960		36.5	6,720
Totals	883.9	(143.3)	545.2	218,520	(255.7)	389.8	106,430

Moshi District

	New land with dev'nt potential (km^2)	Maximum Area (km^2)	Pop.	Minimum Area (km^2)	Pop.
Highland					
Category - 1	36.2 (-10.2)	46.4	77,330	36.2	45,250
Category - 1'	6.1	6.1	6,780	6.1	5,080
Category - 2	20.5	20.5	17,080	(8.7) 11.8	7,380
Category - 2'	6.7	6.7	4,470	6.7	3,350
Subtotals	69.5 (-10.2)	79.7	105,660	(8.7) 60.8	61,060
Upper Lowland					
Category - 1	6.3	6.3	10,500	6.3	7,880
Category - 1'	0.7	0.7	780	0.7	58-
Category - 2	9.6	9.6	8,000	9.6	6,000
Category - 2'	0.7	0.7	470	0.7	350
Category - 3	17.5	17.5	9,720	(7.0) 10.5	4,380
Category - 3'	50.1	50.1	23,860	(13.6) 36.5	13,040
Category - 4	13.6 (3.8)	9.8	4,080	(7.7) 5.9	1,840
Category - 4'	29.3 (5.9)	23.4	8,670	(11.9) 17.4	4,830
Category - 5	96.6 (8.8)	87.8	29,270	(17.7) 78.9	19,730
Subtotals	224.4 (18.5)	205.9	95,350	(57.9) 166.5	58,630
Arusha Chini					
Category - 4	5.8 (1.4)	4.4	1,830	(5.8) -	-
Category - 5	58.5 (39.4)	19.1	6,370	(58.5) -	-
Category - 6	371.7	-	-	-	-
Subtotals	436.0 (40.8)	23.5	8,200	(64.3) -	-
Totals	729.9 (49.1)	309.1	209,210	(130.9) 227.3	119,690

Rombo District

	New land with dev'nt potential(km^2)	Maximum Area(km^2)	Pop.	Minimum Area(km^2)	Pop.
Highland					
Category - 1	6.2	6.2	10,330	6.2	7,750
Category - 1'	0.1	0.1	110	0.1	80
Category - 2	4.3	4.3	3,580	4.3	2,690
Category - 2'	2.0	2.0	1,330	2.0	1,000
Category - 4	3.8	3.8	1,580	3.8	1,190
Category - 4'	0.3	0.3	110	0.3	80
Category - 5'	2.5	2.5	760	2.5	570
Subtotals	19.2	19.2	17,800	19.2	13,360
Upper Lowland					
Category - 1	1.9	1.9	3,170	1.9	2,380
Category - 1'	1.1	1.1	1,220	1.1	920
Category - 2	3.8	3.8	3,170	3.8	2,380
Category - 2'	23.0	23.0	15,330	23.0	11,500
Category - 3	18.7	18.7	10,390	18.7	7,790
Category - 3'	12.5	12.5	5,950	12.5	4,460
Category - 4	37.3	37.3	15,540	37.3	11,660
Category - 4'	1.4	1.4	520	1.4	390
Category - 5	13.5	13.5	4,500	13.5	3,380
Category - 5'	10.5	10.5	3,180	10.5	2,390
Subtotals	123.7	123.7	62,900	123.7	47,180
Totals	142.9	142.9	80,800	142.9	60,540

Pare District - 1

	New land with dev'nt potential(km^2)	Maximum Area(km^2)	Pop.	Minimum Area(km^2)	Pop.
North Mountain					
Category - 2	27.6	27.6	23,000	27.6	17,250
Category - 2'	4.2	4.2	2,800	4.2	2,100
Category - 3	51.9	51.9	28,830	51.9	21,620
Category - 3'	35.0	35.0	16,670	35.0	12,500
Category - 4'	43.1	43.1	15,960	43.1	11,970
Subtotals	161.8	161.8	87,260	161.8	65,750
North Footland					
Category - 4	66.1	66.1	27,540	66.1	20,660
Category - 4'	4.0	4.0	1,480	4.0	1,110
Category - 5	269.6	263.0	87,670	256.4	65,750
Category - 6	55.0	-	-	-	-
Subtotals	394.7	333.1	116,690	326.5	87,520
North Pare Totals	556.5	494.9	203,950	448.3	153,270
Central Mountain					
Category - 3	10.8	10.8	6,000	10.8	4,500
Category - 3'	27.3	27.3	13,000	27.3	9,750
Category - 4	34.4	34.4	14,330	34.4	10,750
Category - 5'	25.1	25.1	8,370	25.1	6,270
Subtotals	97.6	97.6	41,700	97.6	31,270
Central Footland					
Category - 4	48.3	48.3	20,130	48.3	15,090
Category - 5	38.3	38.3	12,770	38.3	9,570
Category - 5'	11.7	11.7	3,550	11.7	2,660
Subtotals	98.3	98.3	36,450	98.3	27,320
Central Pare Totals	195.9	195.9	78,150	195.9	58,590

Pare District - 2

	New land with dev'nt potential (km^2)	Maximum Area (km^2)		Pop.	Minimum Area (km^2)		Pop.
South Mountain							
Category - 2	115.5	115.5		96,250	115.5		72,190
Category - 2'	56.2	56.2		37,470	56.2		28,100
Category - 3	120.1	120.1		66,720	120.1		50,040
Category - 3'	104.8	104.8		49,900	104.8		37,430
Category - 4	39.2	39.2		16,330	39.2		12,250
Category - 4'	53.1	53.1		19,670	53.1		14,750
Category - 5	17.7	17.7		5,900	17.7		4,430
Category - 5'	18.3	18.3		5,500	18.3		4,160
Subtotals	524.9	524.9		297,790	524.9		223,350
South Footland							
Category - 4	73.2	(1.2)	72.0	30,000	(2.4)	70.8	22,130
Category - 4'	20.4	(12.2)	20.0	7,410	(0.9)	19.5	5,420
Category - 5	579.7	(0.6)	567.5	189,170	(24.5)	555.2	138,800
Category - 5'	76.3		75.7	22,940	(1.2)	75.1	17,070
Category - 6	203.1		-			-	17,070
Subtotals	952.7	(14.0)	735.2	249,520	(29.0)	720.6	183,420
South Pare Totals	1,477.6		1,260.1 (14.0)	547,310		1,245.5 (29.0)	406,770

Pare District - 3

	New land with dev'nt potential (km^2)	Maximum Area (km^2)	Pop.	Minimum Area (km^2)	Pop.
Mkomazi					
Category - 4'	46.3	46.3	17,150	46.3	12,860
Category - 5'	37.9	37.	11,300	36.6	8,320
Category - 6	174.2	-	-	-	-
Subtotals	258.6	83.6	28,450	82.9	21,180
Pangani					
Category - 5	218.4	218.4	72,800	218.4	54,600
Category - 6	2,206.8	-		-	
Subtotals	2,425.2	218.4	72,800	218.4	54,600
Mkomazi and Pangani totals	2,683.8	302.0	101,250	301.3	75,780
Pare District totals	4,913.8	2,252.9	930,660	2,191.0	694,410
Regional totals	6,670.5	3,250.1	143,990	2,951.0	981,070

Remarks: (1) The figures in parentheses represent the increase in the area of estates.

(2) The average smallholder family has been assumed to consist of five persons.

(3) Estate employees are not included in the population figures.

5. PLANNING GOALS AND TARGETS

(i) To set the basic long-term direction of future land use in the region in harmony with the land-use targets set in this report and taking into consideration both the need to protect the natural environment and the requirement for land-use efficiency.

(ii) To indicate in outline the land development types, the amount of land development, and the necessary land-development-related facilities that should be achieved by the target year 1995 on the basis of the above-mentioned basic direction for land-use development.

(iii) To make suggestions regarding promotional, control, and other systems and measures, including land development surveys, for achievement of these land development targets.

5.1 Use Zoning Plan

(1) General

This plan for the zoning of the land of the region by different use types aims at eventually achieving a rational land-use pattern by gradually leading the agricultural production environment in a more healthy direction on the basis of comprehensive consideration of the natural, socioeconomic, and other relevant conditions of the region.

It provides for three major use types:

(i) Agricultural Zones

The areas in the region earmarked for use for production purposes are classified into 5 different zones, each with its own use level, the chief criteria being soil productivity and the present degree of provision of agricultural infrastructure.

(ii) Conservation Zones

The areas in the region which are to be used for conservation measures, the chief criteria being relative importance and urgency of conservation.

(iii) Other Areas

The uses of areas not included in either of the above land-use zone types are separately designated.

(2) Agricultural Zones

The following are the 5 agricultural zone types.

(i) Type-1 Agricultural Zone

This zone consists of areas in the region with the best conditions for agricultural production and in which the agricultural infrastructure has long been well developed and the use of the land is intensive. These areas, to be found upwards of 4,000-4,500 ft. on the slopes of Mt. Kilimanjaro, have a total area of about 300 km^2, which represents 2.3% of the regional total and 6% of all of the land in the agricultural zones. Here an effort will be made to maintain the present production environment into the future for the sake of continuing high yields and stable production and to improve the living environment, particularly in terms of social facilities. Moreover, in order to cope with increasing population, land that has not yet been developed or is presently not being used will as far as possible be put to use.

(ii) Type-2 Agriculture Zone

This zone consists of areas with conditions second only to those of the Type-1 agricultural zone. Accordingly, the direction of land use in them will be the same, except that the development and use standards and targets will be geared to the particular conditions pertaining. These areas, located above 4,000 ft. on the slopes of Mt. Kilimanjaro and in the north and south Pare mountains, have a total area of about 620 km^2, which represent 5% of the total area of the region and 12% of all of the land in the agricultural zones. As in the case of the Type-1 agricultural zone, at the present time these areas are being cultivated entirely by smallholders, the cultivation being relatively intensive and the crops being coffee and bananas. In the future an effort will be made to bring these areas up to the level of the Type-1 areas in terms of intensity of use and level of yield through rationalization of use of irrigation, reorganization of fields, and other pertinent measures.

(iii) Type-3 Agricultural Zone

This zone consists of areas on the slopes of Mt. Kilimanjaro and in the Pare mountains between the altitudes of 3,500 ft. and 4,000 ft. with annual rainfall of at least 700mm. These areas cover approximately 770 km^2, which represents 6% of the total area of the region and 15% of all of the land in the agricultural zones. At present the main crops are maize and finger millet and, to a lesser extent, coffee and bananas, with some grazing here and there. Approximately 30 % of this 300 km^2 consists of corporative estate lands in the Moshi and Hai districts. In the future the basic direction that will be taken in these areas is control of large-scale development, grazing, and other forms of extensive land use and encouragement of development by smallholders.

(iv) Type-4 Agriculture Zone

This zone consist of what are known as the shamba lands, which are to be found in the upper lowland and footland zones of the region, covering an area of approximately 1,200 km^2, which represents 9% of the total area of the region and 23% of all of the area of the agricultural zones. The altitude range is 3,000-3,500 ft., and the annual rainfall in the vicinity of 700mm, which is the bare minimum for stable agricultural production. At the present time the land use in these areas is extensive, with crop cultivation only here and there where water and soil conditions are relatively good, the rest of the land being left fallow or used for grazing livestock. In the Hai District there is mostly wheat cultivation and dairy farming, and in the Pare District these lands consist mainly of sisal and other kinds of estates.

In the future expansion of smallholder crop cultivation and of corporative estates as well as controlled grazing will be encouraged, with provision of the necessary infrastructure, and the land will have to subdivided into many detailed land-use types for this purpose.

(v) Type-5 Agriculture Zone

This zone consists of areas in which the natural conditions can support some agricultural production but not with a great deal of stability. Covering approximately 2,340 km^2 in the lowland and footland zones of the region, they represent 18% of the total area of the region and 45% of all of the area of the agricultural zones. At the present time only about 15% of the land in these areas is cultivated, but in the future as population increases and the demand for agricultural land grows, it will be necessary to develop them more fully, which will involve provision of agricultural infrastructure, which is almost entirely lacking. Since such development will involve chiefly large-scale irrigation development, it will have to be undertaken by corporative entities and have an intensive orientation.

(3) Conservation Zones

The following are the 3 conservation zone types.

(i) Primeval Natural Environment Preservation Area

This area coincides with the existing Kilimanjaro National Park. In it will be necessary to give complete protection to flora and wildlife as well as to make it possible to utilize them for academic and cultural purposes.

(ii) Natural Environment Preservation Areas

These areas coincide with the existing game reserves and forest reserves. As in the case of (ii) above, there will be a basic interdict here on land development, other land uses, and even entry. In the future it will be necessary to extend these areas to about 1.5 times their present size, or 1,256.9km^2, which will represent 14.0 % of the total area of the region, by altering the game reserve boundary lines and extending the limits of the forest reserves, this latter measure being also for the purpose of increasing forest production.

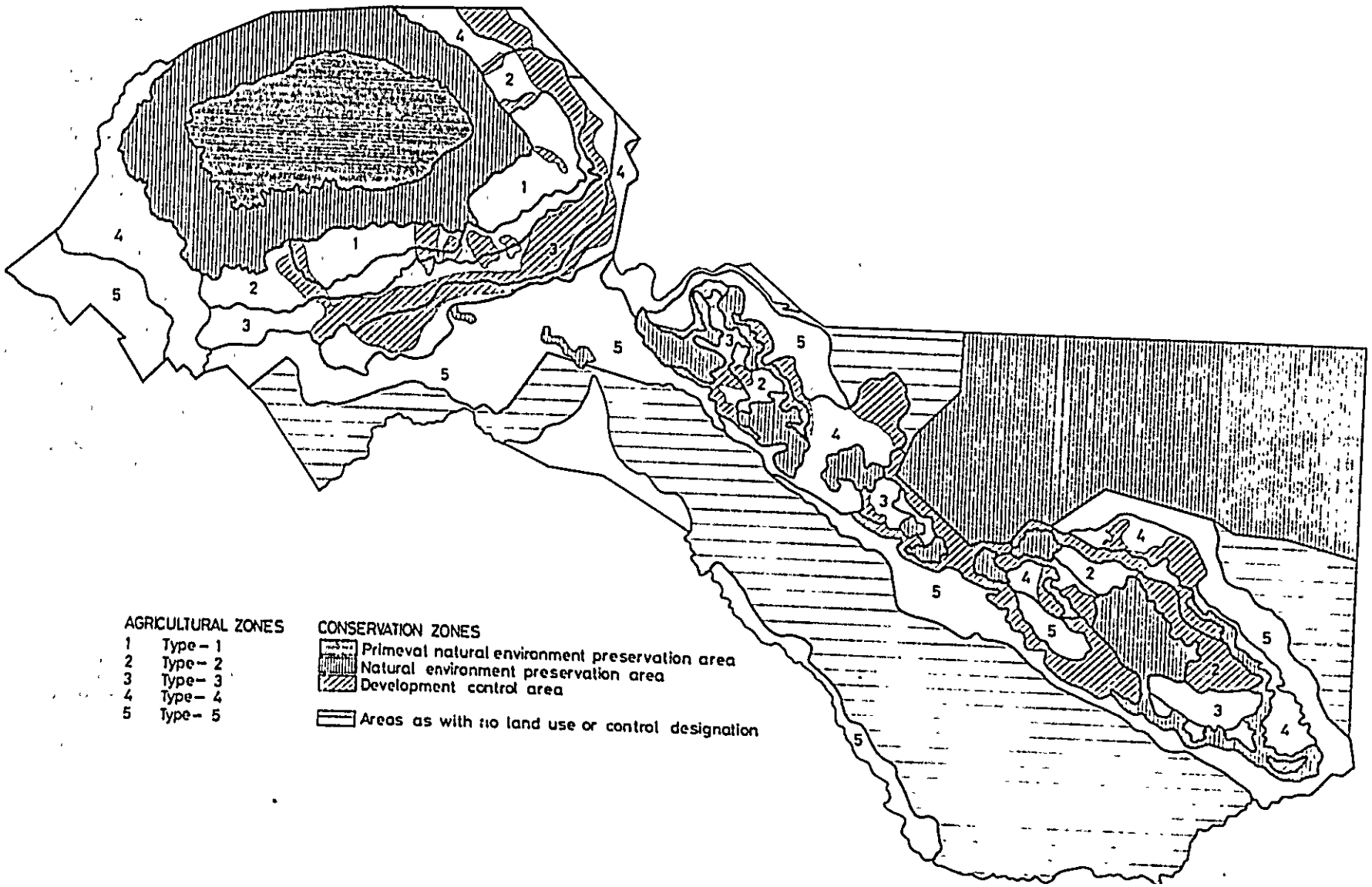
(iii) Development Control Areas

These are areas in which land development and use standards will be needed from the standpoint of conservation of the natural environment. Although these standards will vary according to the kind of conservation involved, they will basically consist of standards regarding density of use, i.e., the amount of farmland per household, density of population, field location, etc. These areas consist of the areas classified as Zone-B on the "Conservation Values" map of the natural conservation plan as well as all of the game control areas, areas with slopes in excess of 15 deg., and existing forest and thicket areas reserves other than forest in the region and represent 22% of the total area of the agricultural zones.

(3) Other Areas

These are areas hardly at all suitable for future development or use considering the natural conditions and the present state of land use. With less than 500mm of annual rainfall and low soil fertility, they are suitable for neither production nor settlement. Their total area is 3,440 km^2, or approximately 26% of the total area of the region. About the only use that is presently being made of them is nomadic grazing, chiefly by the Masai tribe. Considering how low the efficiency of land use and how small the development impact would be, they should not be developed even in the future, and it is therefore not necessary to set use and development standards for them. If, however, discovery is made of underground resources such as underground water or minerals, they should of course be developed.

LAND USE ZONNING PLAN



	Area designation	Land-use criteria	Main uses
AGRICULTURAL ZONES			
Type-1	Areas with very good natural land values	Maintain and improvement by smallholders	Coffee and bananas only
Type-2	Areas with good natural land values	Infill and extension or infrastructure improvement and renewal	Coffee and bananas and some other crops
Type-3	Areas with fair natural land values		Maize, finger millet, beans and very little coffee and bananas
Type-4	Areas with poor natural land values	New and large-scale development by cooperatives and/or government bodies	Maize, finger millet, beans, wheat, cotton and some grazing
Type-5	Areas with bad natural land values		Controlled grazing and crops, especially cash crops
CONSERVATION ZONES			
Primeval natural environment preservation area	Existing Kilimanjaro national park area (above 9,000 ft.)	Complete protection of the terrain and of the primeval flora and fauna	National park
Natural environment preservation area	Game and forest reserve and other nature preserved area	No settlement or other land use of this area is allowed, except for the conservation activities	Game, forest and other nature preserved area partly uses for commercial exploitation
Development control area	Areas with a slope of 15 deg. or more Game controlled area, etc.	Regulated development is allowed	Same as agricultural zones
Areas as with no land use or control designation	Areas with very bad natural land values	No control designation	No land use

Area List: Breakdown of the Land Use Zones (unit:km^2)

	Hai	Moshi	Rombo	Pare	Region
Agricultural Zones	1,207.0 (57.2)	898.9 (51.0)	497.2 (34.6)	2,618.4 (33.1)	5,221.5 (39.5)
Type-1	45.1 (2.1)	185.9 (10.5)	65.4 (4.6)	-	296.4 (2.2)
Type-2	120.7 (5.7)	140.2 (7.9)	127.8 (8.9)	227.7 (2.9)	616.4 (4.7)
Type-3	145.4 (6.9)	154.9 (8.8)	80.1 (5.6)	392.7 (5.0)	773.1 (5.9)
Type-4	455.8 (21.6)	100.4 (5.7)	138.3 (9.6)	501.1 (6.3)	1,195.6 (9.1)
Type-5	440.0 (20.9)	317.5 (18.0)	85.6 (6.0)	1,496.9 (18.9)	2,340.0 (17.7)
Conservation Zones	597.2 (28.3)	476.4 (27.0)	937.8 (65.4)	2,536.6 (33.7)	4,548.0 (34.4)
Primeval natural environment preservation area	163.5 (7.7)	78.4 (4.4)	514.1 (35.8)	-	756.0 (5.7)
Natural environment preservation area	433.7 (20.6)	398.0 (22.6)	423.7 (29.5)	2,536.6 (32.1)	3,792.0 (28.7)
Development control area*	120.2 (5.7)	223.9 (12.7)	171.0 (11.9)	640.9 (0.8)	1,156.0 (8.8)
Areas with no land use or control designation	305.7 (14.5)	388.8 (22.0)	-	2,745.0 (34.7)	3,439.5 (26.0)
Totals	2,109.9 (100.0)	1,764.1 (100.0)	1,435.0 (100.0)	7,900.0 (100.0)	13,209.0 (100.0)

* This area is included within agricultural zones

Figure in ( ) shows percentage

5.2 Development Zoning Plan

This plan divides the areas included in the agricultural zones of Type-1 through Type-5 into the following four development type zones and indicates the kind and extent of development that should be achieved in each by the target year of 1995:

(i) Areas in Which Only a Little Improvement Is Needed

These are areas in which the agricultural infrastructure is for the most part adequate and the rate of cultivation is over 50% and in which the basic direction of development is a little improvement of the present production environment and higher density and intensity of land use. They consist of the greater part of areas on the slopes of Mt. Kilimanjaro in the Type-1 and Type-2 agricultural zones and a part of the south Pare highland areas, for a total area of 700 km^2, or 13.0% of the total area of the development zones. The following table divides the areas in this zone into four subzones and indicates the extent of development to be undertaken in each by 1995:

Subzones	A	B	C	D
Rate of cultivation (%)	70-90	55-70	70-90	55-70
Adequacy of irrigation	●	●	●	●
Adequacy of feeder roads	●	●	●	●
Development components				
A. Improvement of intakes and channels	□	□	□	□
B. Improvement of feeder roads			■	■
C. Readjustment of farmland	■	■	■	■
D. Exploitation of water resources				
E. Increase of rate of cultivation	□	■	■	■

●Already adequate ■Indispensable □Necessary

(ii) Infill and Extension Zone

This zone consists of areas in which the rate of cultivation is less than 50% in spite of the fact that the agricultural infrastructure is fairly adequate or that at least it would be an easy matter to develop irrigation facilities and roads. In these areas the basic direction of development will be expansion of cultivated area with priority being given to smallholders, use of fallow land, and development of land which has not yet been used. These areas, which are located in the highland, upper lowland, mountain, and footland zones, have a total area of about 820 km^2, which represents 16.0% of the total area of all development zones. The table below divides the areas in this zone into four subzones and indicates the extent of development to be undertaken in each:

Subzones	A	B	C	D
Rate of cultivation (%)	30-40	40-55	30-40	40-55
Adequacy of irrigation	●	●	●	●
Adequacy of feeder roads	●	●	△	△
Development components				
A. Improvement of intakes and channels	□	□	□	□
B. Improvement of feeder roads			■	■
C. Readjustment of farmland	■	■	■	■
D. Exploitation of water resources				
E. Increase of rate of cultivation	■	■	■	■

●Already adequate △Not adequate and not easy to improve

■Indispensable □Necessary

(iii) Infrastructure Improvement and Renewal Zone

This zone consists of areas in which the agriculture infrastructure is not so good in spite of the fact that there is a fairly high rate of cultivation (50-70%) and high natural land values (see) and in which the direction of development will be redevelopment of farmland chiefly through improvement of irrigation, road, and other networks. These areas are located in the lowland, mountain, and footland zones of the region and have a total area of 450 km^2, which represents 9.0 % of the total area of all the development zones. The following table divides the areas in this zone into four subzones and indicates the extent of development to be undertaken in each.

Subzones	A	B	C	D
Rate of cultivation (%)	55-70	55-70	40-55	40-55
Adequacy of irrigation	▲	▲	▲	▲
Adequacy of feeder roads	▲△	●	▲△	●
Development components				
A. Improvement of intakes and channels	□	□	■	■
B. Improvement of feeder roads	■			■
C. Readjustment of farmland				
D. Exploitation of water resources				
E. Increase of rate of cultivation	□	□	■	■

●Already adequate ▲Not adequate but easy to improve

▲Not adequate and not easy to improve

■Indispensable □Necessary

(iv) New, Large-scale Development Zone

This zone consists of areas in which there has been almost no development of farmland or of agricultural infrastructure owing to the unreliability of the natural conditions. These areas belong to the Type-1 and Type-2 agricultural zones, and their future development and use are absolutely necessary. The direction of development

in them will be not development by smallholders, which is characterized by a low degree of overall supervision, but rather large-scale, organized development of large tracts of land by corporative entities. These areas, which consist of areas in the upper lowland and lowland zones and most of the footland zone, have a total area of 3,250 km^2, which represents 62.0 % of the total area in all of the development zones. The following table divides the areas in this zone into four subzones and indicates the extent of development to be undertaken in each.

Subzones	A	B	C	D
Rate of cultivation (%)	40-55	30-40	40-55	30-40
Adequacy of irrigation	▲	△	▲	△
Adequacy of feeder roads	●	●	△▲	△▲
Development components				
A. Improvement of intakes and channels				
B. Improvement of feeder roads			■	■
C. Readjustment of farmland				
D. Exploitation of water resources	■	■	■	■
E. Increase of rate of cultivation	□	□	□	□

●Already adequate ▲Not adequate but easy to improve

△Not adequate and not easy to improve

■Indispensable □Necessary

5.3 Land Development for Other Purposes Than Agriculture

Let us now consider measures for development of land in the region for other uses closely related to agriculture, including livestock raising, forestry, and water resources.

(1) Livestock Raising

There are four types of development of livestock raising in the region: the stall-feeding type, the small-scale subsidiary type, the dairy farming type, and the nomadic grazing type. Each type is described below.

(i) Stall-feeding Type

This type of development of livestock raising will apply to Mt. Kilimanjaro highland and Pare mountain areas, where it is already in evidence. As crop cultivation become more intensive in these areas, it will be necessary to raise livestock on chemical feeds and do away with natural pastures as well as regulate overgrazing and use of steep slopes for grazing.

(ii) Small-scale Subsidiary Type

This type of livestock raising is already being practiced in upper lowland, lowland, and footland blcoks in the region. In the future it will be limited to Type-4 and Type-5 agricultural lands (see 5.1) in connection with water resource and forestry development.

(iii) Dairy Farming Type

This is the government-run, large-scale, well-managed type of dairy farming presently to be found in the east part of the West Kilimanjaro block, which will be extended to the flater west part as well, where development has been slower in spite of relatively good natural conditions.

(iv) Nomadic Grazing Type

This is the type of grazing engaged in by the Masai in areas in the region not designated for agricultural use. Since there would be hardly any advantage to further development of this type of livestock grazing, it will be left as it has been, i.e., very extensive.

(2) Forestry

There will be three types of development of land for forestry purposes: commercial exploitation forest development, conservation forest development, and mixed exploitation and conservation forest development. Each is described below.

(i) Commercial Exploitation Type

This type is presently represented by the Kahe and Rau forests. In the future all lower Moshi areas with water resource development potential, including these two existing forests, will be incorporated in this forestry category. In order to increase forestry production to 5.82 times its present level by 1995, it will be necessary to develop approximately 80.0 km^2 of this type of land.

(ii) Conservation Type

The mountain side areas of north, central, and south Pare are already designated as this type of forest reserve. Besides reinforcing these areas, it will be necessary to develop the same type of forest reserves in eight other areas on the slopes of Mt. Kilimanjaro and in the Pare mountains, chiefly for the protection of river banks and slopes. Such afforestation will cover a total of 88.0 km^2, or 0.83 times the present area of such forest reserves.

(iii) Mixed Exploitation and Conservation Type

This type of forest is presently represented by the Kilimanjaro Forest Reserve and the Chome and Chambogo forest reserves in south Pare, for a total area of 1,130.0 km^2. Besides continuing to use in the same way those parts of these forests that are presently being in the same way commercially exploited, those parts with premeval growths will have these growths improved by promoting growth through thinning.

(3) Water Resource Development

There are two types of development of water resources: building small-scale reservoirs for water running off the surface and the development of underground water.

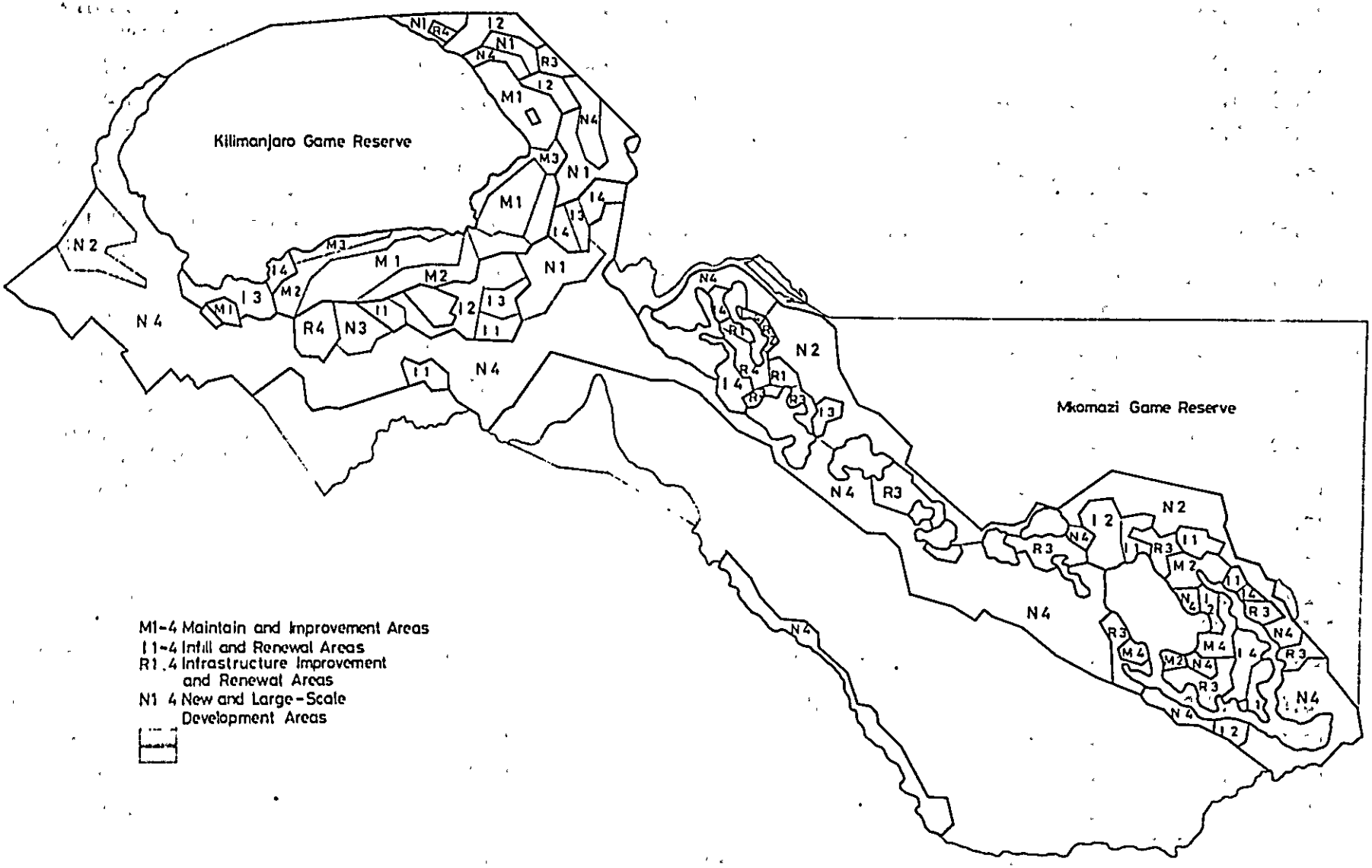
(i) Small-scale Reservoirs

Besides surveying a total of 14 locations in the Mt. Kilimanjaro highland and forest reserve blocks and north and south Pare mountain areas as possible sites for such small-scale dam reservoirs, existing irrigation intakes and channels will be repaired and extended.

(ii) Development of Underground Water

A total of seven areas--the lower Moshi alluvial plain, the lower Sanya Juu area, the Lake Chala area in the Rombo District, and four footland areas on the west side of the Pare mountains--will be surveyed as possible locations for development of underground water to promoto other development aspects which have been retarded by inadequate water resources.

LAND DEVELOPMENT ANALYSIS MAP



Area List: Breakdown of the Development Zones (unit:km^2)

	Hai		Moshi		Rombo		Pare		Region	
Maintain and improvement zone	101.0	(8.4)	350.9	(39.0)	110.6	(22.2)	195.0	(7.4)	653.6	(12.5)
M-A	52.6	(4.4)	143.2	(15.9)	100.6	(20.2)	-		296.4	(5.7)
M-B	36.3	(3.0)	95.1	(10.6)	-		42.2	(1.6)	173.6	(3.3)
M-C	-		26.2	(2.9)	10.0	(2.0)	-		36.2	(0.7)
M-D	12.1	(1.0)	86.4	(9.6)	-		48.9	(1.9)	147.4	(2.8)
Infill and extension zone	117.3	(9.7)	184.4	(20.5)	117.4	(23.6)	394.9	(15.1)	814.0	(15.6)
I-A	36.3	(3.0)	16.5	(1.8)	-		103.9	(4.0)	156.7	(0.3)
I-B	-		75.7	(8.4)	56.7	(11.4)	94.2	(3.6)	226.6	(4.3)
I-C	62.9	(5.2)	59.2	(6.6)	42.0	(8.4)	75.6	(2.9)	239.7	(4.6)
I-D	18.1	(1.5)	33.0	(3.7)	18.7	(3.8)	121.2	(4.6)	191.0	(3.7)
Infrastructure improvement and renewal zone	50.2	(4.2)	-		36.6	(7.4)	265.9	(10.2)	352.7	(6.8)
R-A	-		-		-		29.5	(1.1)	29.5	(0.6)
R-B	-		-		-		12.6	(0.5)	12.6	(0.2)
R-C	-		-		23.3	(4.7)	123.1	(4.7)	146.4	(2.8)
R-D	50.2	(4.2)	-		13.3	(2.7)	100.7	(3.8)	164.2	(3.1)
New and large-scale development zone	938.5	(77.8)	363.6	(40.4)	232.6	(46.8)	1,866.5	(71.3)	3,401.2	(65.1)
N-A	-		89.8	(10.0)	148.0	(29.8)	-		237.8	(4.6)
N-B	102.7	(8.5)	-		-		520.8	(19.9)	623.5	(11.9)
N-C	42.3	(3.5)	-		-		67.2	(2.6)	109.5	(2.1)
N-D	793.5	(65.7)	273.8	(30.4)	84.6	(17.0)	1,278.5	(48.8)	2,430.4	(46.5)
Totals	1,207.0	(100.0)	898.9	(100.0)	497.2	(100.0)	2,618.4	(100.0)	5,221.5	(100.0)

5.3 Agricultural Land Development Schedule

This is a schedule for development of new agricultural land up to 1995 on the basis of the use and development zoning and adjustment between the agricultural acreage requirements and the land availability as described in chapters 3 and 4.

(1) Planning Criteria

(i) Satisfaction of agricultural acreage requirements at the same time as keeping within the land availability limits.

(ii) Satisfaction of agricultural acreage requirements of each district within the district to the greatest extent possible.

(iii) Priority utilization of land that has good natural and infrastructural conditions.

The agricultural land development schedule has been determined by the following procedure on the basis of the above criteria and adjustment with the population distribution plan:

(i) Supplying of new agricultural land to meet the demand in each land-use block in the order of the 11 land categories set in 5.1, priority being given to the development zones (see 5.2) with the best infrastructural conditions.

(ii) In cases where the demand for new agricultural land exceeds the supply within land-use blocks, land in other land-use blocks within thesame district should be supplied to meet that demand. For instance, once the rate of cultivation reaches 100% in a highland block, land in the upper lowland block of the same district should be supplied to meet the additional demand. Land in lowland blocks and the Mkomazi and Pangani blocks, however, should only be made available with respect to the demand arising within the same block.

(iii) In cases where there is still additional demand after all of the available land in the district is used up (this being true of the Moshi and Rombo districts) the additional demand should be met with land outside the district.

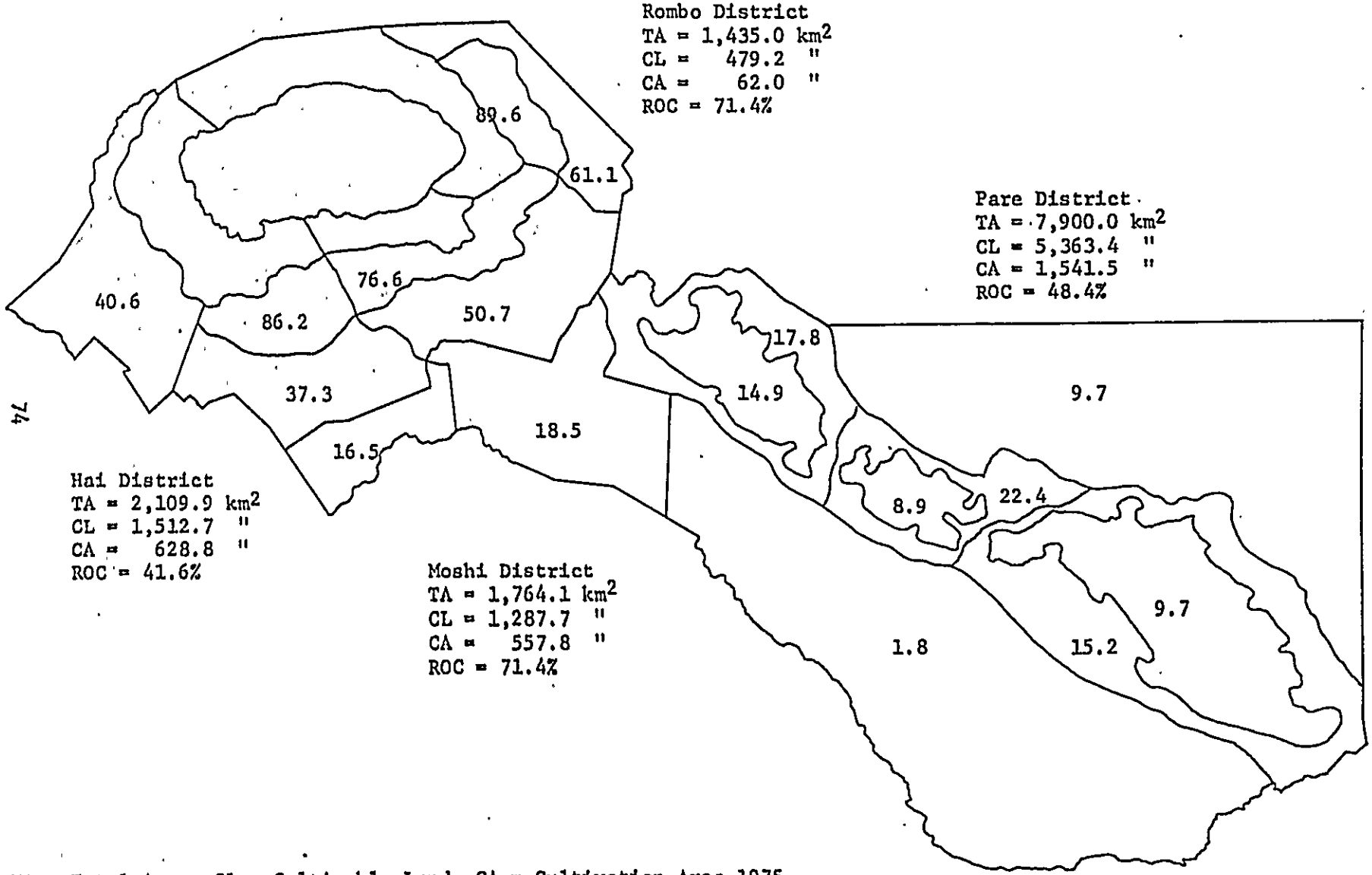
The following table and diagram give the agricultural acreage and rate of cultivation for each block at 10-year intervals.

Agricultural Land Development Schedule

	Total area	Cultivable land	Land already under cultivation	(%)	Cultivation acreage schedule 1985	(%)	1995	(%)
Hai District	2,109.9	1,512.7	628.8	(41.6)	997.5	(65.9)	1,214.6	(80.3)
Highland	216.6	214.4	184.8	(86.2)	192.1	(89.6)	214.6	(100)
Upper lowland	494.0	489.0	182.4	(37.3)	393.8	(80.5)	489.0	(100)
West Kilimanjaro	532.4	532.4	216.0	(40.6)	300.2	(56.4)	372.7	(70.0)
Sanya Plain	276.9	276.9	45.6	(16.5)	111.4	(40.2)	138.5	(50.0)
Moshi District	1,764.1	1,287.7	557.8	(43.3)	821.8	(63.8)	1,020.2	(79.2)
Highland	297.3	297.3	227.8	(76.6)	239.5	(80.6)	297.3	(100)
Upper lowland	500.2	455.4	231.0	(50.7)	366.8	(80.5)	455.4	(100)
Arusha Chini	695.6	535.0	99.0	(18.5)	215.5	(40.3)	267.5	(50.0)
Rombo District	1,435.0	497.2	354.9	(71.4)	419.0	(84.3)	497.2	(100)
Highland	192.9	179.3	160.7	(89.6)	162.8	(90.8)	179.3	(100)
Upper lowland	311.1	317.9	194.2	(61.1)	256.2	(80.6)	317.9	(100)
Pare District	7,900.0	5,363.4	1,541.5	(48.4)	716.5	(13.4)	936.0	(17.5)
North Pare Mountain	358.8	190.2	28.4	(14.9)	91.5	(48.1)	119.4	(62.8)
North Pare Footland	491.9	479.9	85.2	(17.8)	107.5	(22.4)	142.9	(29.8)
Central Pare Mountain	196.2	107.1	9.5	(8.9)	9.8	(9.2)	12.3	(11.5)
Central Pare Footland	249.3	126.7	28.4	(22.4)	67.3	(53.1)	87.7	(69.2)
South Pare Mountain	895.0	581.5	56.6	(9.7)	119.6	(20.6)	155.8	(26.8)
South Pare Footland	1,150.0	1,123.2	170.5	(15.2)	246.5	(22.0)	321.5	(28.6)
Mkomazi	2,071.8	286.3	27.7	(9.7)	17.9	(6.3)	23.1	(8.1)
Pangani	2,487.0	2,468.5	43.3	(1.8)	56.4	(2.3)	73.3	(3.0)
Totals	13,209.0	8,661.0	1,990.5	(23.0)	2,954.8	(34.1)	3,668.0	(42.4)

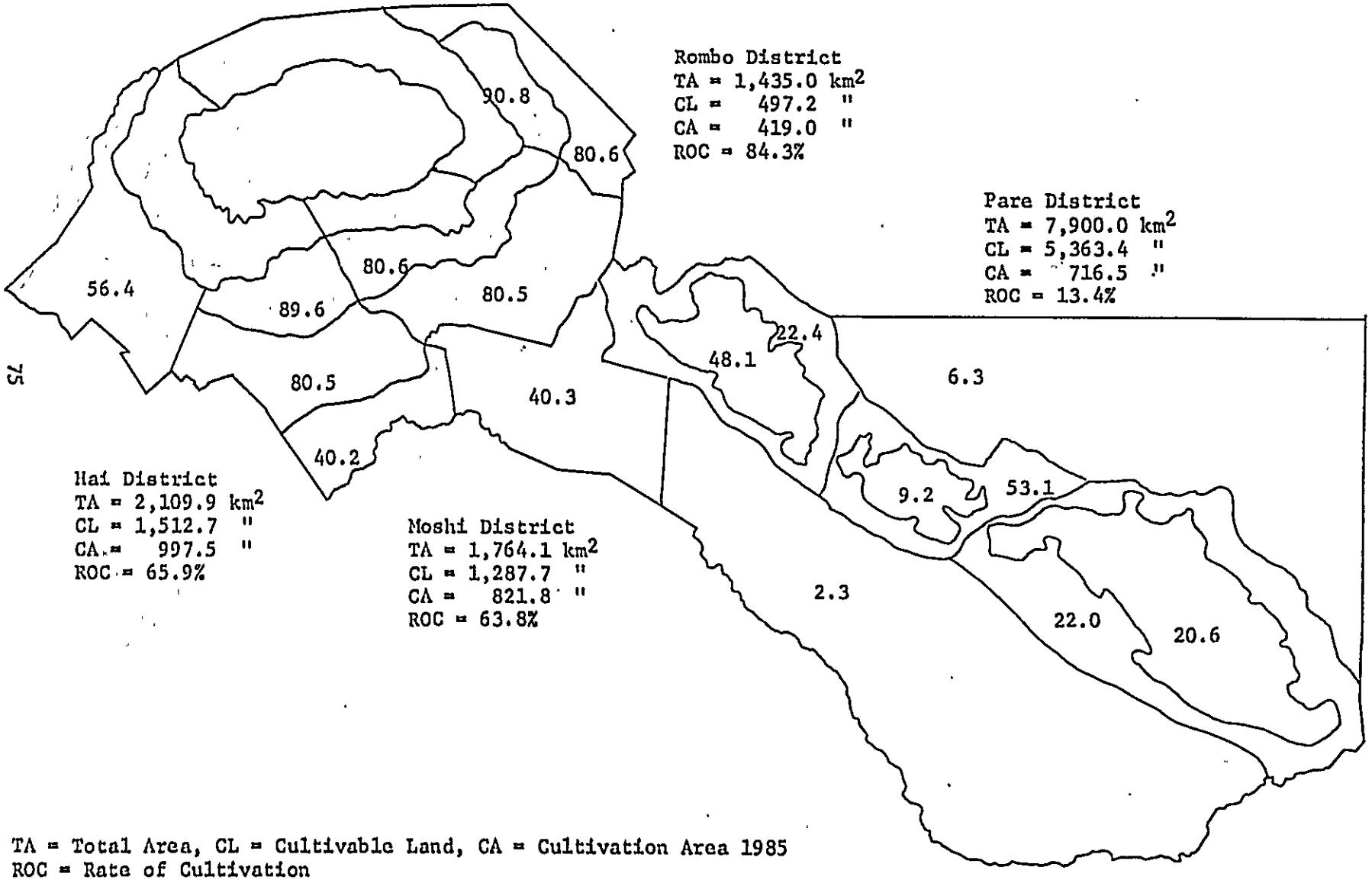
The figures in ( ) shows rate of cultivation (gross cultivated area ÷ cultivable land x 100)

Rate of Cultivation 1975



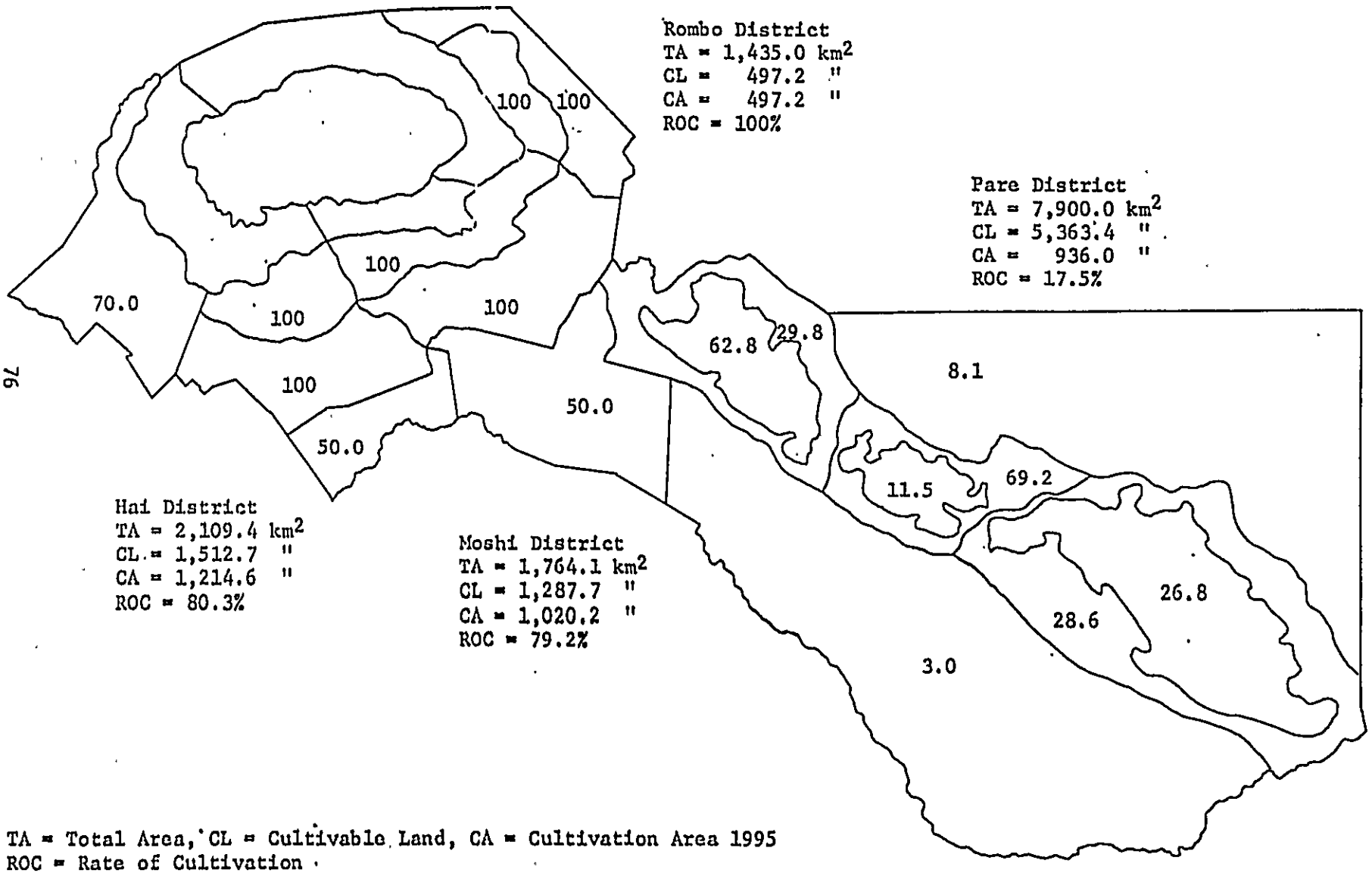
TA = Total Area, CL = Cultivable Land, CA = Cultivation Area 1975
ROC = Rate of Cultivation

Rate of Cultivation 1985



TA = Total Area, CL = Cultivable Land, CA = Cultivation Area 1985
ROC = Rate of Cultivation

Rate of Cultivation 1995



TA = Total Area, CL = Cultivable Land, CA = Cultivation Area 1995
ROC = Rate of Cultivation

HUMAN SETTLEMENT PLAN

Contents

1. PHYSICAL AND HUMAN GEOGRAPHY

1.1 Regional Setting

The Kilimanjaro Region, located in the northeastern part of the United Republic of Tanzania, borders on Kenya to the north, the Tanga Region to the southeast and the Arusha Region to the west and covers an area of 13,209 km^2, or 1.4% of the area of the entire country.

Mt. Kilimanjaro (5,895 m) and the Pare mountains (2,000-2,500 m) form the backbone of the region, running through the middle of it in a lengthwise direction. On the north side of the Pare mountain chain, which runs roughly through the southeastern half of the region, lies the Mkomazi Game Reserve, and on the south side lies the Pangani Basin, which extends to the Masai Steppe. Above 2,000 m on Mt. Kilimanjaro there are national park, game reserve, and forest reserve areas.

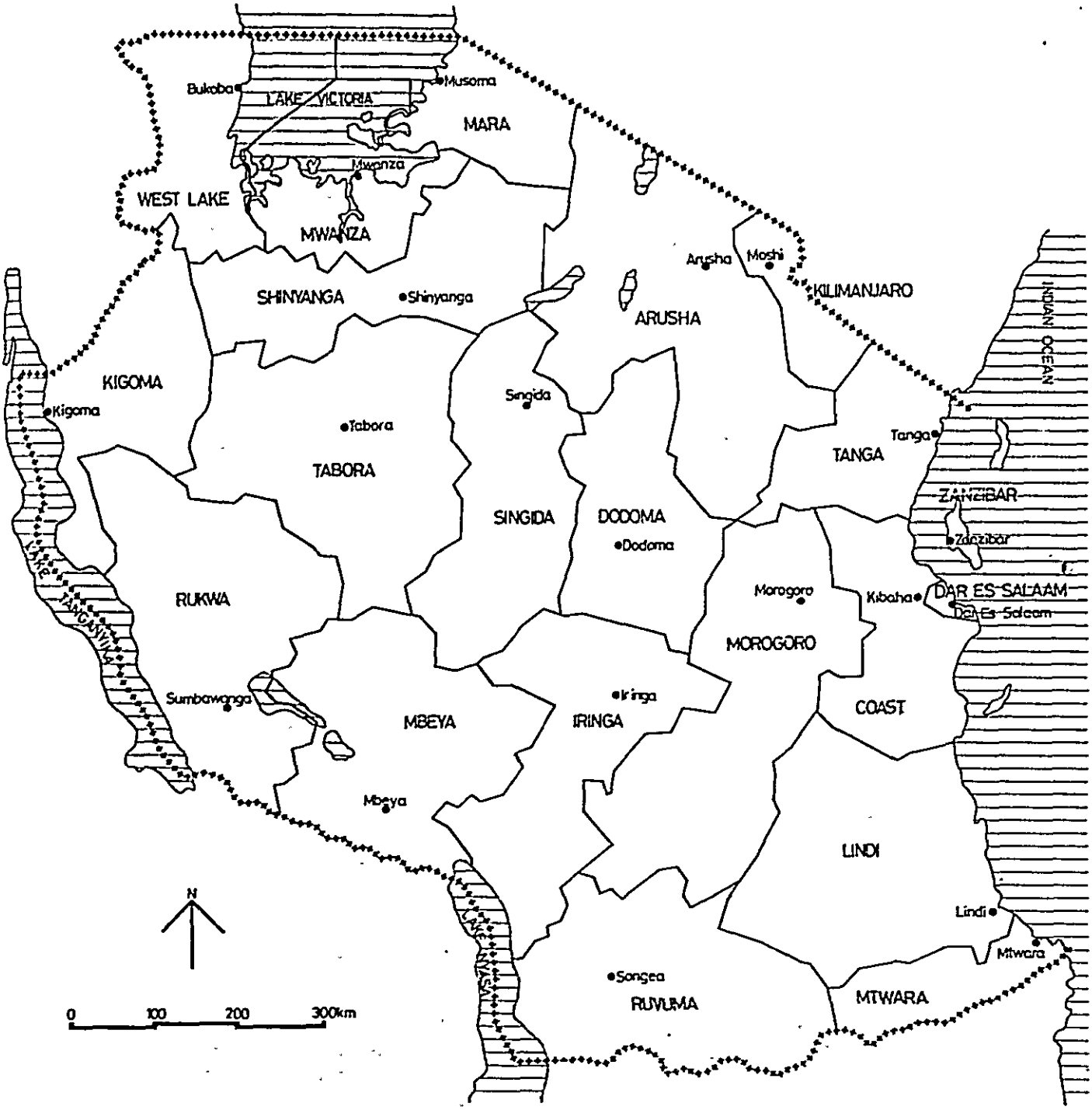
In 1975 the population stood at 865,000, or 5.7% of the national total. Most of this population is concentrated on the slopes of Mt. Kilimanjaro and the Pare mountains at altitudes between 800 and 2,000 meters, which makes for one of the highest population densities in the country: 65 persons/km^2 gross and 91 persons/km^2 net.

The largest national tribes are the Chagga and the Pare, and there are several smaller tribes, including the Masai, the Kahe, and the Arusha Chini.

The entire country is now administratively divided into 20 regions, 72 districts, and 15 subdistricts, the Kilimanjaro Region accounting for 4 districts (Hai, Moshi, Rombo, and Pare) and one subdistrict (Moshi Town). Although there is only one region smaller in area than the Kilimanjaro Region--the Dar es Salaam Region--the population of the region is somewhat higher than the average for all of the regions of the country. Moshi Town, the regional capital had a population of roughly 50,000 in 1975, which makes it the sixth largest town in Tanzania.

The region also has good long-distance transportation links, with trunk roads connecting Moshi Town with Arusha (85 km), Tanga (354 km), and Dar es Salaam (562 km), railroads leading to Arusha, Tanga, and Mombasa, and air routes from Kilimanjaro International Airport on the regional border with Arusha, which opened in 1975, to major towns throughout the country and cities throughout the world.

KILIMANJARO IN TANZANIA



1.2 The Land and Its People

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	2,305 (17.4%)	1,809 (13.7%)	1,392 (10.6%)	7,703 (58.3%)	13,209 (100%)
Land with human settlement	1,711 (18.0%)	1,577 (16.6%)	641 (6.8%)	5,764 (60.6%)	9,513 (100%)
Regulated land	594 (16.1%)	232 (6.3%)	931 (25.2%)	1,939 (52.4%)	3,696 (100%)

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/km^2.

	Hai	Moshi	Rombo	Pare	Totals
Land with human settlement (km^2)	1,711	1,577	461	5,764	9,513
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)	93.8	232.0	317.3	33.4	90.9

Remarks: i) The population figures are those projected for 1975 in the national demographic survey of Tanzania carried out in 1973.

ii) The breakdown of the population by district is based on the 1967 census and the latest results of surveys undertaken by the Kilimanjaro Regional Planning Unit.

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.

	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%)

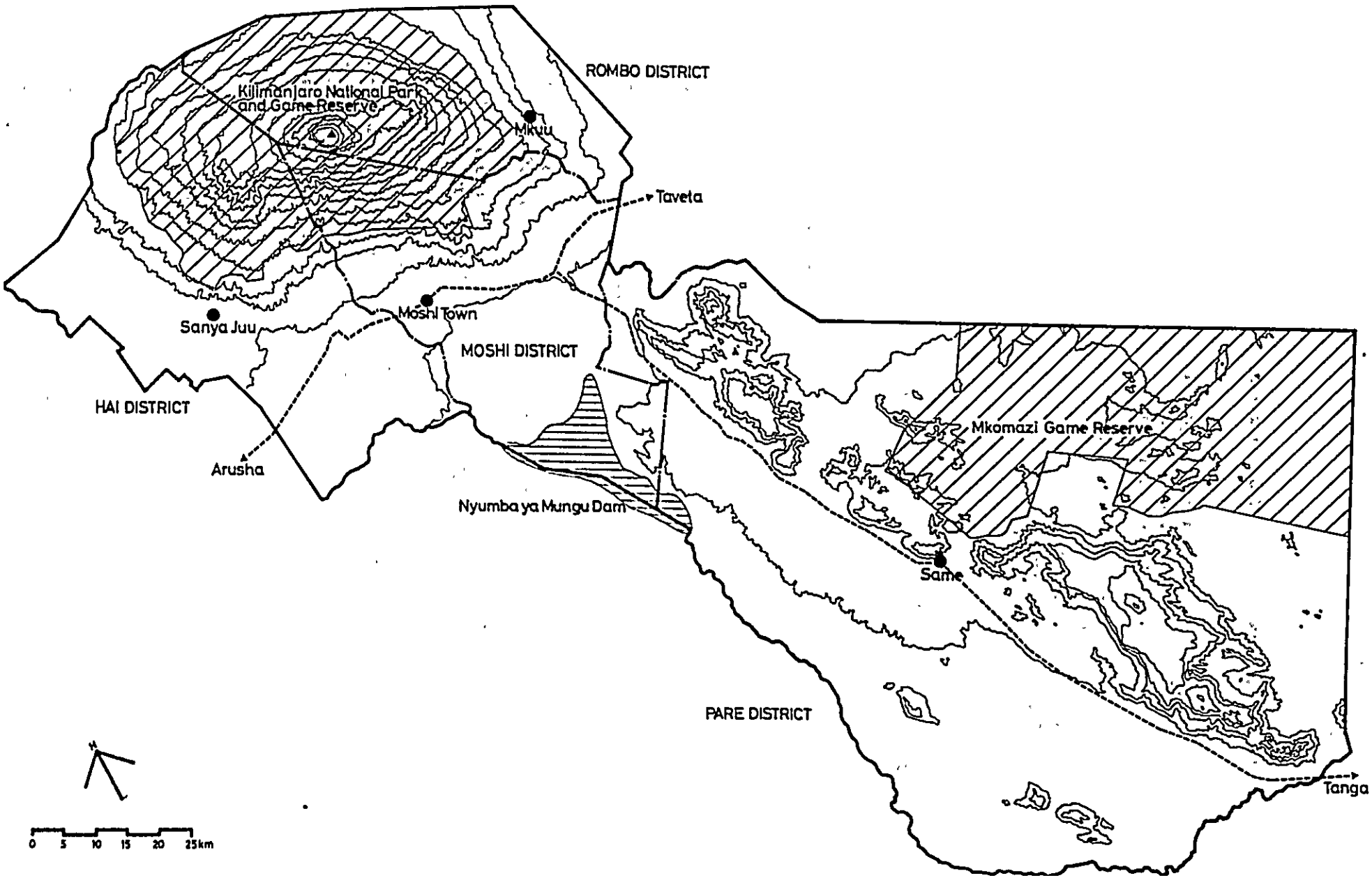
The following table gives the distribution of population density in order to give a better idea of the distribution of human settlement in the region. As one can see, only 14% of the total area has a population density over 100 persons/km^2, and a full 72% has only scattered settlement of under 20 persons/km^2. 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/km^2 (see "Population Distribution, 1975" map).

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%

The urban population of the region in 1975 is estimated at 80,000 persons, or 9% of the total, the breakdown being as follows:

Moshi Town	50,000
Same	15,000
Sanya Juu	5,000
Mkuu	5,000
Other urban areas	5,000

KILIMANJARO REGION



1.3 Past Population Growth in the Kilimanjaro District (now the Hai, Moshi, and Rombo districts)

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.

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

Source: "Population Growth and Agricultural Change in Kilimanjaro, 1920-1970," BRALUP Research Paper No. 40.

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

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.

1.4 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.

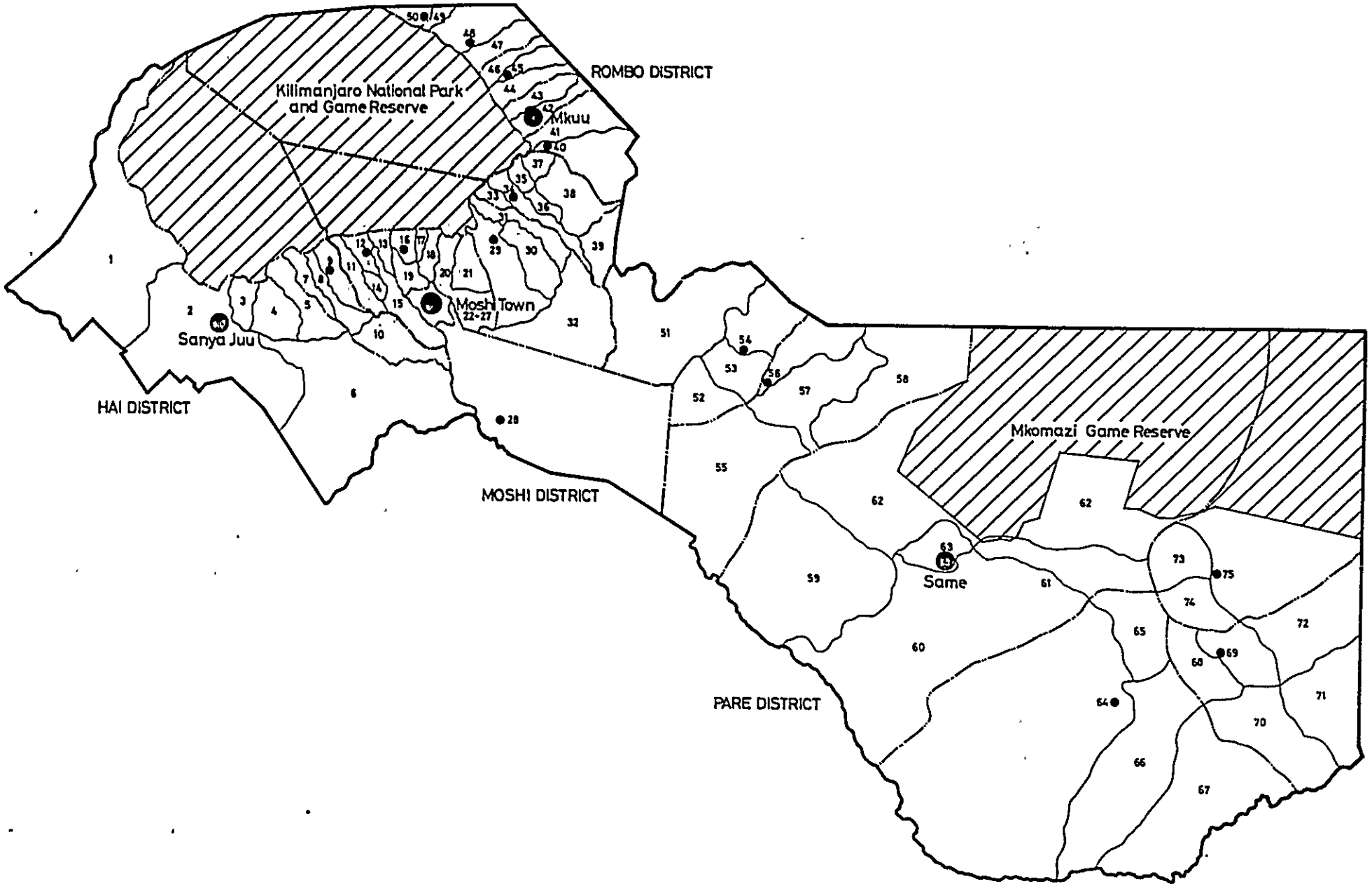
The administrative hierarchy in descending order below the district is: division, ward, and village, the numbers of each being as follows:

	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 seves 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

ADMINISTRATIVE MAP



ADMINISTRATIVE UNIT LIST

Hai District

West Hai Division

1 West Siha
2 Central Siha
3 East Siha
4 West Masama
5 East Masama
6 South Masama

Central Hai Division

7 West Machame
8 North Machame
9 East Machame
10 South Machame

Moshi District

Central Hai Division

11 West Kibosho
12 Central Kobosho
13 East Kobosho
14 Machame Kondi
15 Kirema

East Hai Division

16 North Uru
17 Uru Shimbwe
18 East Uru
19 Uru Mawella
20 West Old Moshi
21 East Old Moshi

Moshi Division

22 Moshi North
23 Moshi East
24 Moshi South-A
25 Moshi South-B
26 Moshi Central
27 Pasua

T.P.C. Arusha Chini Division

28 T.P.C.

West Vunjo Division

29 West Kirua Vunjo
30 East Kirua Vunjo
31 Kilema
32 Kahe

East Vunjo Division

33 West Marangu
34 East Marangu
35 North Maniba
36 South Maniba
37 North Mwika
38 South Mwika
39 Mwika Makuyuni

Rombo District

Mengwe Division

40 West Mengwe
41 East Mengwe

Mkuu Division

42 West Mkuu
43 East Mkuu

Mashati Division

44 South Masati
45 North Mashati
46 Mashati Olele

Usseri Division

47 South Usseri
48 Central Usseri
49 North Usseri

Tarakia Division

50 Tarakia

Pare District

Ugweno Division

51 Kileo
52 Mwanga
53 Msangeni
54 Kifula

Usangi Division

55 Lembeni
56 Kighare
57 Kilongwe
58 Kwakoa

Mwembe/Mbaga Division

59 Kirya/Mbaga
60 Mwembe/Vudee
61 Mshewa
62 Kisiwani/Msindo
63 Same

Chome/Suji Division

64 Makanya
65 Chome
66 Suji
67 Hedaru

Mamba/Vunta Division

68 Bwanbo
69 Mamba
70 Vunta
71 Bendera
72 Ndungu

Gonja Division

73 Vuje
74 Mtii
75 Gonja/Maore

2. POPULATION DISTRIBUTION PLAN

2.1 Description of the Plan

(1) Purpose

The purpose of the population distribution plan, as its name implies, is to plan for proper distribution of the anticipated future regional population throughout the Kilimanjaro Region according to a definite time schedule. What this will involve is, first, recognition of how population distribution in the region has evolved in the past and of the features of the present population distribution; next, determination of the additional population capacities of present settlement areas and of the extent to which settlement can be extended to other areas; and then allocation of the future increase in population in an appropriate fashion among all of the areas in which human settlement will be allowed. Planning for distribution of population in rural areas will, of course, have to take into account agricultural potential, and the overall population distribution plan will have to take into account not only such factors as the future transportation and infrastructural systems and location of towns and other urban population centers but also efficiency of social infrastructure investment.

(2) Contents

The population distribution plan consists of the following 5 elements, each of which is used for a different purpose:

(i) An urban population plan, which sets appropriate future population levels for the major towns in the region;

(ii) A rural population plan, which sets future population levels in rural areas;

(iii) A population movement plan, which sets the amount of population movement within the region into the towns and into rural areas from other rural areas which will have population overspills;

(iv) A population plan by administrative unit, which sets the populations of districts, divisions, and wards for 1995; and

(v) A population density plan, which will serve as a planning criterion for future improvement of social infrastructure.

(3) Application

Besides serving, together with the land-use plan, as a basis for setting goals in industrial, social, infrastructure and other planning as a macroframe for regional physical planning, the population distribution plan will be helpful in terms of integration of the plans and projects of various sectors. Also, it sets targets which are important for the overall development of the individual districts, urban development, and village improvement, and besides application of the targets set in it in the context of local administrative population policy, administrative measures and guidance will be necessary for their achievement.

(4) Population Distribution Planning Policy

Systematic movement of population from rural areas to urban areas is planned for on the basis of what it is considered will be appropriate town size in view of the distribution of industry, the size of the hinterland population, the kinds of urban functions that will be necessary, and other factors.

High-density rural areas will be formed by, for instance, making maximum use of the land by actively seeking out land in the highland zones which has not yet been developed, these zones already having fairly adequate social infrastructure.

The overflow population from the highland zones will be absorbed by the Mt. Kilimanjaro upper lowland zone and the Pare footland zone, in both of which there is ample leeway for systematic development.

A prerequisite for movement of population to lowland areas is agricultural development projects in which irrigation facilities are provided, such movement being geared to the development schedule.

2.2 Urban Population Distribution

(1) The ratios of urban to rural population that are planned for the Kilimanjaro Region on the basis of anticipated industrial structure are given in the table below. What is meant here by urban population is people not engaged in agriculture and their families. Such persons will, as a rule, live in urban areas.

Year	Urban population	Rural population	Urban/rural ratio
1975	80,000	785,000	9:91
1980	120,000	902,000	12.88
1985	180,000	1,013,000	15:85
1990	240,000	1,102,000	18:82
1995	280,000	1,176,000	19:81

The urban population for 1985 has been set halfway between those for 1975 and 1995.

Since there will not be very much need for population influx into the towns from rural areas in the period 1975-1980, social population increase of the towns has been set fairly low for that period. In the period 1980-1990, however, there will be active migration of rural population to the towns as the urban infrastructure is gradually improved.

Migration to urban areas in the period 1990-95 has been set at a moderate level since the rate of growth of regional population is expected to decline by then.

(2) Distribution of Urban Population

The future populations of the towns and other rural areas of the Kilimanjaro Region have been set as follows on the basis of their existing populations, future functions and industrial distribution, and other considerations.

	1975	1985	1995
Moshi Town	50,000	100,000	150,000
Same	15,000	32,500	50,000
Sanya Juu	5,000	15,000	25,000
Mkuu	5,000	15,000	25,000
Other urban areas	5,000	17,500	30,000
Totals	80,000	180,000	280,000

Remarks: (i) Since Moshi Town can be expected to continue to grow in terms of administrative facilities, industry, commerce, trasportation, and communications as the nerve center of the region, it has been allocated 10% of the population of the region in 1995.

(ii) Since Same is not only the Pare district center but also the second most important town in the region, it has been allocated a population double those of the other two district centers for 1995.

(iii) As district centers Sanya Juu and Mkuu have been allocated 10% of the population of their respective districts in 1995.

(iv) "Other urban areas" refers to the 15 division centers.

(3) Social Increase of Population in Towns

The amount of inflow of population into the towns will be the difference between the populations set for them for 1995 and the respective sums of their present populations and their natural increases in population by that time. As indicated in the table below, this will mean a total flow of 124,000 persons from rural areas to the four towns. The figures are as follows:

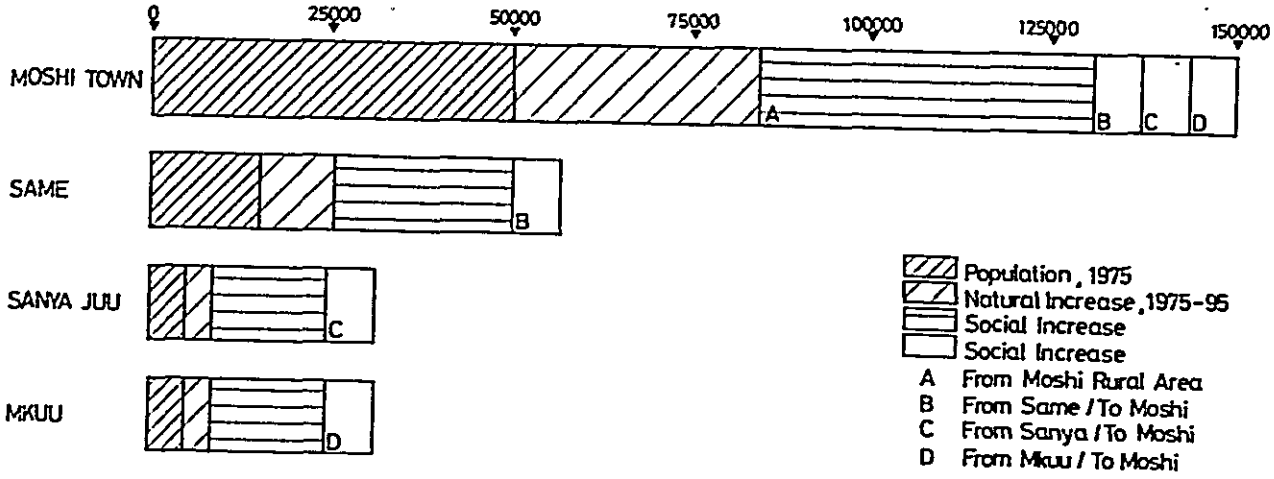
	Population, 1995	Population, 1975	Natural increase, 1975-95	Social increase, 1975-95
Moshi Town	150,000	50,000	34,100	65,900
Same	50,000	15,000	10,300	24,700
Sanya Juu	25,000	5,000	3,400	16,600
Mkuu	25,000	5,000	3,400	16,600
Totals	250,000	75,000	51,200	123,800

As for the sources of such population movement to the towns, they will be as follows. In the case of Moshi Town, 70% of the population inflow will be from highland areas in the same district, and the remaining 30% from the other three districts (10% from each). In the case of each of the other three towns, however, the population inflow will be only from highland areas of the same district. The figures are given in the table below.

	Social increase	From highland areas in Moshi District	From other districts
Moshi Town	65,900	46,130	19,700

	Net social increase of district center	From highland areas to district center and Moshi Town	To Moshi Town
Pare District (Same)	24,700	31,290	6,590
Hai District (Sanya Juu)	16,600	23,190	6,590
Rombo District (Mkuu)	16,600	23,190	6,590

BREAKDOWN OF URBAN POPULATION



2.3 Rural Population Distribution

(1) Planning Process

In deciding the future population distribution of rural areas, it is necessary to take into account the natural increase in population and the amount of population that the agricultural land can support. If the population increase beyond this capacity, the surplus population will have to be absorbed elsewhere where the population does not increase to capacity.

The following process has been followed in order to ascertain in each case whether the population carrying capacity of the additional land suitable for cultivation in the block will be smaller than, equal to, or greater than the natural increase in population that is foreseen.

Step-1 Determination of the 1975 population of each of the blocks on the basis of the population statistics for 1975.

Step-2 Determination of the 1995 population of each block on the basis of the figures for the 1975 population and the population increase coefficients for that 20-year period set in the macroframe.

Step-3 Determination of the amount of natural increase in population during that period.

Step-4 Determination of the net population increases in the case of rural blocks by subtracting the amount of outflow to urban areas as determined in section 2.2 above.

Step-5 Determination of which blocks will have capacity to absorb additional population from rural areas of other blocks and the extent of such capacity.

(2) Net Population Increase Up to 1995

Blocks	(STEP-1) Population, 1975	(STEP-2) Population, 1995	(STEP-3) Natural population increase, 1975-95	Population outflow to urban areas up to 1995	(STEP-4) Net population increase up to 1995
Hai District	155,500	261,800	106,300		83,100
Highland	98,800	166,300	67,500	- 23,200	44,300
Upper lowland	36,900	62,100	25,200		25,200
West Kilimanjaro	13,600	22,900	9,300		9,300
Sanya Plain	6,200	10,500	4,300		4,300
Moshi District	315,900	531,800	215,900		169,800
Highland	242,800	408,700	165,900	- 46,100	119,800
Upper lowland	61,300	103,200	41,900		41,900
Lowland	11,800	19,900	8,100		8,100
Rombo District	141,300	237,800	96,500		77,300
Highland	92,000	154,800	62,800	- 23,200	39,600
Upper lowland	49,300	83,000	33,700		33,700
Pare District	177,300	298,400	121,100		89,800
North Pare	58,500	98,500	40,000	- 10,900	29,100
Central Pare	8,000	13,500	5,500	- 2,700	2,800
South Pare	93,100	156,700	63,600	- 17,700	45,900
Mkomazi	1,600	2,700	1,100		1,100
Pangani	16,100	27,000	10,900		10,900

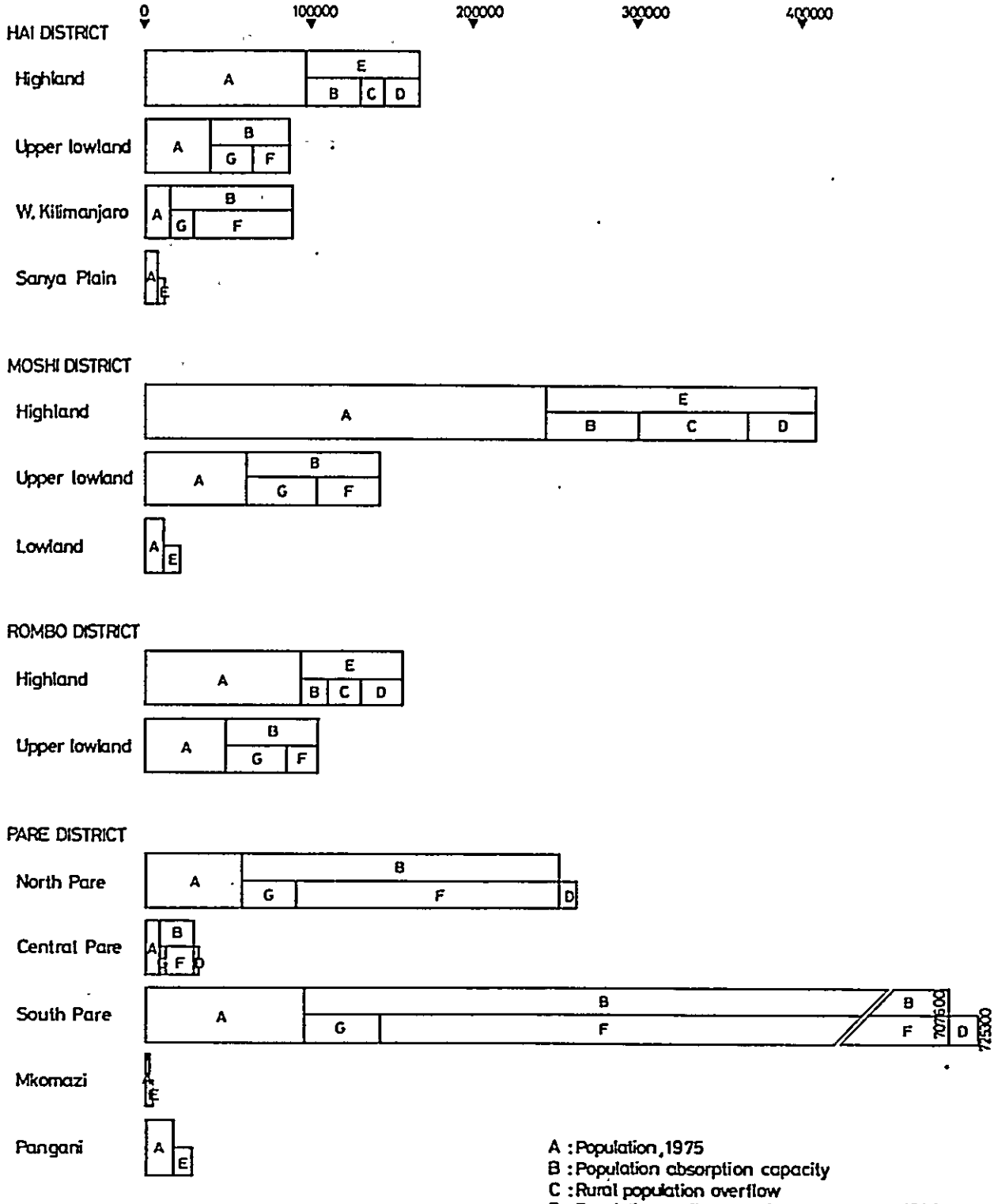
Remark: It has been assumed that the total population outflow from the north, central and south Pare mountain and footland blocks will come from each pair of blocks (north, central, and south) in the same proportion as their 1975 populations.

(3) Comparison of Net Population Increase and Population Absorption Capacity

Blocks	Net population increase up to 1995	Population absorption capacity	Rural population overflow	Capacity to absorb rural population inflow
Hai District	83,100	-	-	-
Highland	44,300	29,300	15,000	-
Upper lowland	25,200	46,100	-	20,900
West Kilimanjaro	9,300	70,100	-	60,800
Sanya Plain *	4,300	-	-	-
Moshi District	169,800	-	-	-
Highland	119,800	54,700	65,100	-
Upper lowland	41,900	79,800	-	37,900
Lowland *	8,100	-	-	-
Rombo District	77,300	-	-	-
Highland	39,600	17,700	21,900	-
Upper lowland	33,700	53,800	-	20,100
Pare District	89,800	-	-	-
North Pare	29,100	193,300	-	103,500
Central Pare	2,800	17,600	-	14,800
South Pare	45,900	614,500	-	568,600
Mkomazi *	1,100	-	-	-
Pangani *	10,900	-	-	-

* The population absorption capacities of these blocks have not been considered here. As for the natural population increases, they will be relatively small and as such have been considered absorbable within the blocks themselves.

BREAKDOWN OF POPULATION BY BLOCK



A : Population, 1975
B : Population absorption capacity
C : Rural population overflow
D : Population outflow to urban areas up to 1995
E : Natural population increase, 1975-1995
F : Capacity to absorb rural population inflow
G : Net population increase up 1995

(4) Rural Population Movement Proposal

The following is proposed with respect to rural population movement within the region.

- Absorption of the 15,000-person overflow from the highland block of the Hai District by the upper lowland block of the same district.

- Absorption 37,900 persons of the 65,100-person overflow from the highland block of the Moshi District by the upper lowland block of the same district.

- Absorption of the remaining 27,200 persons of the Moshi highland block overflow by the Pare District, including the Pangani Basin through its agricultural development (and perhaps in part by the Hai lowland block through its development and/or the West Kilimanjaro block of the Hai District).

- Absorption of 20,100 persons of the 21,900-person population overflow from the highland block of the Rombo District by the Rombo upper lowland block.

- Absorption of the remaining 1,800 persons of the Rombo highland block overflow in the same manner as the overflow from the Moshi highland block.

- Absorption by the Pare District blocks, which will have plenty of population carrying capacity in excess of their natural population increases, of the overflows from the other districts of the region.

2.4 Regional Population Distribution Plan

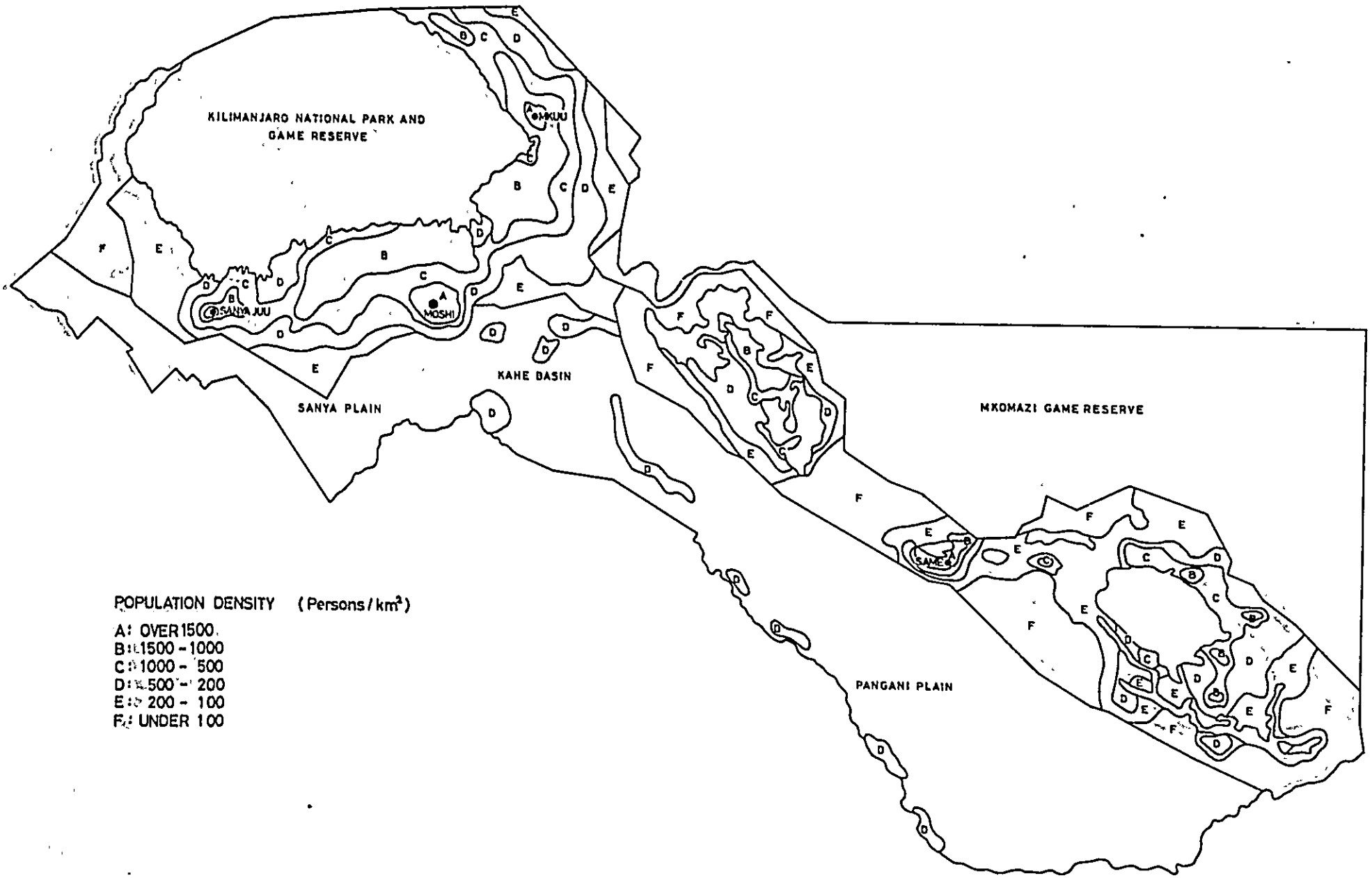
(1) Plan For Distribution Of Population By Block

	1975	1980	1985	1990	1995
Hai District	160,500	188,700	218,200	243,700	263,600
Highland	98,800	109,477	117,665	123,121	128,100
Upper lowland	36,900	47,350	58,400	68,550	77,100
West Kilimanjaro	13,600	16,100	18,800	21,100	22,900
Sanya Plain	6,200	7,300	8,500	9,600	10,500
Sanya Juu	5,000	8,473	14,835	21,329	25,000
Moshi District	365,900	428,500	500,700	563,500	608,500
Highland	242,800	264,025	281,050	290,575	297,500
Upper lowland	61,300	81,825	103,350	123,375	141,100
Lowland	11,800	13,900	16,300	18,300	19,900
Moshi Town	50,000	68,750	100,000	131,250	150,000
Rombo District	146,300	171,350	197,600	220,150	237,800
Highland	92,000	99,652	104,715	107,346	109,700
Upper lowland	49,300	63,225	78,050	91,475	103,100
Mkuu	5,000	8,473	14,835	21,329	25,000
Pare District	192,300	233,450	276,500	314,650	346,100
North Pare	58,500	70,026	80,555	89,446	97,700
Mountain	49,000	58,826	67,355	74,646	81,700
Footland	9,500	11,200	13,200	14,800	16,000
Central Pare	8,000	9,601	11,034	12,145	13,300
Mountain	3,700	4,601	5,134	5,545	6,000
Footland	4,300	5,000	5,900	6,600	7,300
South Pare	93,100	111,395	128,105	142,329	155,400
Mountain	64,500	77,795	88,805	98,129	107,400
Footland	28,600	33,600	39,300	44,200	48,000
Mkomazi	1,600	1,900	2,200	2,500	2,700
Pangani	16,100	19,000	22,100	24,800	27,000
Same	15,000	21,528	32,506	43,430	50,000
Regional totals	865,000	1,022,000	1,193,000	1,342,000	1,456,000

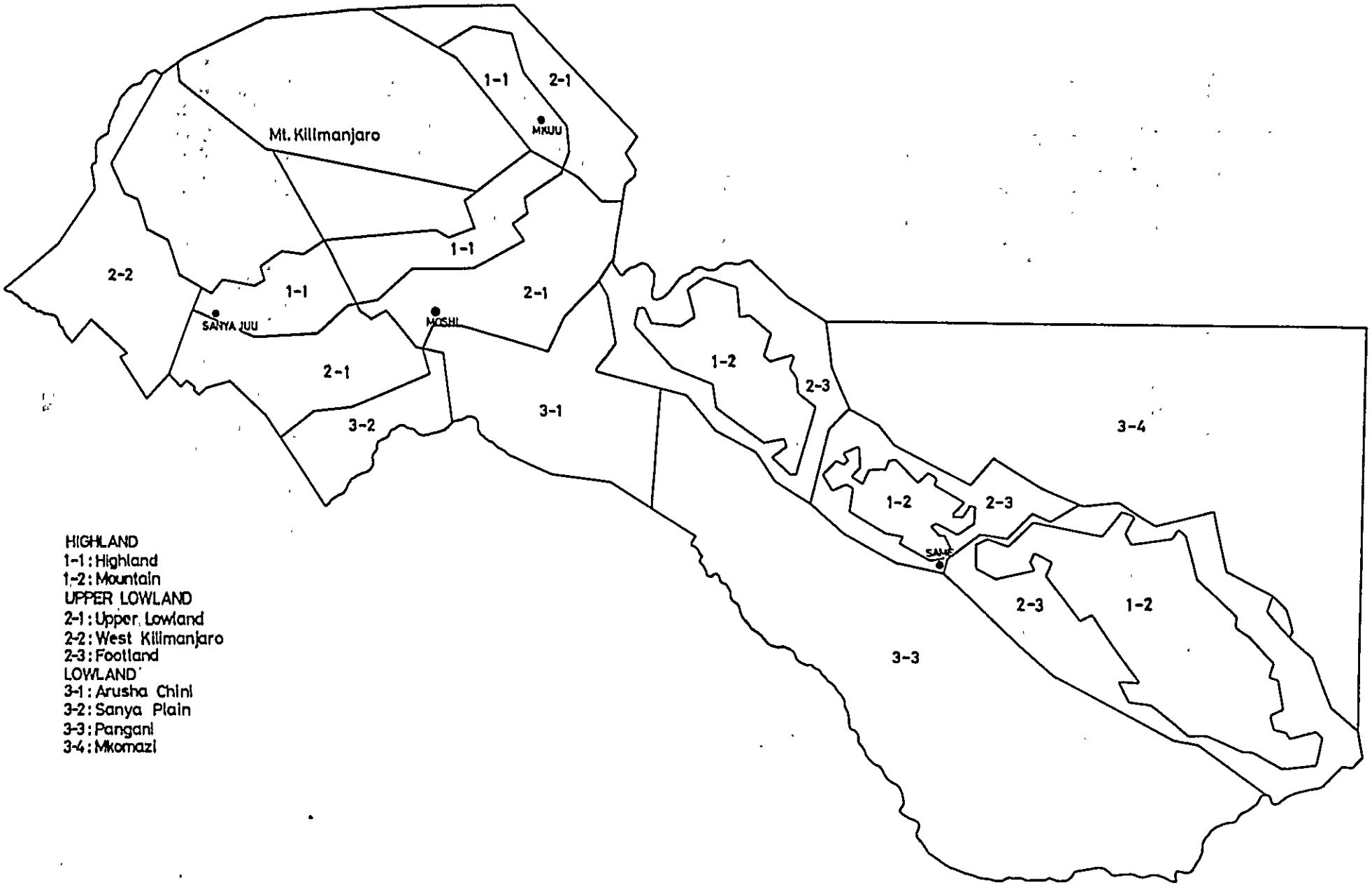
(2) Plan for Distribution of Population by Administration Unit

	1975	1980	1985	1990	1995
Hai District	160,544	188,700	218,200	243,700	263,600
West Hai	97,492	119,519	141,415	160,928	175,609
Central Hai	63,052	69,181	76,785	82,772	87,991
Moshi District	365,895	428,500	500,700	563,500	608,500
Central Hai	74,902	82,268	88,491	92,456	95,495
East Hai	89,753	102,640	114,719	124,159	132,084
Moshi Town	50,000	68,750	100,000	131,250	150,000
TPC/Arusha Chini	4,818	5,654	6,630	7,444	8,095
West Vonjo	58,267	67,781	77,027	84,524	90,856
East Vonjo	88,154	101,407	113,833	123,666	131,970
Rombo District	146,272	171,350	197,600	220,150	237,800
Mengwe	34,970	37,997	41,813	44,724	47,265
Mkuu	32,961	44,417	54,488	63,839	70,003
Mashati	34,039	37,736	42,244	45,863	49,015
Usseri	38,208	43,505	49,556	54,591	58,969
Tarakia	6,094	7,695	9,499	11,133	12,548
Pare District	192,289	233,450	276,500	314,650	346,100
Ugweno	29,266	35,426	40,755	45,269	49,441
Usangi	36,214	43,064	49,635	55,244	60,287
Mwenbe/Mbanga	45,451	57,835	74,316	89,831	100,689
Chome/Suji	18,036	21,184	24,467	27,280	29,746
Manba/Vunta	36,588	43,860	50,458	56,079	61,221
Gonja	26,734	32,081	36,869	40,947	44,716
Totals	865,000	1,022,000	1,193,000	1,342,000	1,456,000

POPULATION DENSITY MAP, 1995



MAP OF BLOCKS



2.5 Population Movement Schedule

(1) Schedule of Population Movement Between Districts

	1976-80	1981-85	1986-90	1991-95	Totals
Hai District					
To Moshi District	1,000	2,200	2,200	1,200	6,600
Moshi District					
To Pare District	6,800	6,800	6,800	6,800	27,200
From other districts	3,000	6,600	6,600	3,600	19,800
Rombo District					
To Moshi District	1,000	2,200	2,200	1,200	6,600
To Pare District	450	450	450	450	1,800
Pare District					
To Moshi District	1,000	2,200	2,200	1,200	6,600
From other districts	7,250	7,250	7,250	7,250	29,000

(2) Population Movement In and Out of Development Blocks in Each District: Hai District

	1976-80	1981-85	1986-90	1991-95	Totals
Highland					
To Sanya Juu	2,573	5,362	5,594	3,071	16,600
To upper lowland	3,750	3,750	3,750	3,750	15,000
To Moshi Town	1,000	2,200	2,200	1,200	6,600
Upper lowland					
From highland	3,750	3,750	3,750	3,750	15,000
West Hai	0	0	0	0	0
Sanya Plain	0	0	0	0	0
Sanya Juu					
From highland	2,573	5,362	5,594	3,071	16,600

* Of the population overflow of 38,200 from the highland areas of the Hai District by 1995, 16,600 persons will be allocated to Sanya Juu, 6,600 to Moshi Town, and 15,000 to the upper lowland block.

* The West Hai and Sanya Plain development blocks will have no overflow or inflow.

(3) Population Movement In and Out of Development Blocks in Each District: Moshi District

	1976-80	1981-85	1986-90	1991-95	Totals
Highland					
To Moshi Town	7,146	14,890	15,536	8,528	46,100
To upper lowland	9,425	9,425	9,425	9,425	37,900
To Pare District	6,800	6,800	6,800	6,800	27,200
Upper lowland					
From highland	9,425	9,425	9,425	9,425	37,900
Lowland	0	2,500	0	0	2,500
Moshi Town					
From highland	7,146	14,890	15,536	8,528	46,100
From Hai District	1,000	2,200	2,200	1,200	6,600
From Rombo District	1,000	2,200	2,200	1,200	6,600
From Pare District	1,000	2,200	2,200	1,200	6,600

* Of the 111,200 population overflow from the highland areas of Mosh District by 1995, 46,100 persons will be allocated to Moshi Town, 37,900 to the upper lowland block, and 27,200 to the Pare District.

* The lowland areas of the district will see a population influx of 2,500 over and above natural population growth as a result of the lower Moshi area rural development.

(4) Population Movement In and Out Development Blocks in Each District: Rombo District

	1976-80	1981-85	1986-90	1991-95	Totals
Highland					
To upper lowland	5,025	5,025	5,025	5,025	20,100
To Mkuu	2,573	5,362	5,594	3,071	16,600
To Moshi Town	1,000	2,200	2,200	1,200	6,600
To Pare District	450	450	450	450	1,800
Upper lowland					
From highland	5,025	5,025	5,025	5,025	20,100
Mkuu					
From higland	2,573	5,362	5,594	3,071	16,600

* Of the 45,100 population overflow from the highland areas of Rombo District by 1995, 16,600 persons will go to Mkuu, 20,100 to upper lowland areas of Rombo District, 6,600 to Moshi Town, and 1,800 to the Pare District.

(5) Population Movement In and Out of Development Blocks in Each District: Pare District

	1976-80	1981-85	1986-90	1991-95	Totals
Rural areas					
To Same	3,828	7,978	8,324	4,570	24,700
To Moshi Town	1,000	2,200	2,200	1,200	6,600
From Moshi District	6,800	6,800	6,800	6,800	27,200
From Rombo District	450	450	450	450	1,800
Same					
From North Pare	1,410	2,939	3,067	1,684	9,100
From Central Pare	202	420	438	240	1,300
From South Pare	2,216	4,619	4,819	2,646	14,300

* Development of new agricultural land in the Pare District will make it possible for this district to absorb a population overflow of approximately 29,000 persons from the slopes of Mt. Kilimanjaro by 1995, the breakdown being 27,200 from Moshi District and 1,800 from Rombo District.

2.6 Population Density Plan

(1) General

As of 1975, the respective population densities (persons/ha.) of the Rombo, Moshi, Hai and Pare districts were 320, 235, 97 and 25. Looking at population density by division, one sees that that of Moshi Town (1,660 person/ha.) is far higher than elsewhere, that there are several divisions with a density of over 300 persons/ha. on the slopes of Mt. Kilimanjaro, and that only Same has a fairly high population density in the Pare District. The population densities (persons/ha.) of the four districts in 1995 have been set as follows: Rombo, 520; Moshi, 392; Hai, 160; Pare, 45.

The present percentage breakdown of the region's population by district is: Moshi, 42.3%; Pare, 22.2%; Hai, 18.6%; and Rombo, 16.9%. As a result of population movement to the towns from rural areas and the policy of relocating overflow population of the other districts in Pare, the breakdown in 1995 will be: Moshi, 41.8%; Pare, 23.8%; Hai, 18.1%; and Rombo, 16.3%.

The populated areas of the region can be roughly classified into four categories in terms of population density:

(i) Urban areas, with 1,600-2,100 persons/km2, representing 9% of the region's populations;

(ii) High-density rural areas, with 450-800 persons/km2, in the Mt. Kilimanjaro highland zone, representing 50% of the region's population;

(iii) Medium-density rural areas, with 70-150 persons/km2, in the upper lowland zone and the Pare mountain zone, representing 30% of the region's population; and

(iv) Low-density rural areas, with fewer than 50 persons/km2, representing 11% of the region's population.

The population plan calls for a change in these figures to the following by 1995:

(i) 3,500-4,200 persons/km2 and 17% of the region's population;

(ii) 600-1,000 persons/km2 and 37% of the region's population;

(iii) 90-330 persons/km2 and 35% of the region's population; and

(iv) No change.

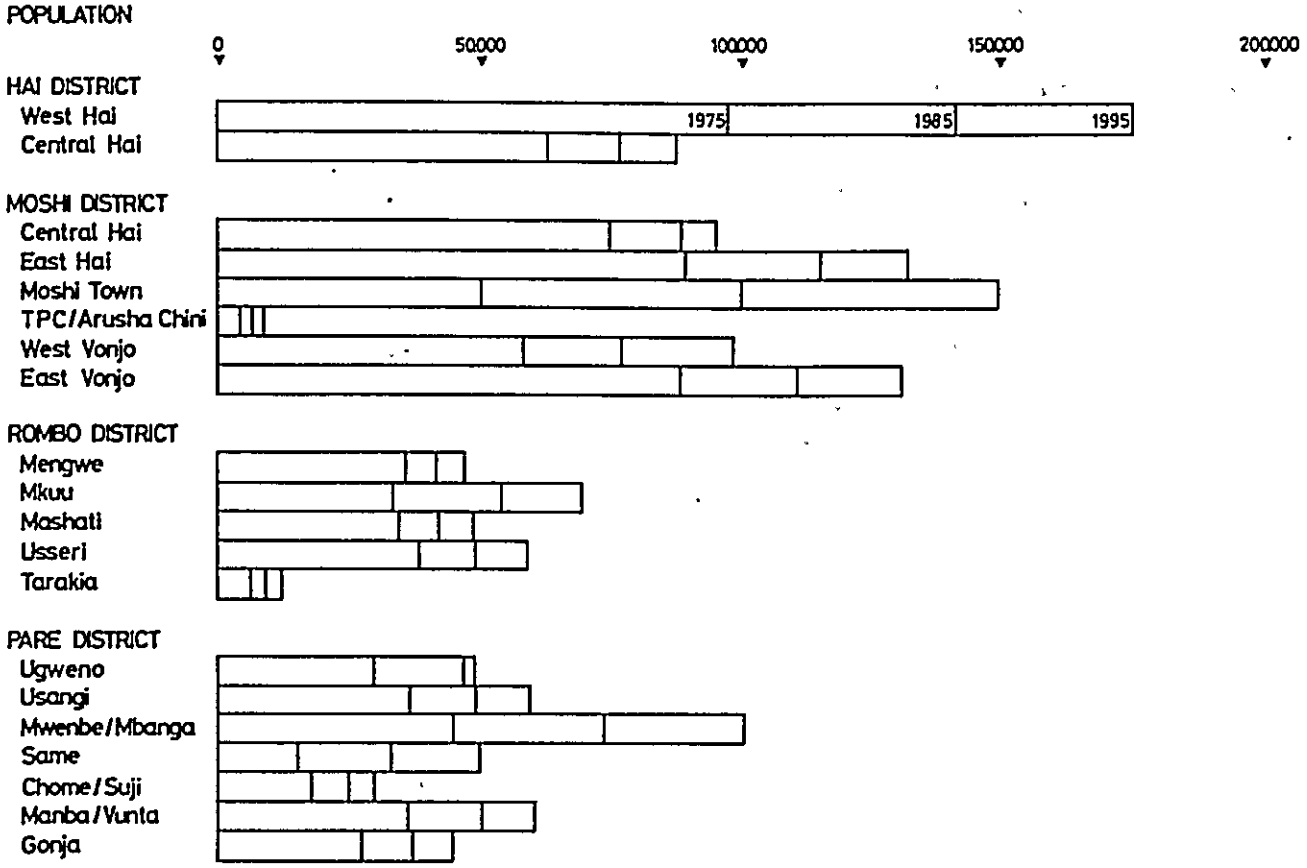
(2) Population Density Plan by Block

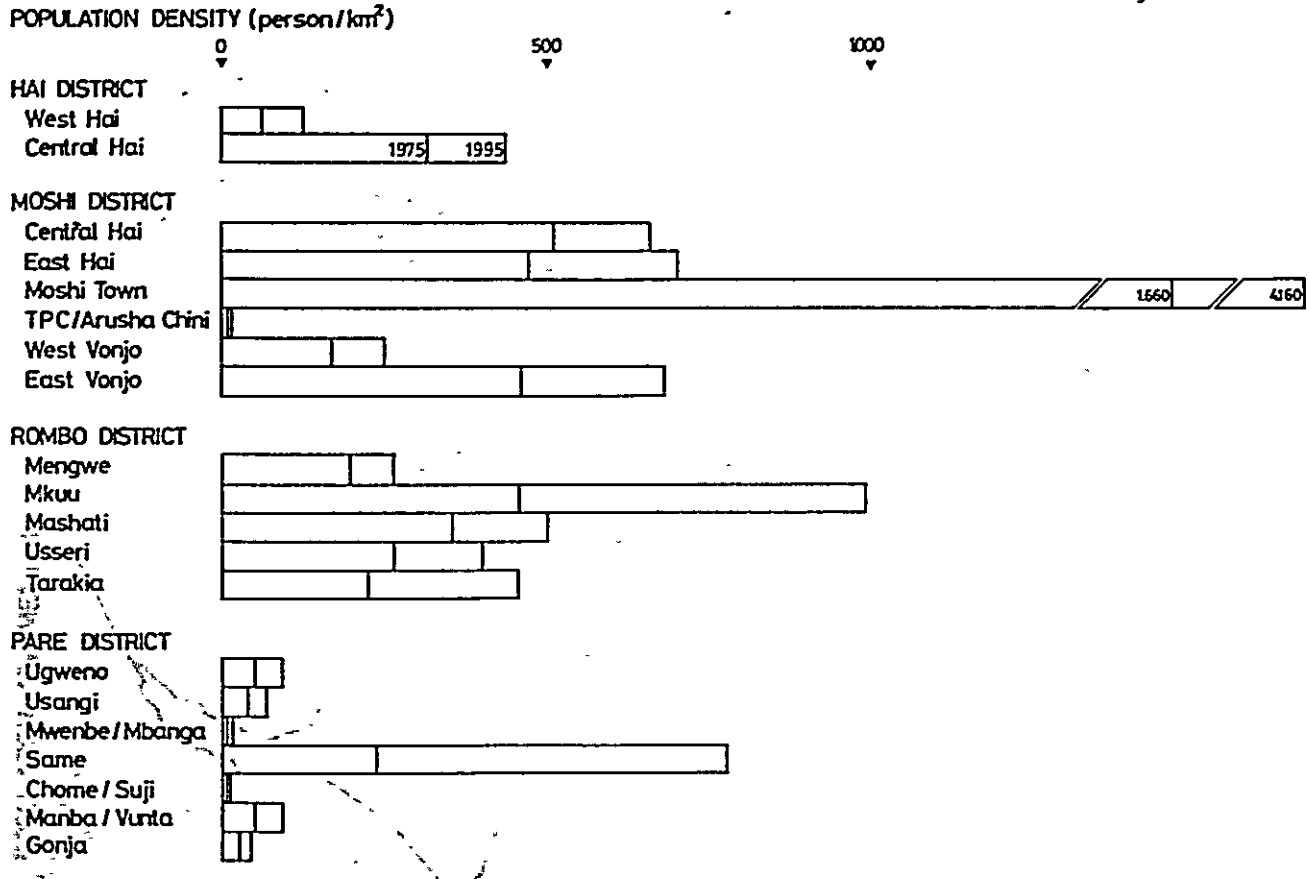
Blocks	1975 Population	1975 Density (person/km2)	1995 Population	1995 Density (person/km2)
Urban Areas				
Moshi Town	50,000	1,660	150,000	4,160
Same	15,000	2,140	50,000	3,500
Sanya Juu	5,000	2,080	25,000	3,500
Mkuu	5,000	2,080	25,000	4,000
High-density rural areas				
Hai highland	98,800	457	128,100	593
Moshi highland	242,800	796	297,500	975
Rombo highland	92,000	497	109,700	593
Medium-density rural areas				
Hai upper lowland	36,900	75	77,100	156
Moshi upper lowland	61,300	119	141,100	275
Rombo upper lowland	49,300	154	103,100	323
North Pare higland	49,000	137	81,700	228
South Pare highland	64,500	72	107,400	93
Low-density rural areas				
West Kilimanjaro	13,600	26	22,900	43
Sanya Plain	6,200	22	10,500	38
Moshi lowland	11,800	22	19,900	37
North Pare footland	9,500	19	16,000	33
Central Pare highland	3,700	19	6,000	31
Central Pare footland	4,300	17	7,300	29
South Pare footland	28,600	25	48,000	42
Mkomazi	1,600	0.8	2,700	1.3
Pangani	16,100	6	27,000	11

(3) Population Density Plan by Division

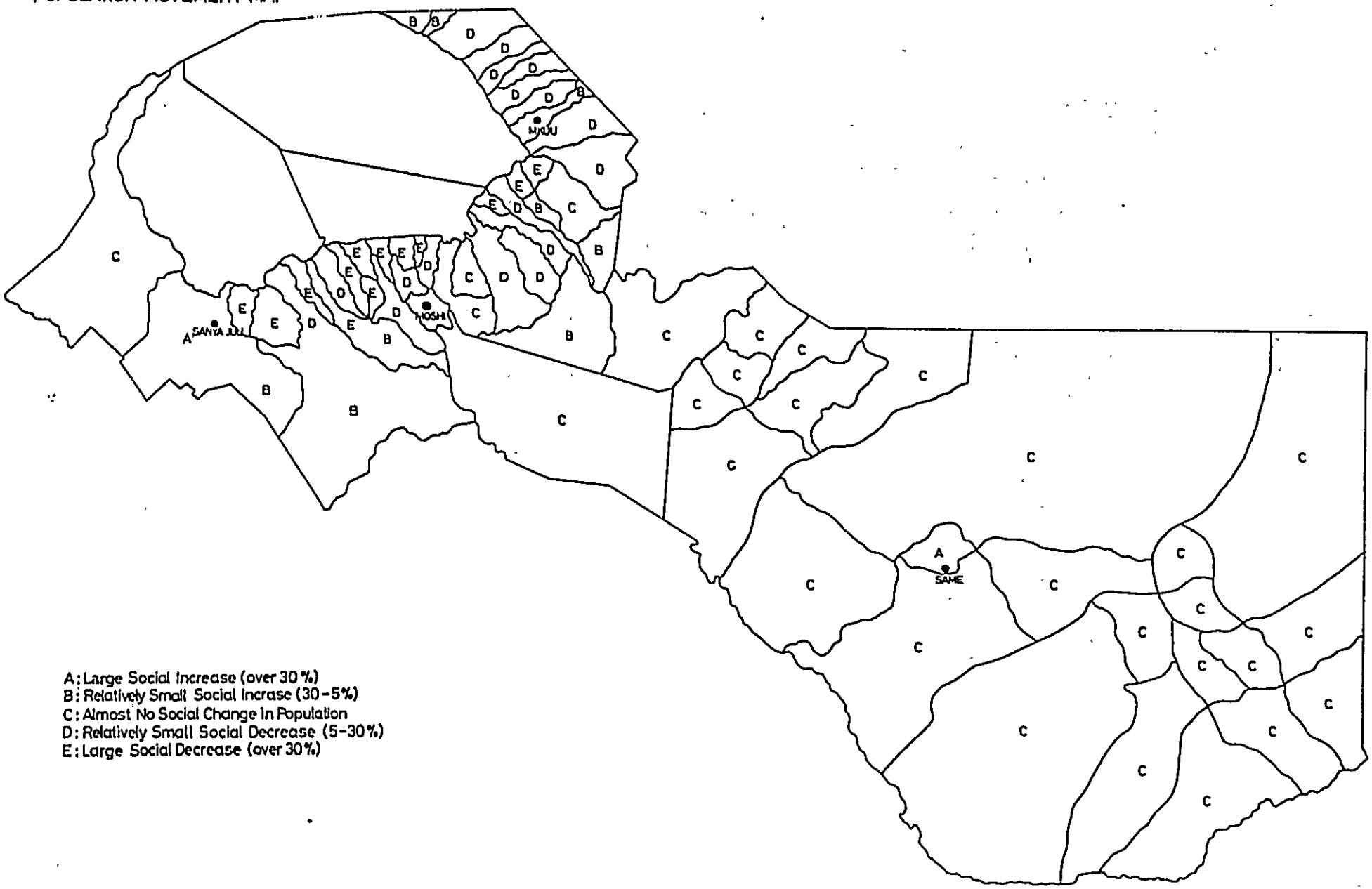
Divisions	1975 Population	1975 Density (person/km2)	1995 Population	1995 Density (person/km2)
Hai District	160,500	97	263,600	160
West Hai	97,492	67	175,609	122
Central Hai	63,052	311	87,991	433
Moshi District	365,895	235	608,500	392
Central Hai	74,902	517	95,495	659
East Hai	89,753	472	132,084	695
Moshi Town	50,000	1,660	150,000	4,160
TPC/Arusha Chini	4,818	8	8,095	13
West Vunjo	58,267	160	90,856	249
East Vunjo	88,154	457	131,970	684
Rombo District	146,272	320	237,800	520
Mengwe	34,970	191	47,265	258
Mkuu	32,961	460	70,003	986
Mashati	34,039	347	49,015	500
Usseri	38,208	258	58,969	398
Tarakia	6,094	218	12,548	448
Pare District	192,289	25	346,100	45
Ugweno	29,266	51	49,441	87
Usangi	36,214	41	60,287	68
Mwembe/Mbaga	30,451	11	50,689	18
Same	15,000	231	50,000	769
Chome/Suji	18,036	10	29,746	16
Mamba/Vunta	36,588	54	61,221	90
Gonja	26,734	27	44,716	45
Regional totals and averages	865,000	76	1,456,000	128

POPULATION GROWTH





POPULATION MOVEMENT MAP



A: Large Social Increase (over 30%)
B: Relatively Small Social Increase (30-5%)
C: Almost No Social Change in Population
D: Relatively Small Social Decrease (5-30%)
E: Large Social Decrease (over 30%)

3. SOCIAL INFRASTRUCTURE DEVELOPMENT PLAN

3.1 Outline

(1) Purpose

The area of the region must be classified into different categories for social infrastructure purposes on the basis of the land-use plan and the population distribution plan in order to make it possible to ensure a standard of living in the region that is adequate culturally and in terms of health as well as an adequate degree of functionalness of regional activities, and each category of area must be provided the kinds of public facilities that it needs.

(2) Contents

This plan consists of the following three elements:

(i) Social Infrastructure Diagnosis

This diagnosis, which also takes into account population distribution, makes it possible to identify problems and consider how they should be dealt with.

(ii) Area Classification for Development of Social Infrastructure

The region has been classified into 6 types of areas for social infrastructure purposes on the basis of planned population distribution, each type of area having its own standards for provision of social infrastructure.

(iii) Social Infrastructure Development Program

This program suggests strategy and sets targets as guidelines for social infrastructure development.

3.2 Social Infrastructure Diagnosis

(1) Evaluation Method

Diagnosis of the state of social infrastructure in the Kilimanjaro Region has been based on the following criteria.

Primary:

A Good road accessibility - within 1 km of trunk road or 500 m of feeder road

B Water supply areas - city water supply areas and areas within 500 m of domestic water pipeline

C Medical care service areas - within a radius of 4 km of hospital or health center and villages with dispensary

D Education service areas - villages with primary school

Secondary:

E Commercial service areas - within a radius of 4 km of open-air market or other commercial facility

F Electricity supply areas - covered areas

G Telephone service areas - covered areas

H Postal service areas - within a radius of 4 km of post office

J Bus service areas - within 2 km of a bus route

The areas have been ranked as follows according to which of the above criteria are satisfied in them.

Parking	Primary criteria				Secondary criteria				
Very good	A	B	C	D	E	F	G	H	J
Good	A	B	C	D	Any 2-4				
Fair	A	B	C/D		Not relevant to evaluation				
Poor	A	B/C/D							
Bad	None								

(2) Results of Diagnosis

The table below gives a percentage breakdown of the area of each district according to the above ranking, a map on a scale of 1:250,000 having been used for the analysis. As one can see, 30% of the land in the region with human settlement, i.e., areas other than regulated areas such as national park, game reserve, and forest reserve areas, has been ranked as "fair" or better. The order of the districts in terms of the percentage of land with at least this rank is Rombo (56%), Hai (38%), Moshi (37%), and Pare (22%). Urban areas are for the most part rated as

"very good," and Mt. Kilimanjaro highland areas as at least "good." In north Pare about half of the highland area is rated good, but in south Pare footland areas are on the whole rated better than highland areas (see "Social Infrastructure Diagnosis" map). Worthy of notice is the fact that a full 51% of the area of the region is rated as "bad."

Ranking	Hai	Moshi	Rombo	Pare	Whole region
Very good	3%	6%	5%	1%	2%
Good	16%	11%	25%	9%	12%
Fair	19%	20%	26%	12%	16%
Poor	28%	28%	30%	12%	19%
Bad	34%	35%	14%	66%	51%

(3) Problem Finding

The features and problems with respect to social infrastructure can be more concretely identified by comparing the present state of provision of such infrastructure and the distribution of population in 1975.

The matrix below indicates categories of social infrastructure adequacy as combinations of the above ranks of social infrastructure provision and different population densities (see "Human Settlement Program" map).

Population density (persons/km^2)	Social infrastructure evaluation				
	Very good	Good	Fair	Poor	Bad
Over 1,500	1	2	2	x	x
1,500-1,000	1	3	3	6	x
1,000-500	1	3	3	6	6
500-200	1	4	4	6	6
200-100	x	5	5	*	*
100-20	x	x	7	7	7
Under 20	x	x	x	8	8

* Areas with a "poor" or "bad" rating with respect to overall quantity of social infrastructure and a population density of 100-200 persons/km2 will be considered either as Category-6 areas or as Category-7 areas, depending on whether it is considered most advisable to promote villagization or to supply more social infrastructure urgently, the decisive factor being the extent to which what little population there is to be found in relatively high localized densities.

Approximately 13% of the total area of the region is included in categories 1-5 as areas in which the overall quantity of social infrastructure is at least "fair" and the population density is at least 100 persons/km^2. The order of the districts according to the percentage of their total areas included in these categories is: Moshi (25.0%), Rombo (16.4%), Hai (15.4%), and Pare (5.7%).

Areas in categories 5-8 are problem areas.

Areas in Category-6, which have a "poor" or "bad" social infrastructure rating and a population density of at least 100 persons/km^2, represent 3.6% of the total area of the region and are located particularly along the boundary of the Mt. Kilimanjaro forest reserve and in the upper lowland zone.

Areas in Category-7, which have a "fair," "poor," or "bad" social infrastructure rating and a low population density of 20-200 persons/km^2, represent 17.5% of the total area of the region and are located particularly along the boundary between the upper lowland and lowland zones and in the footland zone.

Areas in Category-8, which have only very scattered settlement and hence a population density of under 20 persons/km^2, represent 13.2% of the total area of the region and are located particularly in the footland zone.

Percentages of the Total Area of Each District and of the Whole Region Represented by Each Category of Social Infrastructure Adequacy

	Hai	Moshi	Rombo	Pare	Whole region
Category-1	2.4%	4.0%	1.6%	0.2%	1.2%
Category-2	0	0.2%	0	0	2.1%
Category-3	2.6%	9.7%	5.9%	0.9%	2.9%
Category-4	6.8%	4.7%	3.6%	2.5%	3.6%
Category-5	3.6%	6.4%	5.3%	2.1%	3.2%
Category-6	4.2%	15.1%	2.4%	1.1%	3.6%
Category-7	22.5%	23.0%	14.2%	15.5%	17.5%
Category-8	10.0%	2.3%	1.8%	18.5%	13.2%

(4) Recommendations

The following measures are proposed for each category for future improvement of social infrastructure adequacy:

Category-1 : Although the social infrastructure is adequate for present conditions, measures will have to be taken in order to be able to cope with future population increase and make it possible to raise standards of living

Category-2 : Social infrastructure needs to be raised to urban standards

Category-3 : Social infrastructure needs to be raised to high-density rural standards

Category-4 : Social infrastructure needs to be raised to medium-density rural standards

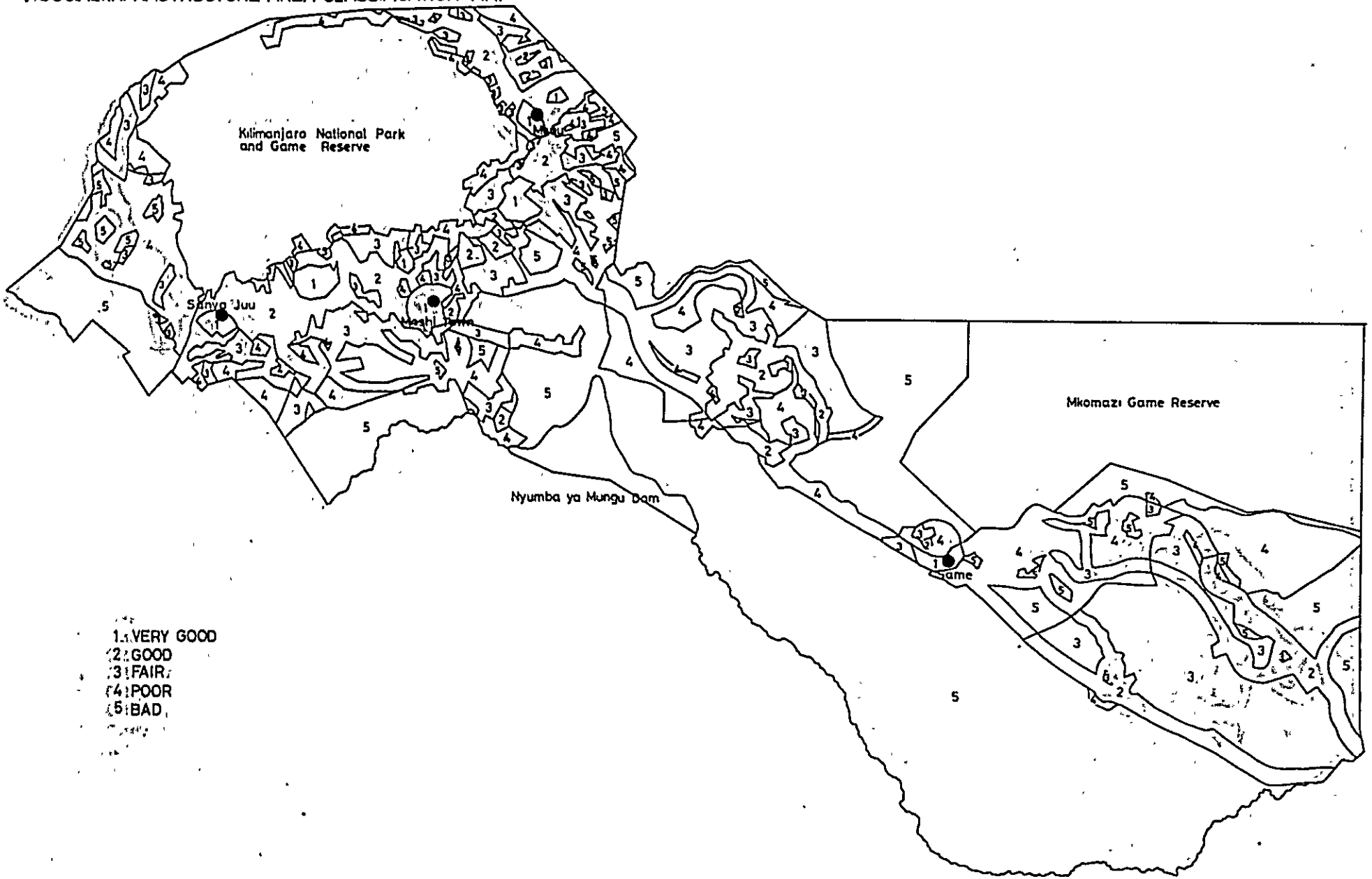
Category-5 : Social infrastructure needs to be raised to low-density rural standards

Category-6 : Improvement of social infrastructure urgently needed

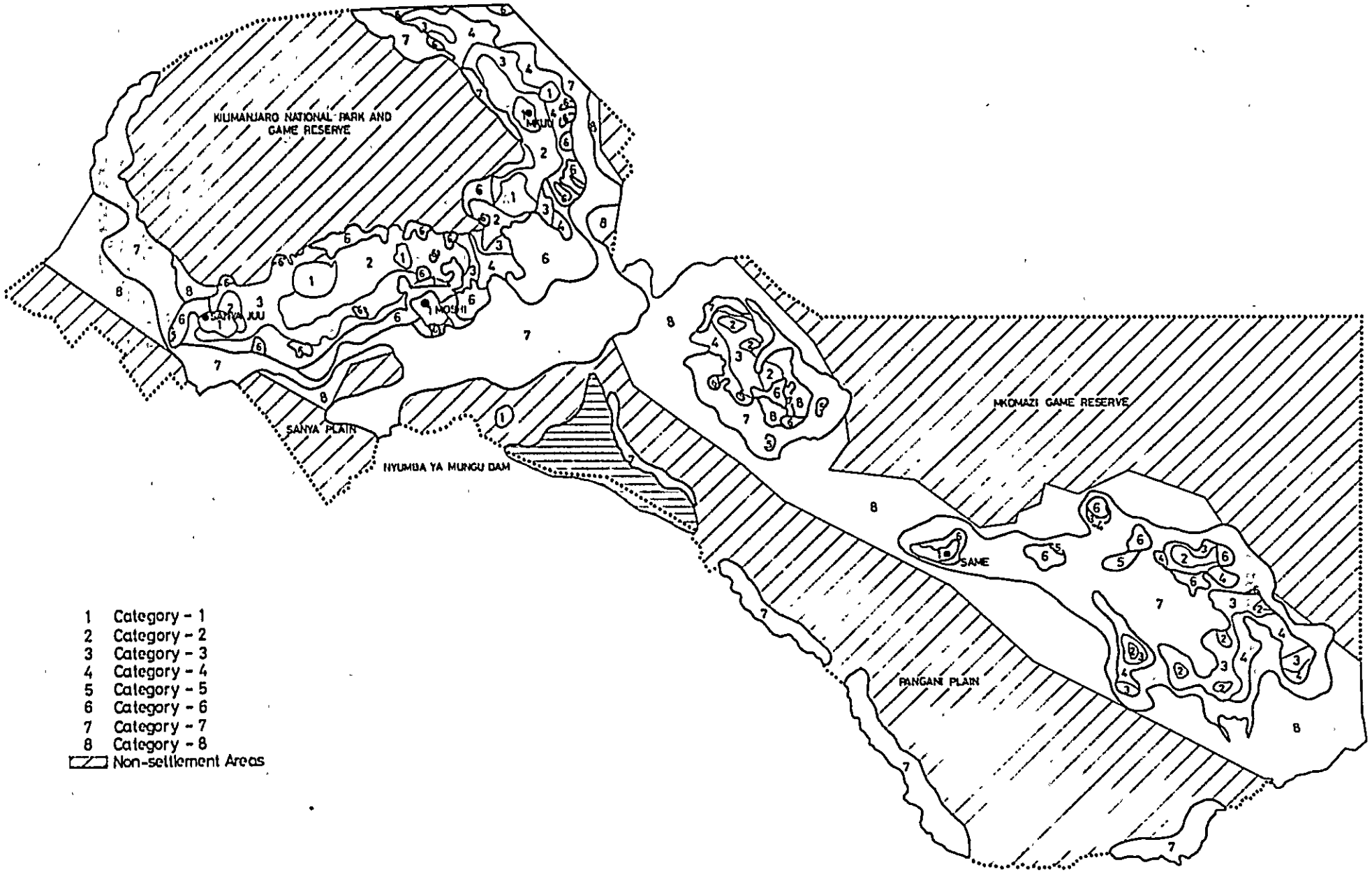
Category-7 : Villagization urgently needed, to be followed later by improvement of social infrastructure

Category-8 : Movement of population to areas with good social infrastructure

SOCIAL INFRASTRUCTURE AREA CLASSIFICATION MAP



HUMAN SETTLEMENT PROGRAM MAP



1 Category - 1
2 Category - 2
3 Category - 3
4 Category - 4
5 Category - 5
6 Category - 6
7 Category - 7
8 Category - 8
Non-settlement Areas

3.3 Area Classification for Development of Social Infrastructure

(1) General

The area of the region has been divided into the following categories for long-term development of social infrastructure on the basis of the land-use plan, the population distribution plan and the population density plan among other considerations.

- Social infrastructure improvement areas
  - Urban planning areas
    - Urban areas
    - Quasi-urban areas (15 division centers)
  - Rural areas
    - Very high density areas
    - High-density areas
    - Medium-density areas
    - Low-density areas
  - Special lowland projects
- Areas in which there will be no development of social infrastructure
  - Development control areas (Areas with less than 20 persons/km2)
  - Nonsettlement areas
    - National park
    - Game reserves
    - Forest reserves
  - Other areas in which social infrastructure will not be developed

(2) Area Classification

Social infrastructure will be developed to some extent or other in the zone, indicated below, which is comprised of the entirety of the highland, upper lowland, mountain, and footland zones of the Kilimanjaro Region, a small part of the lowland zone, and the 3 km-wide strips of land on both sides of trunk and regional roads in other areas, this zone constituting 26% of the total area of the region.

This zone is further broken down into the following 7 area classifications (see "Social Infrastructure Area Classification" map):

(i) Urban areas

This classification consists of the main towns of each district, i.e., Moshi, Same, Sanya Juu, and Mkuu, the population density in each case being over 3,500 persons/km2.

(ii) Quasi-urban areas

These are the 15 division centers listed below, the average area of which will be 1 km2 and the density of which will be over 2,000 persons/km2:

Hai	Moshi	Rombo	Pare
Masama	Kibosho	Mengwe	Ugweno
Machame	Uru	Mashati	Usangi
	Kirua	Usseri	Mwembe
	Marangu		Makanya
			Gonja

(iii) Very high density rural areas

These are highland areas on Mt. Kilimanjaro which are expected to have population densities in excess of 1,000 persons/km2 in the future.

(iv) High-density rural areas

These are highland areas in both the Mt. Kilimanjaro area and the Pare District which are expected to have population densities in the range 500-1,000 persons/km2.

(v) Medium-density rural areas

These are upper lowland and Pare highland areas that are expected to have population densities in the range 200-500 persons/km2.

(vi) Low-density rural areas

These are upper lowland and Pare footland areas that are expected to have populations densities in the range 100-200 persons/km2.

(vii) Development control areas

These are areas with only scattered settlement and population densities of under 100 persons/km2 in which there will be no infrastructural development before 1995.

The following table gives the areas and populations for each of these area classifications in 1975 and 1995 as well as for 3 other classifications. The first 6 classifications, the areas of which will be provided more social infrastructure, account for 20.4% of the region's total area and 93.8% of its population.

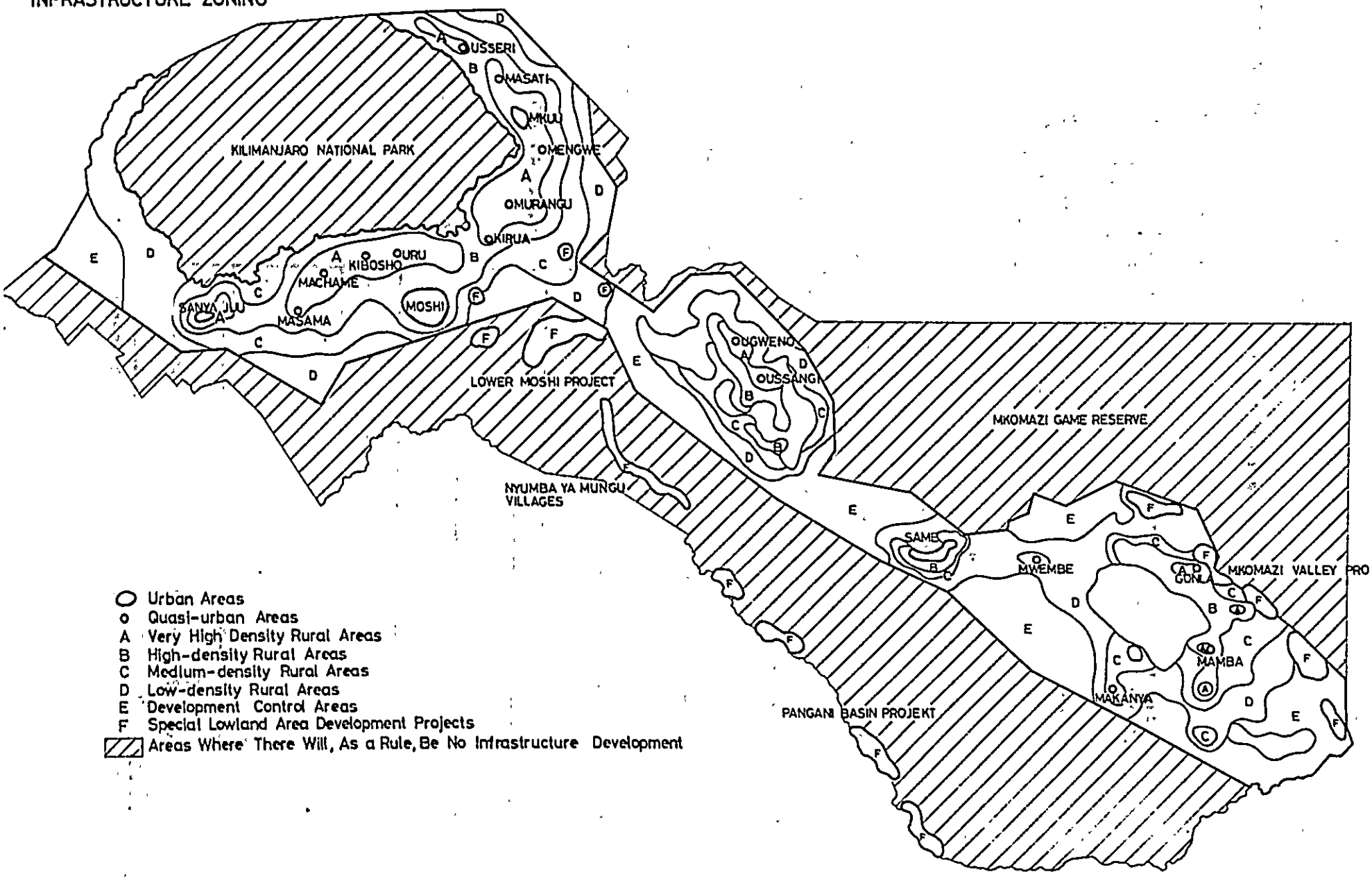
	Zones	Area (km^2) 1975	Area (km^2) 1995	Population 1975	Population 1995
1.	Urban areas	41.9 (0.3%)	63.8 (0.5%)	75,000 (8.7%)	250,000 (17.2%)
2.	Quasi-urban areas	2.6 (-)	15.0 (0.1%)	5,000 (0.6%)	30,000 (2.1%)
3.	Very high density rural areas	142.5] (1.1%)	414.0 (3.1%)	162,800 (18.8%)	419,000 (28.8%)
4.	High-density rural areas	394.5 (3.0%)	640.5 (4.8%)	269,100 (31.1%)	388,000 (26.6%)
5.	Medium-density rural areas	590.0 (4.5%)	684.0 (5.2%)	184,800 (21.4%)	180,000 (12.4%)
6.	Low-density rural areas	716.5 (5.4%)	879.0 (6.7%)	97,500 (11.2%)	98,000 (6.7%)
7.	Development control areas	-	747.5 (5.7%)	-	13,000 (0.9%)
8.	Very low-density rural areas	4,928.7 (37.3%)	-	70,800 (8.2%)	-
9.	Special lowland projects	-	107.0 (0.8%)	-	78,000 (5.3%)
10.	Other areas	6,392.3 (48.4%)	9,658.2 (73.1%)	0	0
	Totals	13,209.0	13,209.0	865,000	1,456,000

Breakdown of Population by District, 1995

	Zones	Hai	Moshi	Rombo	Pare
1.	Urban areas	25,000 (9.5%)	150,000 (24.7%)	25,000 (10.5%)	50,000 (14.5%)
2.	Quasi-urban areas	4,000 (1.5%)	8,000 (1.3%)	6,000 (2.5%)	12,000 (3.5%)
3.	Very high density rural areas	71,000 (26.9%)	225,000 (37.0%)	89,000 (37.4%)	34,000 (9.8%)
4.	High-density rural areas	82,000 (31.1%)	134,000 (22.0%)	81,000 (34.0%)	91,000 (26.3%)
5.	Medium-density rural areas	52,000 (19.7%)	46,000 (7.6%)	27,000 (11.3%)	55,000 (15.9%)
6.	Low-density rural areas	24,000 (9.1%)	17,000 (2.8%)	10,000 (4.3%)	47,000 (13.5%)
7.	Development control areas	6,000 (2.2%)	0	0	7,000 (2.0%)
8.	Special lowland projects	0	28,000 (4.6%)	0	50,000 (14.5%)
	Totals	264,000	608,000	238,000	346,000

Breakdown of Area by District, 1995 (unit:km^2)

	Zones	Hai	Moshi	Rombo	Pare
1.	Urban areas	7.2 (0.3%)	36.0 (2.0%)	6.3 (0.4%)	14.3 (0.2%)
2.	Quasi-urgan areas	2.0 (0.1%)	4.0 (0.2%)	3.0 (0.2%)	6.0 (0.1%)
3.	Very high density rural areas	70.8 (3.4%)	226.0 (12.8%)	87.0 (6.1%)	30.2 (0.4%)
4.	High-density rural areas	135.0 (6.4%)	207.0 (11.7%)	133.5 (9.3%)	165.0 (2.0%)
5.	Medium-density rural areas	185.0 (8.8%)	153.0 (8.7%)	95.5 (6.7%)	250.5 (3.2%)
6.	Low-density rural areas	240.0 (11.3%)	131.5 (7.5%)	80.5 (5.6%)	427.0 (5.4%)
7.	Development control areas	130.0 (6.2%)	0	0	617.5 (7.8%)
8.	Special lowland projects	0	43.0 (4.5%)	0	64.0 (1.0%)
9.	Others	1,339.8 (63.5%)	963.7 (52.6%)	1,029.2 (71.7%)	6,325.5 (79.9%)

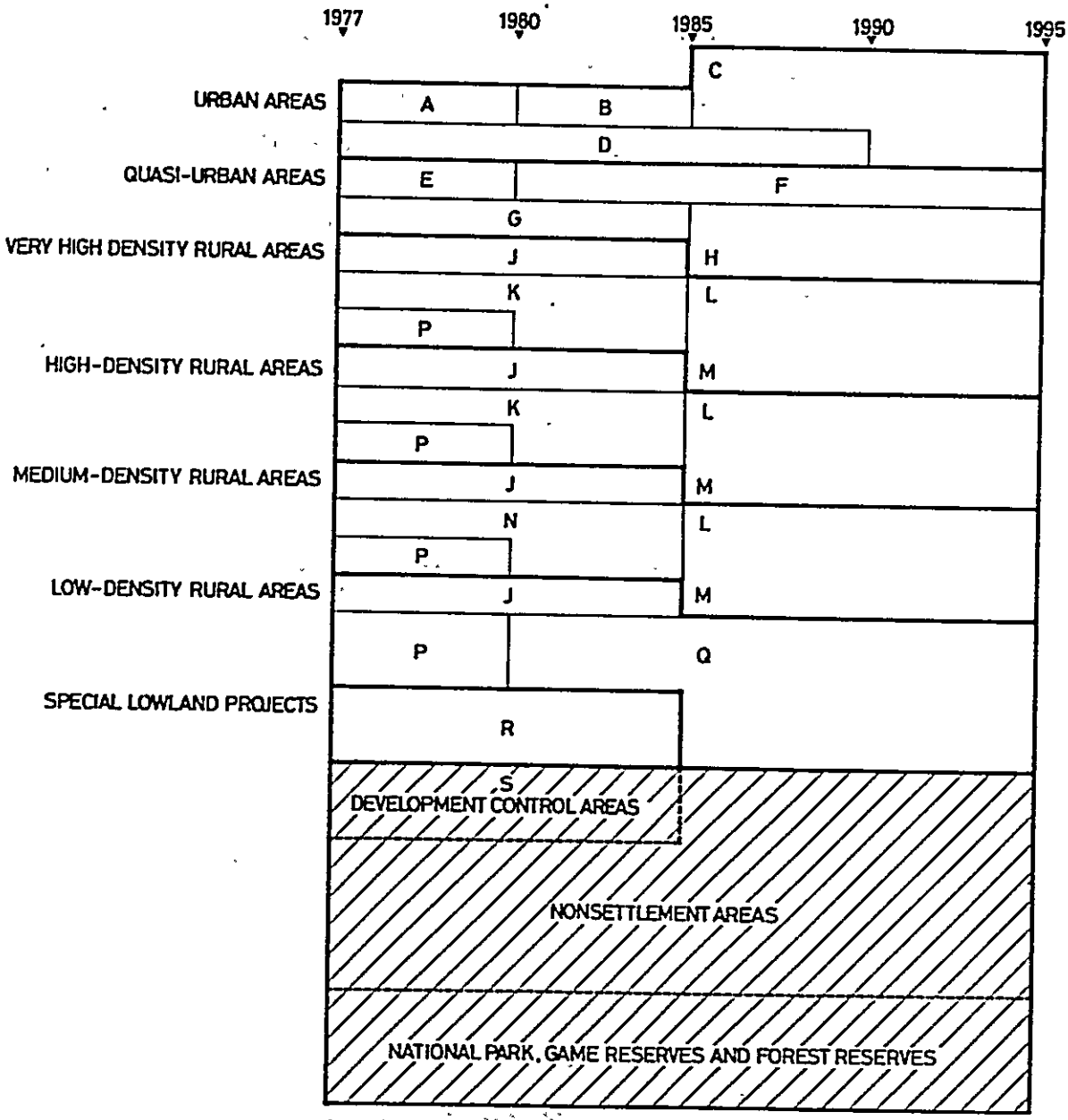

INFRASTRUCTURE ZONING
USSERI
MASATI
MKUU
OMENGWE
KILIMANJARO NATIONAL PARK
OMURANGU
OKIRUA
KIBOSHO
OURU
MACHAME
SANYA JUU
MASAMA
MOSHI
LOWER MOSHI PROJECT
OUGWENO
OUSSANGI
MKOMAZI GAME RESERVE
NYUMBA YA MUNGU VILLAGES
SAME
MWEMBE
GONJA
MKOMAZI VALLEY PRO
MAMBA
MAKANYA
PANGANI BASIN PROJEKT
Urban Areas
Quasi-urban Areas
A Very High Density Rural Areas
B High-density Rural Areas
C Medium-density Rural Areas
D Low-density Rural Areas
E Development Control Areas
F Special Lowland Area Development Projects
Areas Where There Will, As a Rule, Be No Infrastructure Development

3.4 Social Infrastructure Development Program

(1) Development Strategies

The social infrastructure development program will consist of four phases: Phase-1, 1977-80; Phase-2, 1981-85; Phase-3, 1986-90; and Phase-4, 1991-1995.

The following diagram outlines the development strategies for each of the area classifications in 3.3 above in each of these phases.



Areas in which there will be no development of social infrastructure

Social infrastructure development targets by Plans

A	Raising the rate of provision of infrastructure
B	Accommodation of population inflow through utilization of yet unused land within the township
C	Extension of township boundaries and systematic accommodation of population inflow
D	Integration and strengthening of urban functions and redevelopment of C.B.D.
E	Designation of township and physical identification
F	Promotion of formation of rural community services
G	Concentrated provision of social infrastructure as bases for spread to rural areas
H	Designation of additional quasi-urban areas
J	Implementation of pilot village projects
K	Upgrading of infrastructure and maximization of land use
L	Spread of the effects of pilot village projects to surrounding areas
M	Extension of designated areas
N	Provision of infrastructure and extension of farmland
P	Improvement of social infrastructure urgently needed
Q	Gradual expansion of infrastructure and concentration of it through villagization
R	Implementation of lowland agricultural development projects
S	Migration to areas in other categories through villagization

(2) Social Infrastructure Development Targets by Phase

The table below gives the development targets for each phase for each item of social infrastructure in terms of various percentages as explained in the remarks.

	Items	Present	By 1980	By 1985	By 1990	By 1995
1.	Primary schools	94%	100%	100%	100%	100%
2.	Dispensaries	27%	42%	56%	78%	100%
3.	Multi-purpose stores	50%	70%	83%	100%	100%
4.	Feeder roads					
5.	Bus service	92%	94%	96%	98%	100%
6.	Telephone service	4.2%	4.7%			15%
7.	Postal service					
8.	Water supply	39.4%	66.7%	83.4%	100%	100%
9.	Electricity supply	1.9%	2.8%	6.5%	9.3%	15.9%
10.	Sanitary sewerage	20%	35%	50%	70%	90%
11.	Waste disposal					

Remarks:
1) % of villages with primary school
2) % of villages with dispensary
3) % of villages with multi-purpose store
4) % of population with good road accessibility, i.e., living within 500 meters of feeder or other road
5) % of population serviced by bus transportation, i.e., living within 5km (1975), 4km (1980), 3km (1985), 2km (1990) or 1km (1995) of a bus route
6) Number of telephones per 1,000 persons
7) Number of post offices per 10,000 persons
8) % of population serviced by piped water
9) % of population serviced by electricity
10) % of urban population serviced
11) % of urban population serviced

(v) Water Supply

The following table gives water accessibility standards for different areas of the region.

Distance to water tap	Distribution system	Type of area
0m	Private house connection	4 towns and 15 division centers
Less than 250m	Cluster connection	High-density rural areas
Less than 500m	Domestic water point	Medium-density rural areas
Less than 1,000 m	"	Low-density rural areas

The following table gives the percentages of urban population that will be supplied with purified water by private house connections by the different target years.

	Present	By 1980	By 1985	By 1990	By 1995
Moshi town	60%	78%	88%	100%	100%
Same	40%	68%	89%	100%	100%
Sanya Juu & Mkuu	0	0	0	100%	100%
Division centers	0	0	0	0	100%
All urban areas	45%	57%	65%	86%	100%

The following is the schedule for improvement of the type of water supply for urban and high-density rural areas.

	Present	By 1980	By 1985	By 1990	By 1995
Sanya Juu & Mkuu	A	A	B	C	C
Division centers	A	A	A	B	C
High-density rural areas	A	A	A	A	B

Remarks: A Domestic water stands

B Cluster connections

C Private house connections

The following table gives the percentages of rural population in different areas that will have water supply connections within 500m by each target year.

	Present	By 1980	By 1985	By 1990	By 1995
High-density areas	60%	80%	100%	100%	100%
Medium-density areas	30%	60%	80%	100%	100%
Low-density areas	10%	40%	60%	100%	100%
All rural areas	38.1%	65.8%	86.5%	100%	100%

(vi) Sanitary Sewerage

The following table gives the percentage of the population of each town that will be serviced by a sanitary sewerage system by each target year.

	Present	By 1980	By 1985	By 1990	By 1995
Moshi Town	30%	48%	65%	83%	100%
Same	0	25%	50%	75%	100%
Sanya Juu & Mkuu	0	0	0	25%	50%
Average for the 4 towns	20%	35%	50%	70%	90%

4. COMMUNITY DEVELOPMENT PROGRAM

4.1 Description of the Program

(1) The purpose of the community development program is to serve as a guideline for the formation of orderly, dynamic, and viable communities on different levels on the basis of a long-range perspective of the socioeconomic development of the region. This will involve, among other things, the following:

(i) Having urban and rural areas complement each other closely in terms of function;

(ii) Identification and establishment of the functions of each community level;

(iii) Systematic linkage between different levels in the community hierarchy; and

(iv) Vital interaction between communities on the same level.

(2) Contents

The Community Development Program consists of the following 3 elements, each of which is used for a different purpose:

(i) Community Hierarchy
A community hierarchy congruous with the administrative hierarchy and consisting of 5 levels, each well defined in terms of content.

(ii) Community Plan
A community plan showing the extent of each community on each community level and the location of the center of each.

(iii) Public Facilities Distribution Plan
A plan indicating the location of administrative, educational, medical and health, commercial, communications facilities in each community and particularly in its center.

4.2 Community Hierarchy

(1) General

The community hierarchy of the Kilimanjaro Region will be established as follows.

The purpose of establishing such a community hierarchy is to plan for improvement of the quality of life at each community level, including greater provision of social and public services in both quantitative and qualitative terms, and to further the interaction of inhabitants of different parts of the region.

(i) The village-level community, (pop. 3,500) with a radius of about 2 km and in which most of the activities of daily life take place.

(ii) The ward-level community, (pop. 20,000) with a radius of 3-5 km.

(iii) The division-level community, (pop. 80,000) with a radius of 4-13 km.

(iv) The district-level community, with a radius of 20-35 km.

(v) The regional-level community, with a radius of 50-150 km.

(2) Village-level Community

Communities on this level, of which 81 have been established in the Hai District, 143 in the Moshi District, 56 in the Rombo District, and 122 in the Pare District, will each have a future average service population of about 3,500 persons around a village center. Here "village" signified the registered village, which is the basis administrative unit.

The village center will have a village office, a primary school, a multi-purpose store facility, shops, a post vender, and water supply facilities, which represent the smallest units of administrative, educational, distribution, commercial, communication, and utility services, respectively, in the region.

In addition to a general and thorough upgrading of public services in both quantitative and qualitative terms for the sake of vitalization of daily life on the village level, villagization efforts will be made in areas where the population is scattered so that a greater percentage of the population can be serviced, this being one of the goals, for instance, of the lowland agricultural and fishing pilot projects.

(3) Ward-level Community

Communities on this level, of which there are 10 in the Hai District, 29 in the Moshi District, 11 in the Rombo District, and 25 in the Pare District, will consist on the average of five village-level communities will each have a future average service population of about 20,000 persons around a ward center which will not only be provided with such facilities as a ward office (municipal office instead in the case of Sanya Juu in the Hai District, Mkuu in the Rombo District, and Same in the Pare District), open-air market, bus stop, subdepartmental post office, and telephone sub-exchange, but will also function as a node for linkage with wider-area communities.

(4) Division-level Community

Communities on this level will consist on the average of four ward-level communities and will each have a future average service population of about 80,000 persons around a division center-Masama and Machame in the Hai District; Kibosho, Uru, Kirua, and Marangu in the Moshi District; Mengwe, Mashati, and Usseri in the Rombo District; and Ugweno, Usangi, Mwenbe, Makanya, Ndungu and Gonja in the Pare District.

Among the division center facilities will be a division office (a municipal office instead in the case of the Moshi Town division), a comprehensive community center which includes a library and health and sanitation facilities, family planning and education facilities, adult education facilities and cultural facilities--all of which are embodied in the present "health center"--as well as a divisional hospital for the collection of comprehensive information on the state of health of the inhabitants of the region, for medical care, and for the training of personnel to man the dispensaries in the region, a secondary school for the education of young people and for raising the cultural level of the region, a trading subcenter, a shopping center, and bus stops.

The medical, distribution and similar facilities will make it possible for the division center to function as a nodal point for linkage with the higher-level communities, and the secondary school, shopping center, and community center will contribute to the raising of the cultural level of the region and the vitalization of its amenities.

(5) District-level Community

Communities on this level will consist of 3-6 division-level communities and will have a future service population of 200,000-600,000 persons around a district center-Sanya Juu in the Hai District, Mkuu in the Rombo District, Same in the Pare District, and Moshi Town in the Moshi District, the last serving both as the regional center and as the Moshi district center.

As facilities servicing the whole district-level community, the district center will have a district office, a bus terminal, a trading center, a wholesale facility, a shopping center, a departmental post office, a district telephone exchange, and a district hospital which will also serve as a base for mobil clinics. As facilities serving only the immediate urban population, the district center will a municipal office, bus stops, a sub-departmental post office, primary schools, a health clinic, a divisional hospital, a fresh water supply network, power supply facilities, a sanitary sewer system, and a sewage treatment plant.

Besides affording the district-level community high-level adminstrative, cultural, commercial, medical care, health and other services, the district center will also serve as a base for inter-district relations.

(6) Regional-level Community

This community, which represents the whole of the Kilimanjaro Region, will have a population of 1,456,000 persons in 1995. Its center, the "regional center," will be Moshi Town, which will have a regional office, a major telephone exchange, a head post office, a police station, a regional trading center, a regional bus terminal, vocational schools, a regional hospital, and so on.

Facilities of this sort will make it possible to promote interaction between the different areas of the region and improve the regionfs informational, physical, cultural, and educational capabilities, including centralization of physical and informational control on both the regional and interregional levels (i.e., vis-a-vis Arusha, Tanga, Dar es Salaam, Dodoma, etc.) and the trading of specialists.

4.3 Community Plan

(1) Number of Communities

In setting the boundaries of the communities on each level, administrative boundaries have served as a basis, but consideration has also been given to compactness and optimum extent.

Although there are only 4 districts in the region, 5 communities have been set on the district level, 2 of them in the Pare District. The North Pare community consists of the Ugweno and Usangi divisions and the South Pare community of the Same, Mwembe, Chome/Suji, Mamba/Vunta, and Gonja divisions. The reason why the Pare District has been divided into two district-level communities is that the two are not contiguous and are also distinct from one another in terms of population distribution and terrain.

There are 19 division-level communities, consisting of the areas around the four towns of Moshi, Same, Sanya Juu, and Mkuu and the 15 division centers. The difference between this classification and the administrative classification is that the West Hai Division has been divided into two communities because of its extensive size and the Tarakea Division in the Rombo District has been incorporated in the same community as the Usseri Division because it is too small to constitute a community on this level on its own.

The ward-level and village-level communities coincide completely with their administrative counterparts.

The numbers of the communities on each level are in the table below.

Community levels	Hai	Moshi	Rombo	North Pare	South Pare	Totals
District	1	1	1	1	1	5
Division	3	5	4	2	5	19
Ward	11	29	11	8	17	76
Village	80	143	56	49	73	402

(2) Planned Community Structure

District-level communities	Division-level communities	Division centers	Population, 1995	No. of wards
Hai	West Hai	Sanya Juu *	106,800	4
	Masama	Masama	68,800	3
	Central Hai	Machame	88,000	4
			263,600	11
Moshi	Central Hai	Kibosho	95,500	5
	East Hai	Uru	132,100	6
	Moshi Town	Moshi Town *	158,000	7
	West Vunjo	Kirua	90,900	4
	East Vunjo	Marangu	132,000	7
			608,500	
Rombo	Mengwe	Mengwe	47,300	2
	Mkuu	Mkuu *	70,000	2
	Mashati	Mashati	49,000	3
	Usseri	Usseri	71,500	4
			237,800	11
North Pare	Ugweno	Ugweno	49,400	4
	Usangi	Usangi	60,300	4
			109,700	8
South Pare	Same	Same *	50,000	2
	Mwembe	Mwembe	50,700	3
	Chome/Suji	Makanya	29,800	4
	Mamba/Vunta	Ndungu	61,200	5
	Gonja	Gonja	44,700	3
			236,400	

* Also serves as district center.

(3) Community List

District-level communities	Division-level communities	Ward-level communities	No. of village-level communities
Hai	1. Sanya Juu	Olmologu	8 (34)
		Nairobi	8
		Central Siha	14
		East Siha	4
	2. Masama	West Masama	9 (12)
		East Masama	5
		South Masama	8
	3.Machame	West Machame	5 (24)
		North Machame	4
		East Machame	9
		South Machame	6
Moshi	4. Kibosho	West Kobosho	8 (28)
		Central Kobosho	10
		East Kibosho	3
		Machame Kindi	4
		Kirema	3
	5. Uru	North Uru	4 (27)
		Uru Shimbwe	2
		East Uru	7
		Uru Mawella	6
		West Old Moshi	6
		East Old Moshi	8
	6. Moshi Town	Moshi North	
		Moshi East	
		Moshi South-A	
		Moshi South-B	
		Moshi Central	
		Moshi Pasua	
		Arusha Chini	15
	7. Kirua	West Kirua Vunjo	8 (32)
		East Kirua Vunjo	4
		Kilema	11
		Kahe	9
	8. Marang	West Marang	7 (35)
		East Marang	7
		North Maniba	4
		South Maniba	4
		North Mwika	5
		South Mwika	5
		Mwika Makuyuni	3

District-level communities	Division-level communities	Ward-level communities	No. of village-level communities
Rombo	9. Mengwe	West Mengwe	8 (14)
		East Mengwe	6
	10. Mkuu	West Mkuu	6 (12)
		East Mkuu	6
	11. Mashati	South Mashati	5 (13)
		North Mashati	4
		Mashat Olele	4
	12. Usseri	South Usseri	3 (17)
		Central Usseri	8
		North Usseri	4
		Tarakia	2
North Pare	13. Ugweno	Kileo	4 (22)
		Mwanga	5
		Msangeni	7
		Kifula	6
	14. Usangi	Lembeni	11 (21)
		Kighare	4
		Kilongwe	9
		Kwakoa	3
South Pare	15. Same	Kirya/Mbaga	4 (12)
		Same	2
		Mwembe	6
	16. Mwembe	Mshewa	5 (10)
		Kisiwani/Msindo	5
	17. Makanya	Makanya	3 (13)
		Chome	4
		Suji	3
		Hedaru	3
	18. Mamba	Bwambo	6 (20)
		Mwemba	3
		Vunta	4
		Bendera	3
		Ndungu	4
	19. Gonja	Vuje	4 (18)
		Mtii	7
		Gonja/Maore	7

4.4 Public Facility Distribution Plan

(1) General

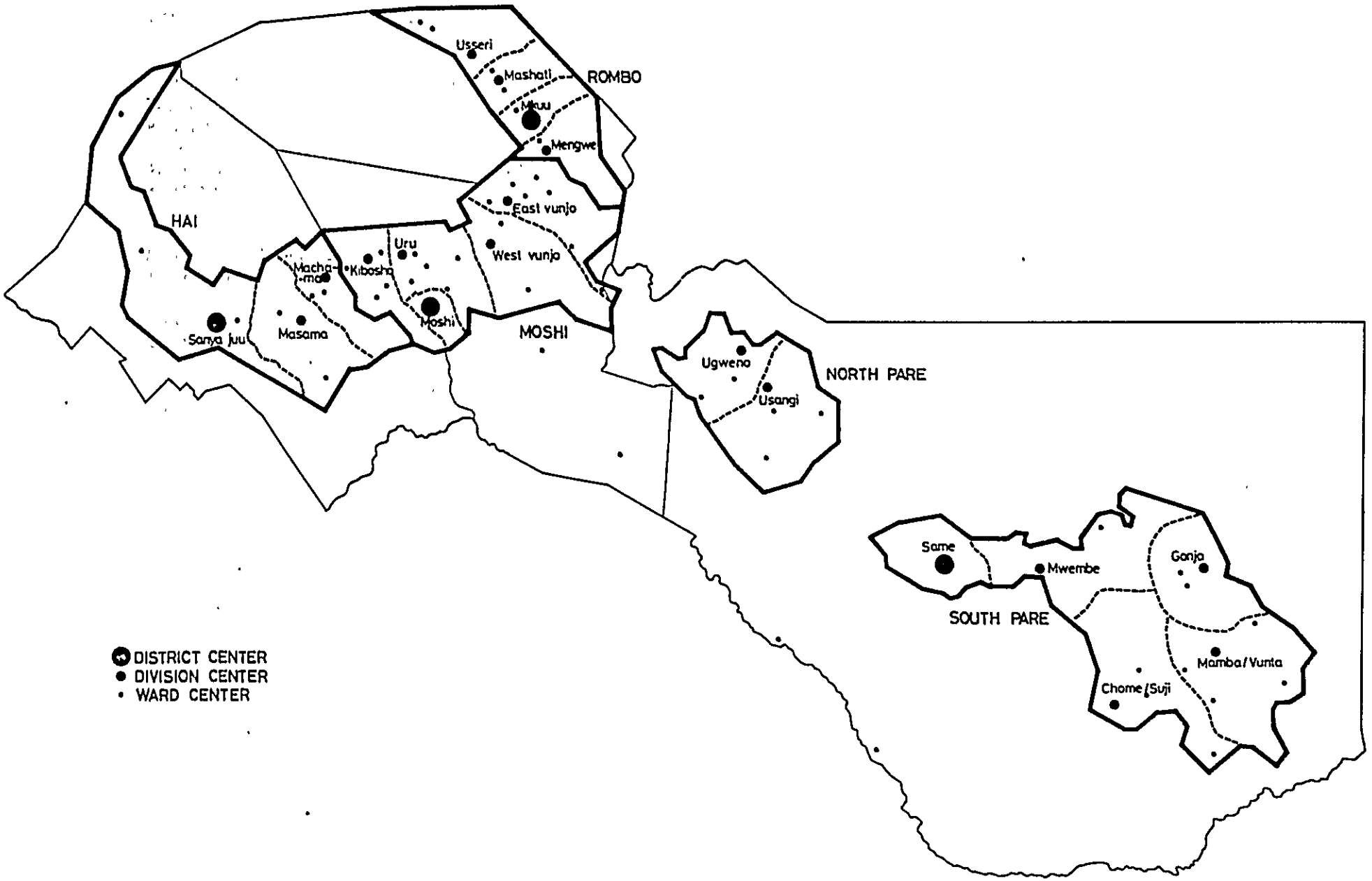
The following public facilities will be provided on the various community levels above the village level:

- Administrative offices
- Medical and health facilities
- Educational and cultural facilities
- Commercial facilities
- Postal and telephone facilities

Here we shall consider the allocation of such facilities between the different community levels, their location, and when they should be provided, descriptions of the facilities being given elsewhere.

See the volume "Sectoral Development: Town and Village" regarding urban facilities and facilities on the village level.

COMMUNITY PLAN



(2) Standard Social Infrastructure Requirements on Each Community Level

Community: Population: Radius:	Regional level 1,450,000 100 km	District level 250,000-600,000 25-35 km	Division level 30,000-100,000 5-13 km	Ward level 10,000-30,000 3-6 km
Administrative facilities	Regional office (RDD)	District office (DDD)	Division office (Municipal office of Moshi Town)	Ward office (Municipal offices of other 3 Towns)
Medical and health facilities	Regional hospital	District hospital (mobile clinic)	Division hospital Health center	
Educational and cultural facilities	Vocational school Regional library	District library	Secondary school	
Commercial facilities	Regional trade center	Trade center, Wholesale facility	Trade subcenter Shipping center	Open-air market
Postal and telephone service facilities	Head post office Regional telephone exchange	Departmental post office District telephone exchange		Subdepartmental post office TElephone sub-exchange

(3) Administrative offices

	Hai	Moshi	Rombo	Pare
Regional office	-	Moshi town	-	-
District offices	Sanya Juu	-	Mkuu	Same
Division offices	Masama Machame	Kibosho Uru Kirua Mamba	Mengwe Mashati Usseri Tarakea	Msangeni Kilaweni Mwembe Makanya Mamba Maore
No. of word offices	10	29	11	25
No. of village offices	81	143	56	122

(4) Medical Care Facilities

(i) Regional hospital
The existing Kilimanjaro Christian Medical Center (K.C.M.C.) should be elevated in rank to a "regional hospital" as well as having its facilities and equipment improved.

(ii) District hospitals
The existing hospitals in Sanya Juu, Mkuu, and Same should be upgraded to "district hospitals," which will also entail improvement of their facilities and equipment.

(iii) Division hospitals

Present		By 1980	By 1985		By 1995	
Central Hai	H*		West Hai	H	West Hai	H
Central Hai	M		East Hai	M	Moshi	M
Moshi	M		Mengwe	R	West Vunjo	M
(TPC.	M)		Usseri	R	Mkuu	R
East Vunjo	M*		Chome/Suji	P	Mashati	R
Usangi	P				Ugweno	P
Mamba/Vunta	P*				Mwembe/Mbanga	P
					Mwembe/Mbanga	P
					Gonja	P
7		0	5		9	

By 1995 there will be a division hospital in each of the fifteen division centers as well as one in each of the three district centers and two in the regional center, Moshi Town.

H : Hai District
M : Moshi District
R : Rombo District
P : Pare District
* : Voluntary Hospital

(iv) *Health Centers*

Present		By 1980		By 1985		By 1995	
Central Hai	H	Sanya Juu	H	East Hai	M	West Hai	H
Central Hai	M			Same	P	Moshi Town	M
Moshi Town	M			Chome/Suji	P	West Vunjo	M
East Vunjo	M					Mkuu	R
Mengwe	R					Ugweno	P
Mashati	R					Same	P
Usseri	R					Gonja	P
Usangi	P						
Mwembe/Mbanga	P						
Mamba/Vunta	P						
10		1		3		7	

By 1995 there will be a health center in each of the fifteen division centers as well as one in Sanya Juu, one in Mkuu, and two each in Moshi Town and Same,

(5) *Educational and Cultural Facilities*

(i) Vocational schools
The cooperative college in Moshi Town and the planned public forest industry vocational school should be provided adequate facilities and equipment.

(ii) Secondary schools

Present		By 1980		By 1985	By 1995
West Hai x 3	H	Sanya Juu	H		
Central Hai x 2	H	Mengwe	R		
Central Hai x 3	H	Same	P		
East Hai x 3	M				
Moshi Town x 4	M				
West Vunjo x 2	M				
East Vunjo x 3	M				
Mkuu	R				
Mashati	R				
Usseri	R				
Ugweno	P				
Usangi	P				
Mwembe/Mbanga	P				
Chome/Suji	P				
Mamba/Vunta x 2	P				
Gonja	P				

The present total number of secondary schools in the region is adequate as such, but since there is some disparity between different areas, another three should be provided by 1980.

(iii) Libraries

1975		By 1980		By 1985		By 1995	
Moshi town	M			Same	P	Sanya Juu	H
						Mkuu	R

The Moshi Town library should be upgraded to a "regional library," which will entail considerable improvement of it by 1985.

(6) Commercial Facilities

(i) Regional trade center
Moshi Town will be provided with a "regional trade center," which will be adequately furnished with facilities and equipment.

(ii) District trade centers
Sanya Juu, Mkuu, and Same will each be provided with a "district trade center."

(iii) Trade subcenters
The Hai District will have two, the Moshi District four, the Rombo District three, and the Pare District six trading subcenters.

(iv) Wholesale Facilities

Present	By 1980	By 1985	By 1995
Moshi Town		Same	Sanya Juu
			Mkuu

As core urban commercial facilities, the wholesale facilities will be located centrally in the four district center towns.

(v) Shopping centers

Present		By 1980		By 1985		By 1995	
Sanya Juu	H	Central Hai	M	Central Hai		West Hai	H
Moshi Town x 3	M	East Vunjo	M	Moshi Town x 3	M	Sanya Juu	H
Mkuu	R	Usseri	R	West Vunjo	M	West Hai	M
Same x 2	P	Mamba/Vunta	P	Mashati	R	Moshi Town x 4	M
				Usangi	P	Mengwe	R
						Mkuu	R
						Ugweno	P
						Mwembe/Ilbanga	P
						Same	P
						Chome/Suji	P
						Gonja	P
7		4		7		14	

By 1995 there will be 32 shopping centers inthe region: one in each of the fifteen division centers, two each in Sanya Juu and Mkuu, and three Same as district centers, and ten in Moshi Town as the regional center.

(vi) Open-air Markets

Present		By 1980		By 1985	By 1995
East Hai x 5	H	Central Hai x 2	H		
Sanya Juu	H	West Hai	M		
Central Hai x 2	H	East Vunjo x 2	M		
Central Hai x 4	M	Mashati x 2	R		
West Hai x 4	M	Usseri x 2	R		
West Vunjo x 5	M	Ugweno	P		
East Vunjo x 4	M	Mwembe/Mbanga x 2	P		
Mengwe x 2	R	Chome/Suji x 2	P		
Mkuu	R	Mamba/Vunta x 2	P		
Mashati	R	Gonja x 2	P		
Usseri	R				
Tarakea	R				
Ugweno x 2	P				
Usangi x 4	P				
Mwembe/Mbanga x 2	P				
Same	P				
Chome/Suji	P				
Mamba/Vunta x 3	P				
Gonja	P				
45		17			

The total number of open-air markets necessary will be provided by 1980, chiefly at the ward center level. In the case of regional, district, and division centers, they will be replaced by the shopping centers as soon as they are built.

(7) Postal Service Facilities

(i) Head post office
The existing facility in Moshi Town should be improved so as to be able to cope with future inter- and intra-regional communications needs.

(ii) Departmental post offices

Present		By 1980	By 1985	By 1995
West Hai	H			
East Vunjo x 2	M			
Mkuu	R			
Usangi	P			
Same	P			
6				

(iii) Subdepartmental post offices

Present		By 1980		By 1985		By 1995	
West Hai x 3	H	Mengwe	R	West Hai	H	West Hai	H
Sanya Juu	H	Mkuu	R	Central Hai	H	Central Hai x 2	H
Central Hai	H			Central Hai	M	Central Hai x 2	M
Central Hai x 2	M			East Hai	M	East Hai x 3	M
East Hai x 2	M			Moshi Town x 3	M	Moshi Town x 3	M
T.P.C.	M			East Vunjo	M	West Vunjo	M
West Vunjo x 3	M			Mashati	R	East Vunjo x 3	M
East Vunjo	M			Usseri	R	Mengwe	R
Mashati	R			Ugweno	P	Mashati	R
Usseri	R			Usangi	P	Usseri	R
Tarakea	R			Mwembe/Mbanga	P	Ugweno	P
Ugweno x 2	P			Chome/Suji	P	Usangi	P
Usangi x 2	P			Mamba/Vunta	P	Mwembe/Mbanga x 2	P
Mwembe/Mbanga	P			Gonja	P	Same x 2	P
Chome/Suji x 2	P					Chome/Suji	P
Mamba/Vunta x 3	P					Mamba/Vunta	P
Gonja	P					Gonja	P
28		2		16		37	

By 1980 the existing subdepartmental post offices should by improved, and the two areas in Rombo District lacking such facilities should be provided with them. By 1995 all wards should have one.

(8) Telephone Service Facilities

(i) Regional telephone exchange
This existing facility, located in Moshi Town, should be improved in order to be able to cope with further systemization and capacity increase.

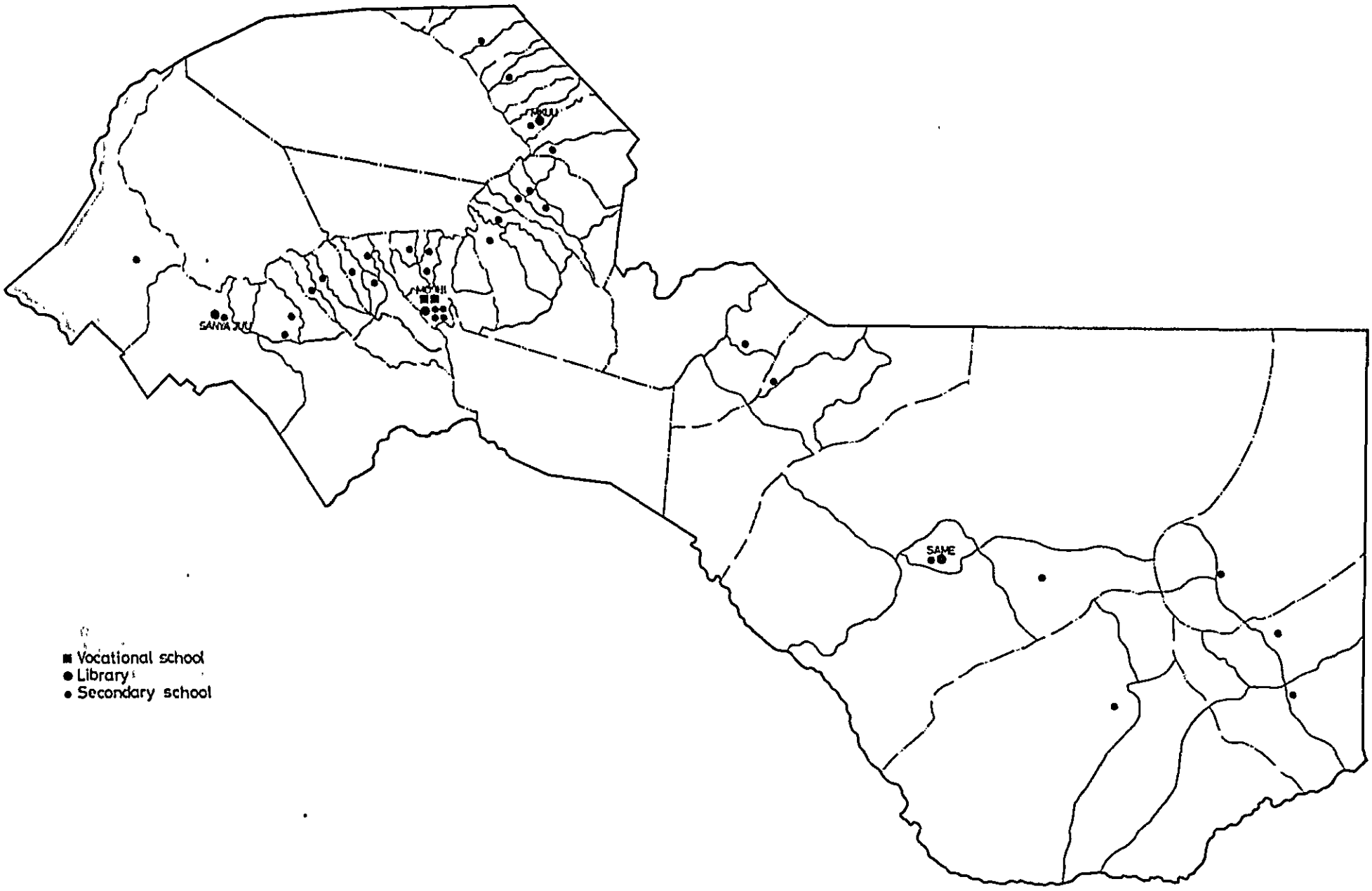
(ii) District telephone exchanges
Of the telephone service facilities in the Hai, Rombo, and Pare districts, those in Sanya Juu, Mkuu, and Same will be improved and upgraded to "district telephone exchanges" in order to cope with future systemization and increase in capacity.

(iii) Telephone sub-exchanges

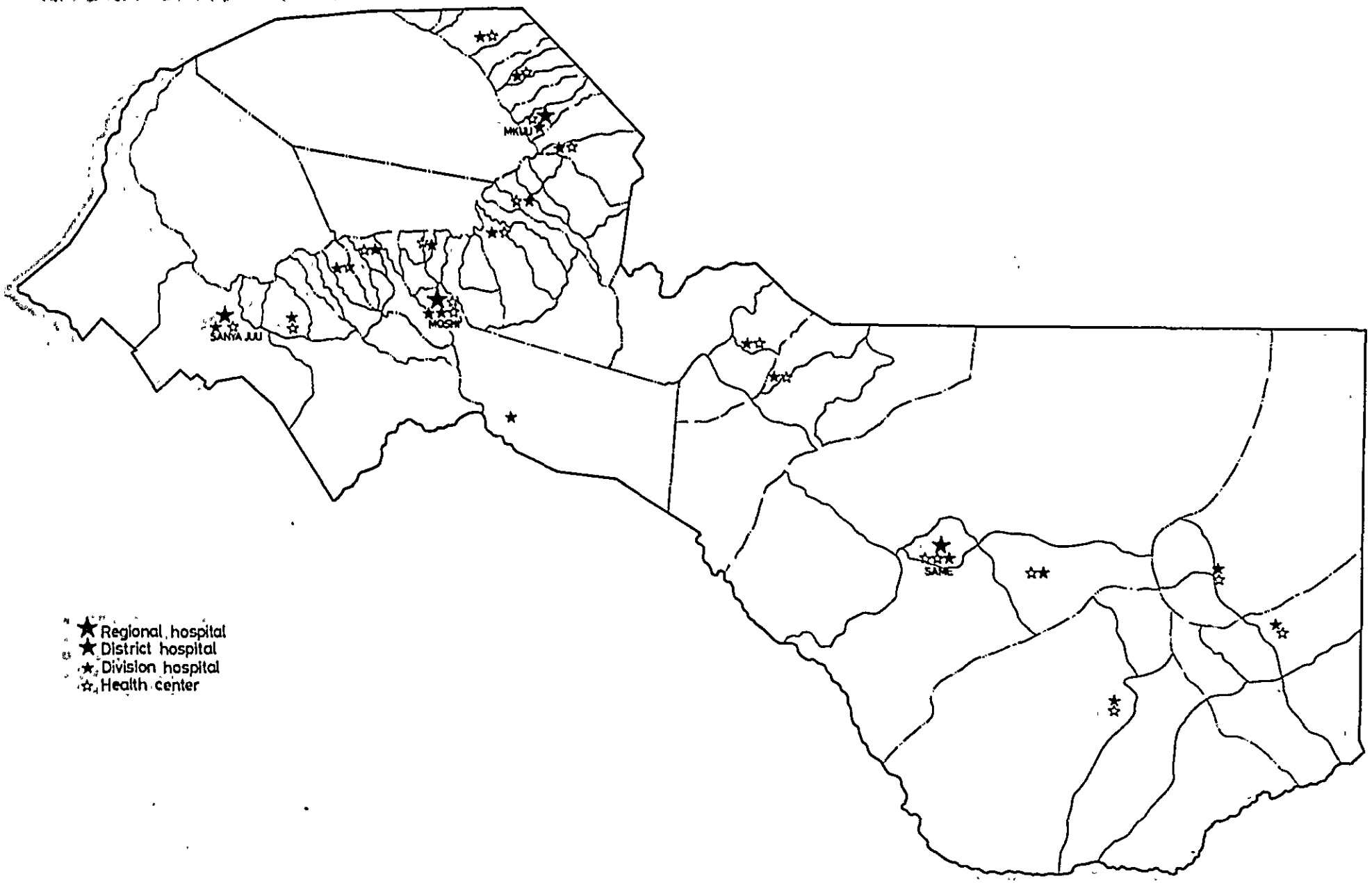
Present		By 1980		By 1985		By 1995	
West Hai x 2	H	Usseri	R	Central Hai	H	West Hai x 3	H
Central Hai	H	Usangi	P	Central Hai	M	Central Hai x 2	H
Central Hai	M	Mamba/Vunta	P	East Hai x 2	M	Central Hai x 3	M
East Vunjo x 2	H			West Vunjo x 2	M	East Hai x 4	M
				Mengwe	R	T.P.C.	M
				Mashati	R	West Vunjo x 2	M
				Wgweno x 2	P	East Vunjo x 5	M
				Usangi	P	Mengwe	R
				Mwembe/Mbanga	P	Mkuu	R
				Chome/Suji x 2	P	Mashati x 2	R
				Mamba/Vunta	P	Usseri x 2	R
				Gonja	P	Tarakea	R
						Ugweno x 2	P
						Usangi x 2	P
						Mwembe/Mbanga x 3	P
						Chome/Suji x 2	P
						Mamba/Vunta x 3	P
						Gonja x 2	P

By 1980 the telephone sub-exchanges will be increased to a number that will allow for full service coverage by having each service an area intermediate in extend between the district- and division-level communities. Then, by 1995, each ward will be provided with such a facility.

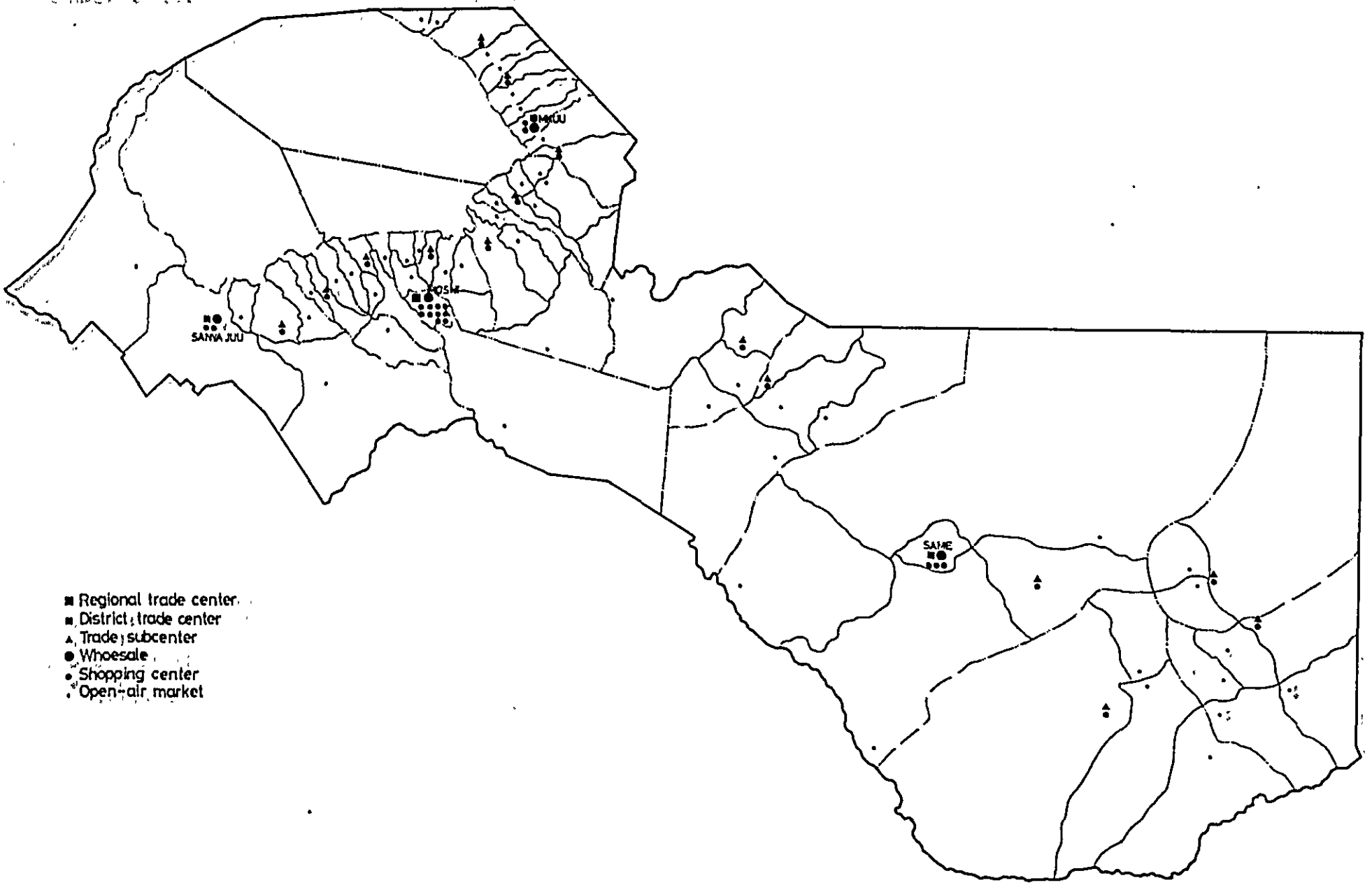
EDUCATIONAL AND CULTURAL SERVICE FACILITY DISTRIBUTION MAP



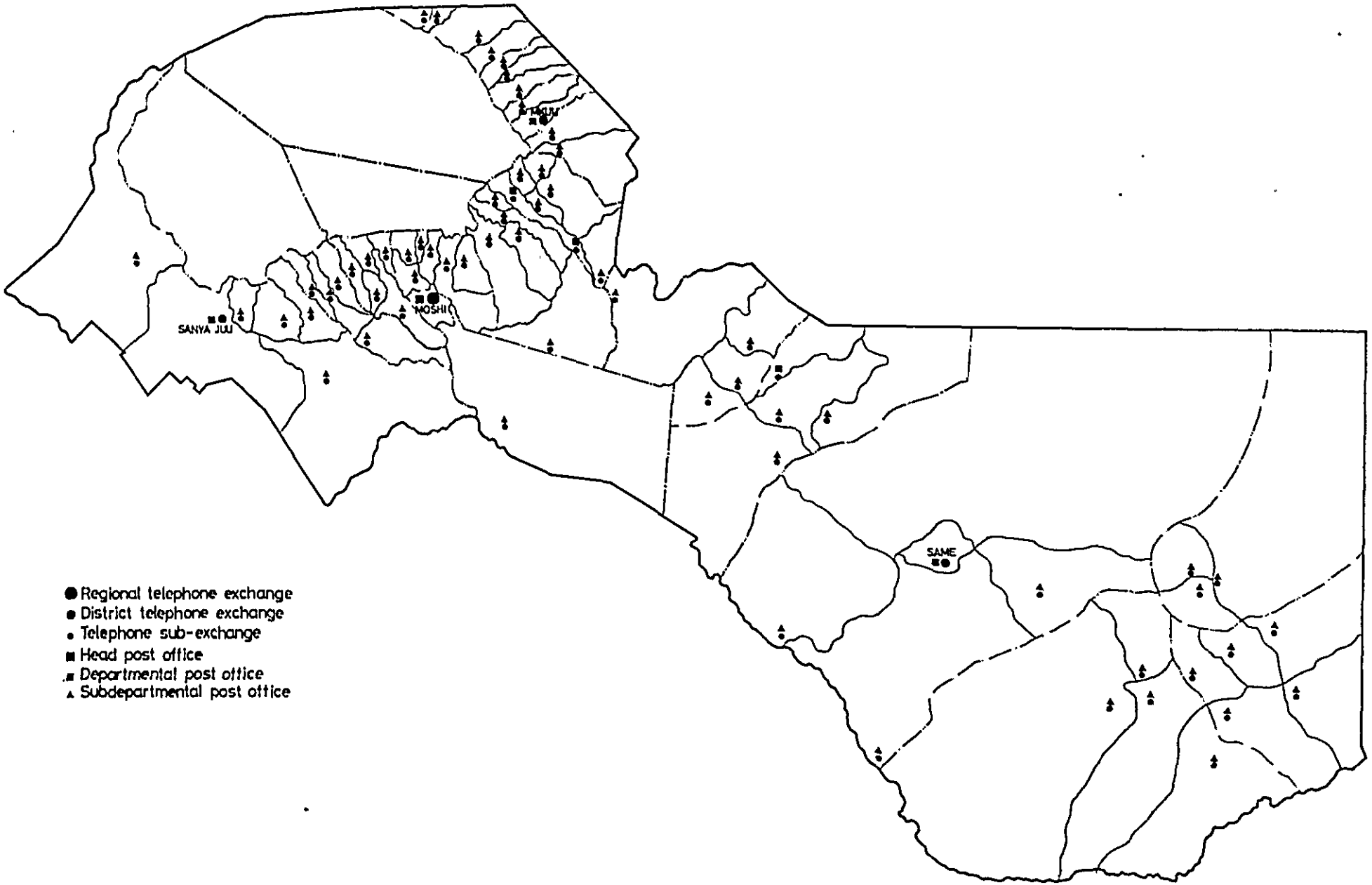
MEDICAL AND HEALTH SERVICE FACILITY DISTRIBUTION MAP



COMMERCIAL SERVICE FACILITY DISTRIBUTION MAP



POSTAL AND TELEPHONE SERVICE FACILITY DISTRIBUTION MAP



5. STATISTICAL DATA

(1) General

As yet there are no accurate official statistics regarding changes in administrative classifications, population increase and movement, villagization, etc., in the Kilimanjaro Region since the national census of 1967. All there is a tentative forecast of the total population of the region in 1975 on the basis of a sample survey carried out by the Statistics Bureau in 1973.

Administrative, population, area, and other data is indispensable in the preparation of an integrated development plan. Such data, as provided herein, represents that which has been made available by district and village offices and other sources and slightly adjusted. It should be useful in further planning.

(2) Population Data

The population figure for the whole region is that projected for 1975 in the national demographic survey of Tanzania carried out in 1973.

The breakdown of the population by district is based on the 1967 census and the latest results of surveys undertaken by the Kilimanjaro Regional Planning Unit.

(3) Administrative Boundaries

The administrative boundaries are basically those indicated on the rough maps made available by the district offices. They have been revised, however, on the basis of the boundary lines of the enumeration units of the 1967 census and collation with terrain and village location.

(4) Area

The figure for the overall area of the Kilimanjaro Region is that of the 1967 census, and those for each of the administrative units those measured directly from the above mentioned administrative maps on a scale of 1:250,000.

(5) Place Names

The place names are those given on the Series Y742 maps on a scale of 1:50,000.

(6) Coding

Each of the administrative units has been assigned a 5-digit code number, the last two digits indicating the village, the middle digit the ward, the second from the left the division, and the left-hand digit the district.

POPULATION PROFILE, 1975

Code	Divisions	Area(km^2)	Population	No. of families	Pop. density (persons/ km^2)	No. of wards	No. of villages
10000	HAI DISTRICT	2,109.8	160,544	28,566	105.9	10	80
11000	West Hai	1,377.3	97,492	17,020	70.8	6	56
12000	Central Hai	138.9	63,052	11,546	453.9	4	24
-	N/P	152.3	-	-	-	-	-
-	F/R	441.3	-	-	-	-	-
20000	MOSHI DISTRICT	1,764.2	365,895	58,709	238.9	29	132
21000	Central Hai	120.5	74,902	12,895	621.6	5	28
22000	East Hai	182.8	89,754	12,843	491.0	6	33
23000	Moshi Town	30.1	50,000	10,314	1,661.1	6	-
24000	TPC/Arusha Chini	599.5	4,818	703	8.0	1	4
25000	West Vunjo	374.7	58,267	9,206	155.5	4	32
26000	East Vunjo	224.2	88,154	12,695	393.2	7	35
-	N/P	159.3	-	-	-	-	-
-	F/R	73.1	-	-	-	-	-
30000	ROMBO DISTRICT	1,435.0	146,272	23,255	290.0	11	56
31000	Mengwe	175.0	34,970	6,002	199.8	2	14
32000	Mkuu	67.6	32,961	4,989	487.6	2	12
33000	Mashati	94.0	34,039	5,193	362.1	3	13
34000	Usseri	140.8	38,208	6,476	271.4	3	15
35000	Tarakia	27.0	6,094	595	225.7	1	2
-	N/P	400.0	-	-	-	-	-
-	F/R	530.6	-	-	-	-	-
40000	PARE DISTRICT	7,900.0	192,289	35,170	24.3	25	121
41000	Ugweno	584.6	29,266	5,470	50.1	4	22
42000	Usangi	907.7	36,214	6,449	39.9	4	26
43000	Mwenbe/Mbaga	2,818.3	45,451	9,419	16.1	5	22
44000	Chome/Suji	1,879.9	18,036	2,511	9.6	4	13
45000	Mamba/Vunta	697.3	36,588	6,269	52.5	5	20
46000	Gonja	1,012.2	26,734	4,552	26.4	3	18
	KILIMANJARO REGION	13,209.0	865,000	145,700	(65.5)	75	389

Remarks: N/P : Kilimanjaro National Park
F/R Kilimanjaro Forest Reserve

10000 HAI DISTRICT

Code	Wards	Area(km^2)	Population	%	No. of families	Pop. density (persons/ km^2)	No. of villages
11000	WEST HAI	1,377.3	97,492	60.7	17,020	70.8	56
11100	West Siha	478.4	10,177	6.3	1,673	21.3	16
11200	Central Siha	327.4	29,161	18.2	3,996	89.1	14
11300	East Siha	30.2	10,528	6.6	1,531	348.6	4
11400	West Masama	58.0	17,097	10.6	3,035	348.6	9
11500	East Masama	55.6	18,382	11.4	3,583	330.6	5
11600	South Masama	427.7	12,147	7.6	3,202	23.0	8
12000	CENTRAL HAI	138.9	63,052	39.3	11,546	453.9	24
12100	West Machame	19.3	14,527	9.1	2,371	752.7	5
12200	North Machame	32.0	17,579	10.9	2,401	549.3	4
12300	East Machame	35.6	20,015	12.5	4,649	562.2	9
12400	South Machame	52.0	10,931	6.8	2,125	210.2	6
	National park & forest reserve	593.6	-	-	-		
Totals or average		2,109.8	160,544	100.0	28,566	76.1	80

20000 MOSHI DISTRICT

Code	Wards	Area(km^2)	Population	%	No. of families	Pop. density (persons/ km^2)	No. of villages
21000	CENTRAL HAI	120.5	74,902	20.5	12,895	621.6	28
21100	West Kibosho	23.6	28,129	7.7	3,790	1,192.0	8
21200	Central Kibosho	30.2	20,068	5.5	3,677	664.5	10
21300	East Kibosho	11.5	7,284	2.0	1,481	633.4	3
21400	Machame Kindi	13.4	13,839	3.8	2,512	1,032.8	4
21500	Kirema	41.8	5,582	1.5	1,434	133.5	3
22000	EAST HAI	182.8	89,753	24.5	12,843	491.0	33
22100	North Uru	15.1	22,310	6.1	1,699	1,477.5	4
22200	Uru Shimbwe	9.1	4,567	1.2	810	501.9	2
22300	East Uru	26.6	10,698	2.9	1,857	402.2	7
22400	Uru Mawella	34.5	15,682	4.3	1,897	454.6	6
22500	West Old Moshi	56.3	20,561	5.6	2,272	365.2	6
22600	East Old Moshi	41.2	15,936	4.4	4,308	386.8	8
23000	MOSHI	30.1	50,000	13.7	10,314	1,661.1	-
23100	Moshi North	-	-	-	-	-	-
23200	Moshi East	-	-	-	-	-	-
23300	Moshi South-A	-	-	-	-	-	-
23400	Moshi South-B	-	-	-	-	-	-
23500	Moshi Central	-	-	-	-	-	-
23600	Moshi Pasua	-	-	-	-	-	-
24000	TPC/ARUSHA CHINI	599.5	4,818	1.3	703	8.0	4
24100	Arusha Chini	599.5	4,818	1.3	703	8.0	4
25000	WEST VUNJO	374.7	58,267	15.9	9,206	167.6	32
25100	West Kirua	101.7	18,981	5.2	2,749	186.6	8
25200	East Kirua Vunjo	68.4	9,047	2.5	1,235	132.3	4
25300	Kilema	44.8	19,923	5.4	2,745	444.7	11
25400	Kahe	159.8	10,316	2.8	2,531	64.6	9
26000	EAST VUNJO	224.2	88,154	24.1	12,695	393.2	35
26100	West Marangu	17.0	16,615	4.6	2,373	977.4	7
26200	East Marangu	39.4	16,500	4.5	2,751	418.8	7
26300	North Mamba	19.4	7,423	2.0	1,236	382.6	4
26400	South Mamba	9.7	8,800	2.4	1,466	907.2	4
26500	North Mwika	21.2	14,033	3.9	1,744	661.9	5
26600	South Mwika	69.0	20,195	5.5	2,208	292.7	5
26700	Mwika Makuyuni	48.5	4,588	1.3	917	94.6	3
	National park & forest reserve	232.3	-	-	-	-	-
Totals or average		1,893.4	365,895	100.0	58,709	207.4	132

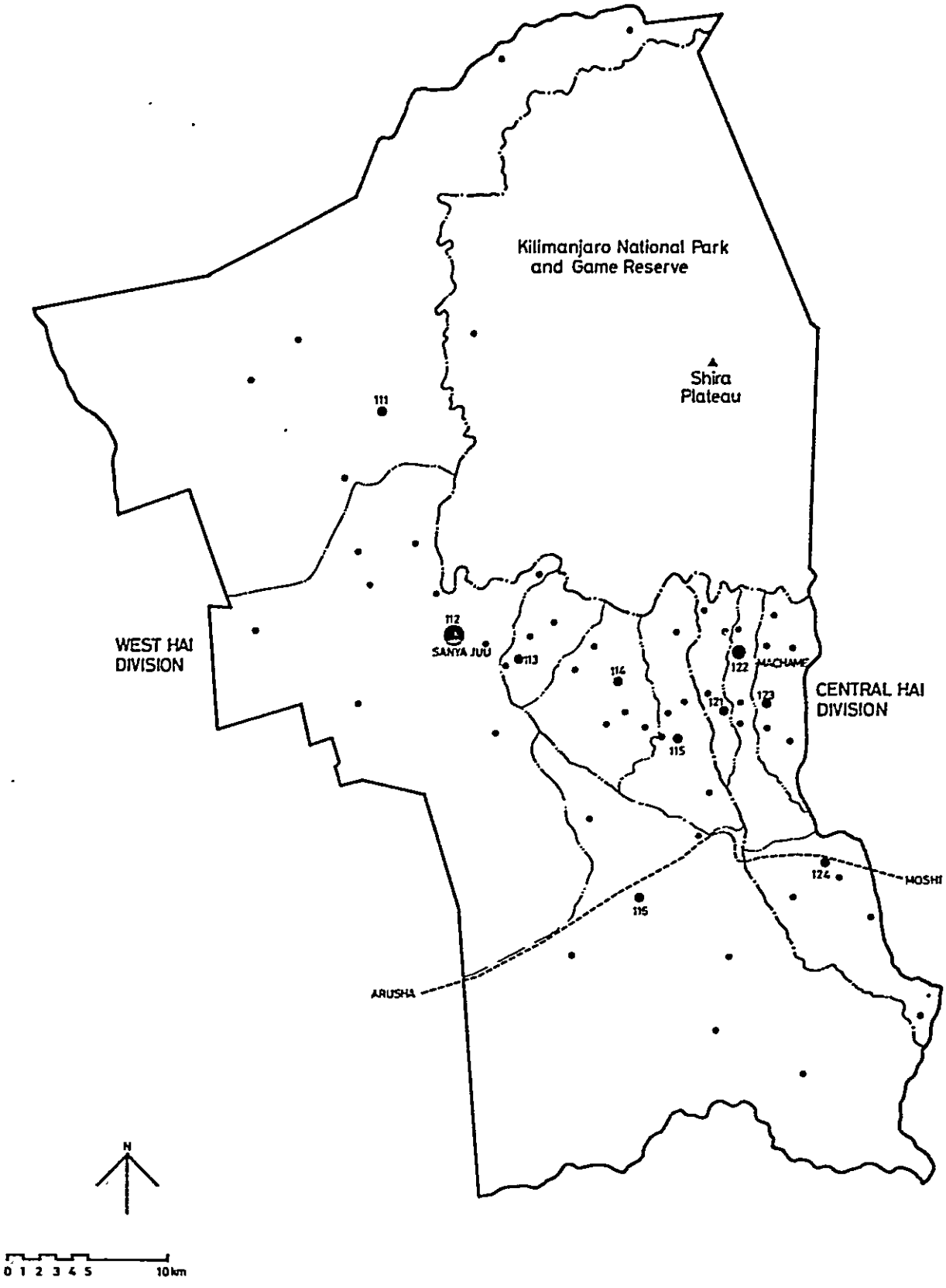
30000 ROMBO DISTRICT

Code	Wards	Area(km^2)	Population	%	No. of families	Pop. density (persons/ km^2)	No. of villages
31000	MENGWE	175.0	34,970	23.9	6,002	199.8	14
31100	West Mengwe	104.5	20,795	14.2	3,640	198.9	8
31200	East Mengwe	70.5	14,175	9.7	2,362	201.1	6
32000	MKUU	67.6	32,961	22.5	4,989	487.6	12
32100	West Mkuu	38.2	18,081	12.4	2,606	473.3	6
32200	East Mkuu	29.4	14,880	10.1	2,383	506.1	6
33000	MASHATI	94.0	34,039	23.3	5,193	362.1	13
33100	South Mashati	36.4	15,078	10.3	2,393	414.2	5
33200	North Mashati	27.0	10,361	7.1	1,641	383.7	4
33300	Mashati Olele	30.6	8,600	5.9	1,159	281.0	4
34000	USSERI	140.8	38,208	26.1	6,476	271.4	15
34100	South Usseri	47.5	7,755	5.3	1,514	163.3	3
34200	Central Usseri	77.5	20,730	14.2	3,517	267.5	8
34300	North Usseri	15.8	9,723	6.6	1,445	615.4	4
35000	TARAKIA	27.0	6,094	4.2	595	225.7	2
35100	Tarakia	27.0	6,094	4.2	595	225.7	2
	National park & forest reserve	930.6	-	-	-	-	-
Totals or average		1,435.0	146,272	100.0	23,255	101.9	56

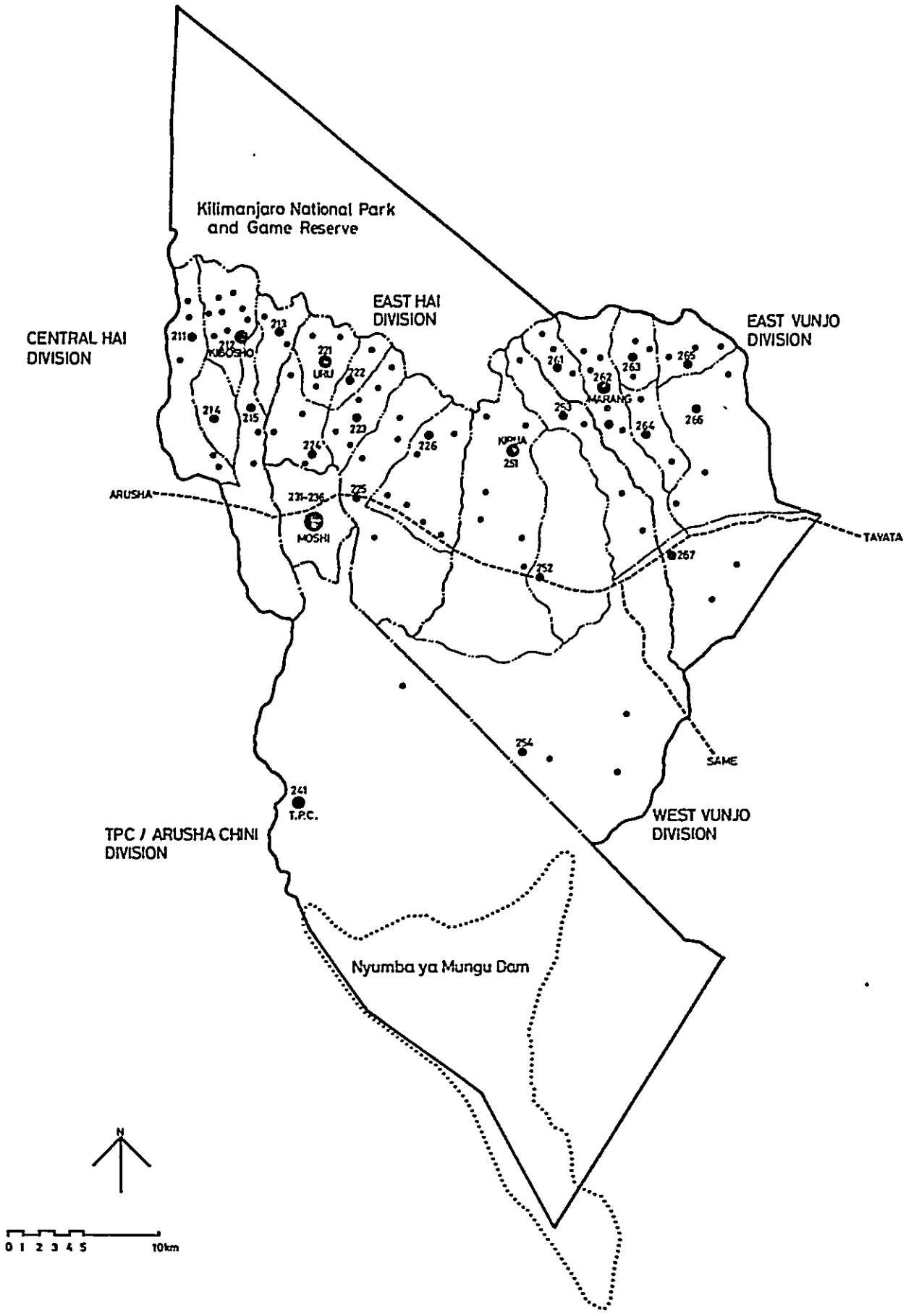
40000 PARE DISTRICT

Code	Wards	Area(km^2)	Population	%	No. of families	Pop. density (persons/ km^2)	No. of villages
41000	UGWENO	548.6	29,266	15.2	5,470	50.1	22
41100	Kileo	337.4	4,095	2.1	756	12.1	4
41200	Mwanga	75.9	7,318	3.8	1,268	96.4	5
41300	Msangeni	66.6	9,969	5.2	1,849	149.7	7
41400	Kifula	104.7	7,884	4.1	1,597	75.3	6
42000	USANGI	907.7	36,214	18.8	6,949	39.9	26
42100	Lembeni	358.0	14,276	7.4	3,248	39.9	11
42200	Kigare	104.6	7,278	3.8	1,081	69.6	4
42300	Kilongwe	178.4	10,983	5.7	2,128	61.6	8
42400	Kwakoa	266.7	3,678	1.9	492	13.8	3
43000	MWEMBE/MBAGA	2,818.3	45,451	23.7	9,419	16.1	22
43100	Kirya/Mbaga	468.7	3,939	2.1	368	8.4	4
43200	Mwembe/Vudee	262.6	10,581	5.5	1,808	40.3	6
43300	Mshewa	585.6	6,728	3.5	1,394	11.5	5
43400	Kishiwani/Msindo	1,434.8	9,204	4.8	1,437	6.4	5
43500	Same	66.6	15,000	7.8	4,412	225.2	2
44000	CHOME/SUJI	1,879.9	18,036	9.4	2,511	9.6	13
44100	Makanya	1,080.9	5,442	2.8	760	5.0	3
44200	Chome	118.0	4,132	2.2	700	35.0	4
44300	Suji	342.5	4,545	2.4	557	13.3	3
44400	Hedaru	338.5	3,917	2.0	494	11.6	3
45000	MAMBA/VUNTA	697.3	36,588	19.0	6,269	52.5	20
45100	Bwambo	80.0	10,476	5.4	1,836	131.0	6
45200	Mwemba	83.0	4,289	2.2	862	51.7	3
45300	Vunta	184.6	7,005	3.6	1,481	37.9	4
45400	Bendera	172.3	7,411	3.9	881	43.0	3
45500	Ndungu	177.4	7,406	3.9	1,209	41.7	4
46000	GONJA	1,012.2	26,734	13.9	4,552	26.4	18
46100	Vuje	81.1	6,019	3.1	1,216	74.2	4
46200	Mtii	63.5	10,601	5.5	1,865	166.9	7
46300	Gonja/Maore	867.6	10,114	5.3	1,471	11.7	7
Totals or average		7,900.0	192,289	100.0	35,170	24.3	121

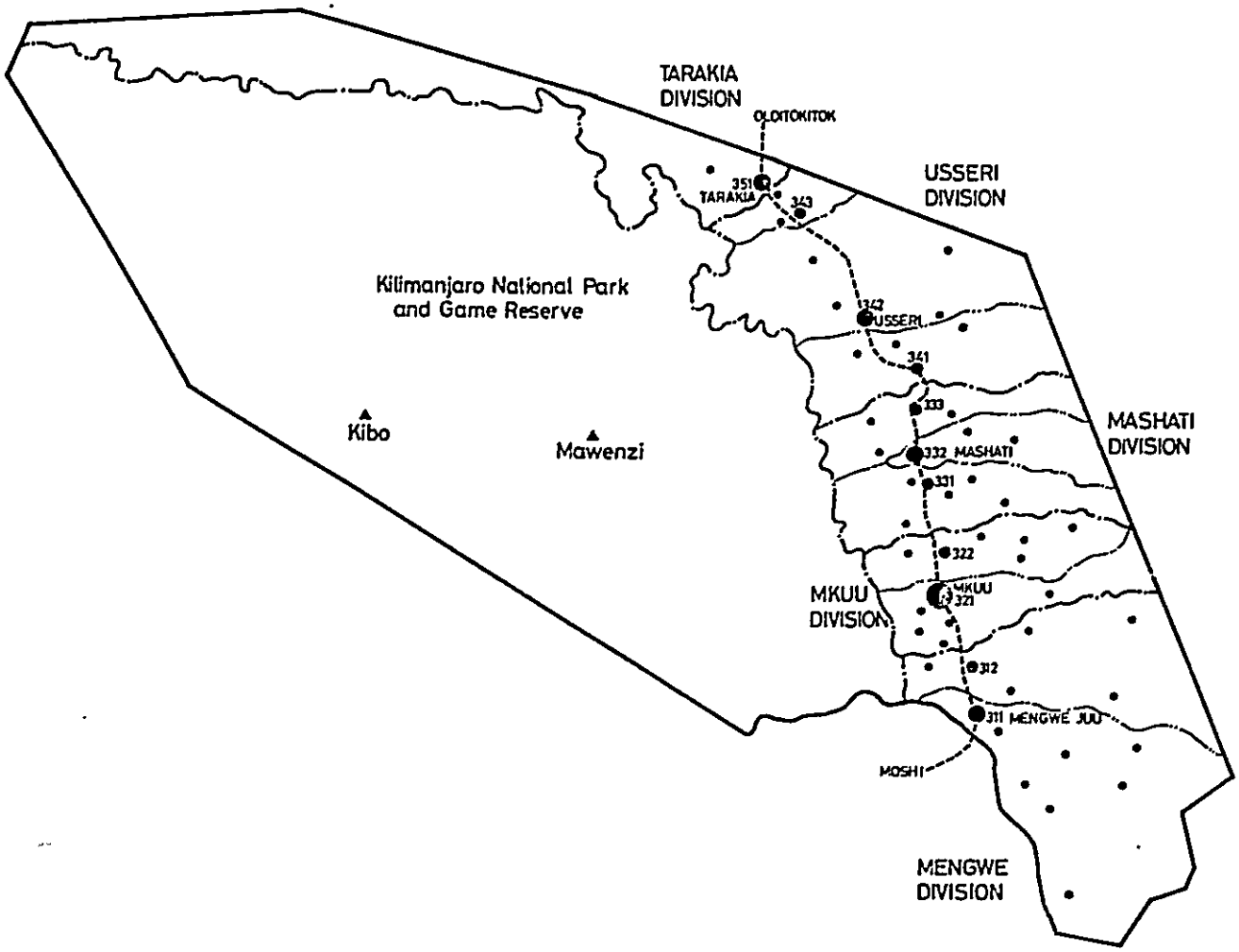
ADMINISTRATIVE MAP: HAI DISTRICT

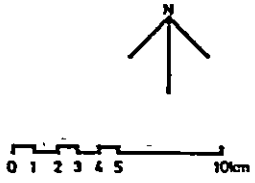


ADMINISTRATIVE MAP: MOSHI DISTRICT

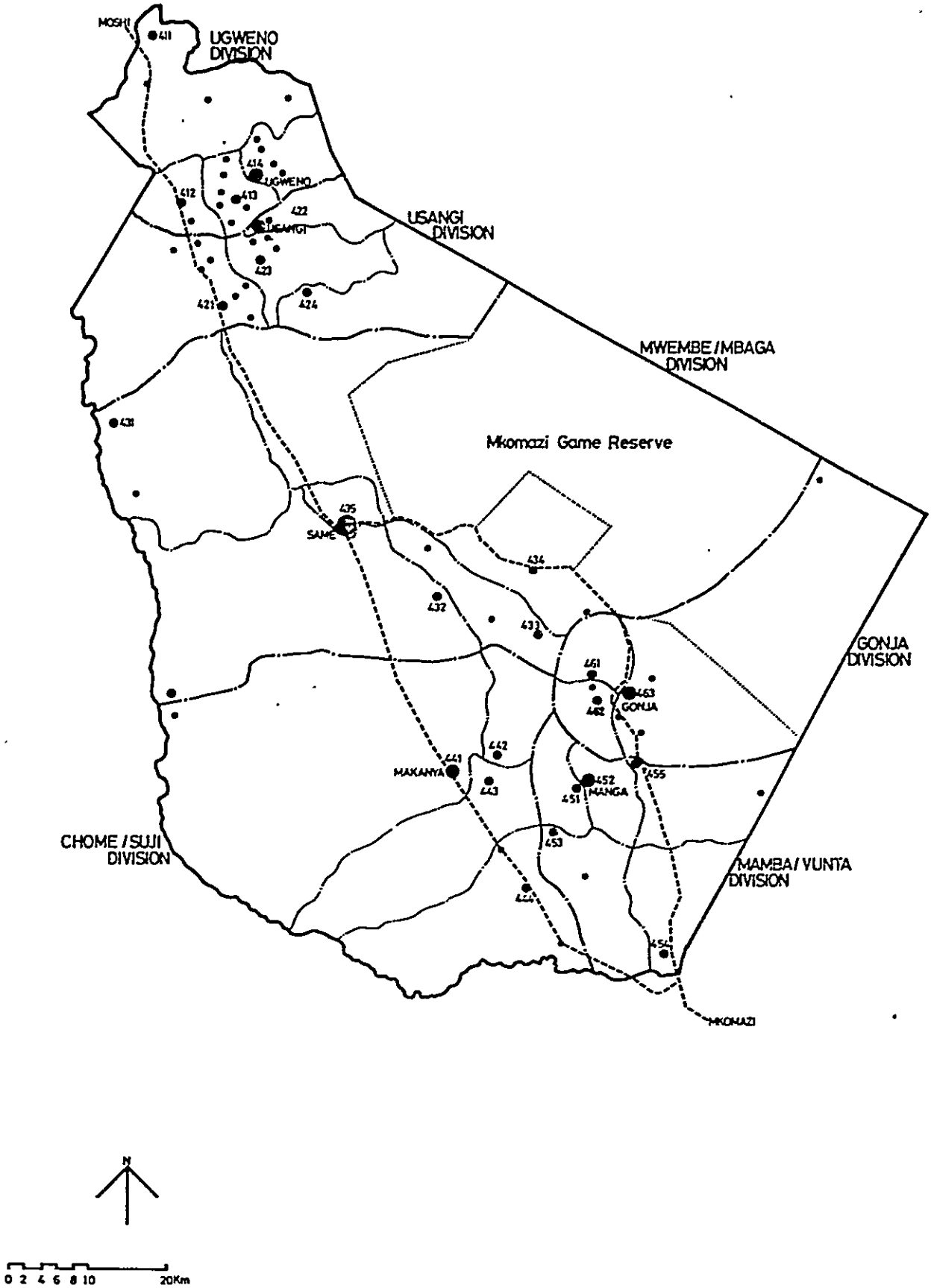


ADMINISTRATIVE MAP: ROMBO DISTRICT





ADMINISTRATIVE MAP: PARE DISTRICT



HAI DISTRICT (1)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
10000	HAI DISTRICT	2,109.8 (N/P 593.6)	28,566	160,544	76.1	Sanya Juu
11000	West Hai Division	1,377.3	17,020	97,492	70.8	Sanya Juu
11100	West Siha Ward	478.4	1,673	10,177	21.3	Nairobi
11101	Rongai		24	145		
11102	Vet/Ndaragua		77	568		
11103	Maua/Susama		115	689		
11104	Engare/Nairobi		97	578		
11105	Matadi		127	768		
11106	Wasendo		108	650		
11107	Motomati		22	130		
11108	Squarter Juu		247	1,483		
11109	Ndumeit		142	853		
11110	Lemosho		350	2,099		
11111	Sinai		51	310		
11112	Simba		200	1,219		
11113	Ol Molog		59	361		
11114	Larangwa/K/T		20	119		
11115	Kituo Chamitu/Kambi		34	205		
11116	Msitu/Kambi ya Raha					
11200	Central Siha Ward	327.4	3,996	29,161	89.1	Sanya Juu
11201	Mowo/Njamu		380	1,351		
11202	Samaki/Maini		489	2,594		
11203	Koboko		565	3,050		
11204	Nrau/Kisangara		489	1,853		
11205	Karasi		337	5,458		
11206	Sanya Juu		428	1,995		
11207	Naibilie		495	6,797		
11208	Olidonyomurwa		283	2,578		
11209	Magadini		354	2,377		
11210	Kifufu		37	220		
11211	Lerongo		37	222		
11212	Molomo		30	182		
11213	Nwanza		15	86		
11214	Gararagua		67	398		
11300	East Siha Ward	30.2	1,531	10,528	348.6	Kibongoto
11301	Mae		467	4,344		
11302	Kingia		315	1,478		
11303	Wandri		445	2,864		
11304	Kashashi		304	1,842		

HAI DISTRICT (2)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
11400	West Masama Ward	58.0	3,035	17,097	348.6	Kyuu
11401	Lukani		624	2,245		
11402	Central Lemira		277	1,650		
11403	Central Kyuu		439	1,916		
11404	Isuki		271	1,826		
11405	Nroma		293	1,976		
11406	Nkwansira		282	1,675		
11407	Mbosho		293	1,848		
11408	Losaa		282	1,767		
11409	Nguni		274	2,194		
11500	East Masama Ward	55.6	3,583	18,382	330.6	Masama
11501	Sawe		489	2,312		
11502	Roo		760	2,938		
11503	Mbwera		662	5,241		
11504	Sonu		825	2,816		
11505	Mudio		847	5,075		
11600	South Masama Ward	427.7	3,202	12,147	23.0	Boma la Ngombe
11601	Kware		407	2,213		
11602	Mungushi		404	1,600		
11603	Mtakuja		110	530		
11604	Kawaya		326	1,867		
11605	Kwa Sadala		326	573		
11606	Boma la Ngombe		326	1,711		
11607	Sanya Station		434	1,555		
11608	Rundugai		869	2,098		
12000	CENTRAL HAI DIVISION	138.9	11,546	63,052	453.9	Machame
12100	West Machame Ward	19.3	2,371	14,527	752.7	Uswaa
12101	Salali		598	3,661		
12102	Kyere		552	3,385		
12103	Uswaa		455	2,785		
12104	Nronga		583	3,574		
12105	Mamba		183	1,118		
12200	North Machame Ward	32.0	2,401	17,579	549.3	Machame
12201	Uduru		382	2,795		
12202	Foo		435	3,182		
12203	Wari		893	6,539		
12204	Nshara		691	5,063		

HAI DISTRICT (3)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
12300	East Machame Ward	35.6	4,649	20,015	562.2	Lyamungu
12301	Mkuu Sinde		525	2,966		
12302	Tella		316	1,781		
12303	Urori		353	1,996		
12304	Lyamungu Sinde		348	1,969		
12305	Central Lyamungu		533	3,009		
12306	Lyamungu Kilanya		249	1,408		
12307	Hulama		260	1,692		
12308	Usari		379	2,037		
12309	Mkuu Ndoo		465	3,157		
12400	South Machame Ward	52.0	2,125	10,931	210.2	Njoro
12401	Shiri Mghungani		487	1,912		
12402	Shiri Njoro		401	1,268		
12403	Kikafu Chini		487	3,142		
12404	Kimishuku		317	2,213		
12405	Longoi		303	1,522		
12406	Mbatakero		130	874		

MOSHI DISTRICT (1)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
20000	MOSHI DISTRICT	1,764.1 (N/P 232.3)	58,709	365,895	207.4	Moshi Town
21000	Central Hai Div.	120.5	12,894	74,902	621.6	Kibosho
21100	West Kibosho Ward	23.6	3,790	28,129	1,192.0	Umbwe Onana
21101	Umbwe Sinde		644	4,086		
21102	Umbwe Onana		421	3,437		
21103	Manushi Sinde		609	4,870		
21104	Sambarai		533	3,222		
21105	Kifuni		339	2,709		
21106	Manushi Ndoo		470	4,278		
21107	Kombo		466	3,154		
21108	Mkomongo		308	2,373		
21200	Central Kibosho Ward	30.2	3,677	20,068	664.5	Kibosho
21201	Mloe		278	1,632		
21202	North Uchau		300	1,512		
21203	Omarini		400	2,169		
21204	Kitandu		278	1,596		
21205	South Uchau		300	1,557		
21206	Uri		433	2,552		
21207	Otarini		433	2,172		
21208	Dakau		366	2,150		
21209	Sisa Maru		489	2,530		
21210	Maua		400	2,198		
21300	East Kibosho Ward	11.5	1,481	7,284	633.4	Sungu
21301	Mweka		506	3,029		
21302	Sungu		375	1,909		
21303	Msinga		600	2,346		
21400	Machame Kindi Ward	13.4	2,512	13,839	1,032.8	Kindi
21401	Kindi Masasani		300	2,715		
21402	Kindi		1,237	7,430		
21403	Shirimatunda		328	2,195		
21404	Chekereni/Weru Weru		310	1,499		
21500	Kirima Ward	41.8	1,434	5,582	133.5	Kirima Juu
21501	Kirima Juu		557	2,240		
21502	South Kirima		577	2,286		
21503	Boru		300	1,056		
22000	East Hai Division	128.8	12,843	89,754	491.0	Uru
22100	North Uru Ward	15.1	1,699	22,310	1,477.5	Ongoma
22101	Msuni		300	3,869		
22102	Mrawi		486	5,711		
22103	Ongoma		449	6,527		
22104	Njari		464	6,203		

MOSHI DISTRICT (2)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
22200	Uru Shimbwe Ward	9.1	810	4,567	501.9	Shimbwe Juu
22201	Shimbwe Chini		504	2,682		
22202	Shimbwe Juu		306	1,885		
22300	East Uru Ward	26.6	1,857	10,698	402.2	Kishimundu
22301	Mataruni		247	1,614		
22302	Mwasi Juu		247	1,526		
22303	Mwasi Chini		247	1,383		
22304	Mruwi		247	1,073		
22305	Kishimundu		296	1,733		
22306	Mnini		326	1,985		
22307	Kyaseni		247	1,384		
22400	Uru Mawella Ward	34.5	1,897	15,682	454.6	Kimanganuni
22401	Longuo		296	2,767		
22402	Karima		316	5,058		
22403	Kitandu		514	1,748		
22404	Rau		306	2,450		
22405	Okaseni		119	892		
22406	Kinamganuni		346	2,767		
22500	West Old Moshi Ward	56.3	2,272	20,561	365.2	Kiboroloni
22501	Tema		445	2,516		
22502	Korini Juu		296	2,754		
22503	Tella		504	5,794		
22504	Korini Chini		296	2,770		
22505	Kiboroloni		296	3,131		
22506	Masaranga Mandaka		435	3,596		
22600	East Old Moshi Ward	41.2	4,308	15,936	386.8	Kidia
22601	Mowo		603	3,028		
22602	Tsuduny Juu		391	1,251		
22603	Kidia		573	2,571		
22604	Mahoma		439	1,507		
22605	Shia		573	1,633		
22606	Mdawi		543	2,131		
22607	Sango		593	2,101		
22608	Kikarara		593	1,714		
23000	Moshi Division	30.1	10,314	50,000	1,661.1	Moshi Central
23100	Moshi North Ward		-	-		
23200	Moshi East Ward		-	-		
23300	Moshi South-A Ward		-	-		
23400	Moshi South-B Ward		-	-		
23500	Moshi Central Ward		-	-		
23600	Moshi Pasua Ward		-	-		

MOSHI DISTRICT (3)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
24000	TPC/Arusha Chini Div.	599.5	703	4,818	8.0	TPC
24100	Arusha Chini Ward	599.5	703	4,818	8.0	TPC
24101	Chekereni		-	-		
24102	Mtakuja		-	-		
24103	TPC		-	-		
24104	Rouga		-	-		
25000	West Vunjo Division	347.7	9,206	58,267	167.6	Kirua
25100	West Kirua Vunjo Ward	101.7	2,749	18,981	186.6	Kirua
25101	Kwamare		374	2,615		
25102	Iwa		539	3,770		
25103	Kanji		356	2,493		
25104	Nduni		426	2,719		
25105	Yamu		143	1,003		
25106	Uparu		434	3,035		
25107	Uchira		321	2,250		
25108	Makaa		156	1,096		
25200	East Kirua Vunjo Ward	68.4	1,235	9,047	132.3	Uchira
25201	Mero		348	2,540		
25202	Mrumeni		235	1,998		
25203	Kileuo		287	1,850		
25204	Uchira		365	2,659		
25300	Kilema Ward	44.8	2,745	19,923	444.7	Mkiashi
25301	Kimaroroni		269	2,258		
25302	Rosho		217	1,372		
25303	Makani Chini		252	1,716		
25304	Makani Juu		182	1,239		
25305	Kyou		226	1,592		
25306	Leghonamulo		235	2,830		
25307	Kilema Chini		287	2,060		
25308	Ruwa		295	2,420		
25309	Mkiashi		226	1,349		
25310	Marwe Kiua		217	1,082		
25311	Pofu		339	2,005		
25400	Kahe Ward	159.8	2,531	10,316	64.6	Kahe (Soko)
25401	Rau River		348	1,461		
25402	Oria		310	1,850		
25403	Kisange Sangeni		261	1,034		
25404	Opuruni		348	869		
25405	Mangaria		261	738		
25406	Soko		217	956		
25407	Kiterini		243	723		
25408	Kiomu		239	1,165		
25409	Ghona		304	1,520		

MOSHI DISTRICT (4)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
26000	East Vunjo Division	224.2	12,695	88,154	393.2	Marangu
26100	West Marangu Ward	17.0	2,373	16,615	977.4	Kyala
26101	Nduweni		304	2,043		
26102	Kyala		275	2,146		
26103	Kitowo		343	2,450		
26104	Kiraracha		353	2,749		
26105	Komalyango		343	2,410		
26106	Mbahe		422	2,982		
26107	Komela		333	1,835		
26200	East Marangu Ward	39.4	2,751	16,500	418.8	Marangu
26201	Kirefure		310	1,900		
26202	Lyamrakarana		294	1,446		
26203	Arisi		266	2,076		
26204	Lyasomboro		363	2,535		
26205	Rauya		683	2,015		
26206	Mshiri		341	3,104		
26207	Samanga		494	3,424		
26300	North Mamba Ward	19.4	1,236	7,423	382.6	Kokirie
26301	Mboni		339	2,039		
26302	Komakundi		299	1,794		
26303	Kokirie		359	2,155		
26304	Kotela		239	1,435		
26400	South Mamba Ward	9.7	1,466	8,800	907.2	Mkolowoni
26401	Lekura		279	1,677		
26402	Kirua		279	1,677		
26403	Mkolowoni		358	2,146		
26404	Kimangaro		550	3,300		
26500	North Mwika Ward	21.2	1,744	14,033	661.9	Mwika
26501	Maringa		245	2,215		
26502	Mase Nganyeni		245	2,210		
26503	Mase Kinyamvua		431	3,417		
26504	Lole No Marera		431	3,569		
26505	Marimbo Na Uuwo		392	2,722		
26600	South Mwika Ward	69.0	2,208	20,195	292.7	Kimangaro
26601	Kimangaro Shokoni		527	5,152		
26602	Kilimeni		553	5,374		
26603	Kondeni		464	4,469		
26604	Matala		271	2,564		
26605	Mawanjoni		393	2,636		
26700	Mwika Makuyuni Ward	48.5	917	4,588	94.6	Himo
26701	Lotima		423	2,114		
26702	Makuyuni Kirichi		318	1,597		
26703	Himo		176	877		

ROMBO DISTRICT (1)

		Area(km²)	No. of families	Population	Pop. density (persons/km²)	Head-quarters
30000	ROMBO DISTRICT	1,435.0 (N/P 930.6)	23,255	146,272	101.9	Mkuu
31000	Mengwe Division	175.0	6,002	34,970	199.8	Mengwe Juu
31100	West Mengwe Ward	104.5	3,640	20,795	198.9	Mengwe Juu
31101	Mengwe Juu		509	2,723		
31102	Mengwe Chini		488	2,508		
31103	Mamsera Chini		363	2,120		
21104	Mahida Mahango		706	3,762		
21105	Mahida Nguduni		525	3,300		
21106	Central Mamsera		417	2,901		
21107	Mamsera Juu		352	2,091		
31108	Holili		280	1,390		
31200	East Mengwe Ward	70.5	2,362	14,175	201.1	Mengwe Kitasha
31201	Manda Juu		331	1,615		
31202	Manda Chini		302	1,532		
31203	Mengeni Chini		406	2,515		
31204	Mengeni Kitasha		529	3,624		
31205	Mashami		443	2,392		
31206	Aleni Chini		351	2,497		
32000	Mkuu Division	67.6	4,989	32,961	487.6	Mkuu
32100	West Mkuu Ward	38.2	2,606	18,081	473.3	Mkuu
32101	Maharo		479	3,276		
32102	Makidi		684	4,563		
32103	Central Shimbi		499	3,561		
32104	Shimbi Chini		287	1,621		
32105	Shimbi Mashami		269	2,282		
32106	Masho		388	2,778		
32200	East Mkuu Ward	29.4	2,383	14,880	506.1	Ubaa
32201	Ikuini		272	1,459		
32202	Usheri		547	3,722		
32203	Kilamfua		349	2,099		
32204	Ubaa		311	1,515		
32205	Mokala		512	3,824		
32206	Ibukuni		392	2,261		
33000	Mashati Division	94.0	5,193	34,039	362.1	Mashati
33100	South Mashati Ward	36.4	2,393	15,078	414.2	Mrere
33101	Kirua		447	2,635		
33102	Kerio		376	2,688		
33103	Mrao		530	3,481		
33104	Keni		376	2,688		
33105	Mrere		664	3,586		

ROMBO DISTRICT (2)

		Area(km²)	No. of families	Population	Pop. density (persons/km²)	Head-quarters
33200	North Mashati Ward	27.0	1,641	10,361	383.7	Mashati
33201	Kisale		413	2,626		
33202	Katangara		636	3,936		
33203	Mahorosha		311	2,003		
33204	Msaranga		281	1,796		
33300	Mashati Olele Ward	30.6	1,159	8,600	281.0	Olele
33301	Kooti		243	2,174		
33302	Kilema		311	2,077		
33303	Marangu		311	2,333		
33304	Kitowo		294	2,016		
34000	Usseri Division	140.8	6,476	38,208	271.4	Usseri
34100	South Usseri Ward	47.5	1,514	7,755	163.3	Samanga
34101	Kirongo Chini		576	3,647		
34102	Samanga		537	2,467		
34103	Kirongo Juu		401	1,821		
34200	Central Usseri Ward	77.5	3,517	20,730	267.5	Usseri
34201	Lesoroma		498	2,825		
34202	Msinga		283	2,125		
34203	Kingachi		302	3,003		
34204	Kwalekamu		403	2,408		
34205	Leto		361	770		
34206	Ubetu		622	3,683		
34207	Kahe		545	3,213		
34208	Ngaseni		503	2,700		
34300	North Usseri Ward	15.8	1,445	9,723	615.4	Kibouni
34301	Nanjara Kibouni		308	2,536		
34302	Nanjara Msankai		303	2,129		
34303	Nanjara Ulaurai		401	2,434		
34304	Nanjara Nayeme		433	2,624		
35000	Tarakia Division	27.0	595	6,094	225.7	Tarakia
35100	Tarakia Ward	27.0	595	6,094	225.7	Tarakia
35101	Kikilewa		277	4,225		
35102	Mbomai		318	1,869		

PARE DISTRICT (1)

		Area(km²)	No. of families	Population	Pop. density (persons/km²)	Head-quarters
40000	PARE DISTRICT	7,900.0	35,170	192,289	24.3	Same
41000	Ugweno Division	584.6	5,470	29,266	50.1	Ugweno
41100	Kileo Ward	337.4	756	4,095	12.1	Kileo
41101	Kileo		244	1,952		
41102	Kifaru		279	1,414		
41103	Jipe		233	600		
41104	Kivisini		-	129		
41200	Mwanga Ward	75.9	1,268	7,318	96.4	Mwanga
41201	Mwanga		266	1,203		
41202	Uwani/Kiruru		218	1,267		
41203	Kangongo		241	2,291		
41204	Bora		270	1,250		
41205	Handeni		273	1,307		
41300	Msangeni Ward	66.6	1,849	9,969	149.7	Msangeni
41301	Msangeni		274	1,372		
41302	Mamba		218	1,005		
41303	Simbomu		268	2,658		
41304	Mruma		178	890		
41305	Lambo		299	888		
41306	Shigatini		330	1,660		
41307	Mfinga/Ndambwe		282	1,496		
41400	Kifula Ward	104.7	1,597	7,884	75.3	Ugweno
41401	Raa		216	1,071		
41402	Mwaniko		285	1,434		
41403	Uchame		272	1,358		
41404	Kisanjuni		354	1,772		
41405	Masanbeni		247	1,238		
41406	Mangio		223	1,011		
42000	Usangi Division	907.7	6,949	36,214	39.9	Usangi
42100	Lembeni Ward	358.0	3,248	14,276	39.9	Lembeni
42101	Ngujini		275	1,479		
42102	Songoa		230	988		
42103	Changale		201	1,012		
42104	Kilomeni		315	2,084		
42105	Sofe		270	1,675		
42106	Lembeni		591	2,895		
42107	Kisangara		460	1,339		
42108	Zinga		396	1,289		
42109	Kiruru		255	1,029		
42110	Mbambua					
42111	Kiverenge		255	486		

PARE DISTRICT (2)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
42200	Kigare Ward	104.6	1,081	7,278	69.6	Usangi
42201	Kigare		251	2,032		
42202	Ndanda		251	2,056		
42203	Kilaweni		307	1,840		
42204	Kilongoya		272	1,350		
42300	Kilongwe Ward	178.4	2,128	10,983	61.6	Ndorwe
42301	Kimbale		275	1,777		
42302	Mshewa		254	2,206		
42303	Vugha		264	772		
42304	Lomwe		270	1,339		
42305	Ndorwe		262	1,742		
42306	Kiriche		263	888		
43307	Mbore		260	913		
43308	Chomvu		280	1,346		
42400	Kwakoa Ward	266.7	492	3,678	13.8	Kwakoa
42401	Kwakoa		338	1,951		
42402	Toloha		154	1,019		
42403	Kigongoni		-	708		
43000	Mwembe/Mbaga Div.	2,818.3	9,419	45,451	16.1	Same
43100	Kirya/Mbaga Ward	468.7	368	3,939	8.4	Kirya
43101	Kirya		106	528		
43102	Marwa		-	988		
43103	Kiticha Mungu		-	1,317		
43104	Shauri Moyo		262	1,106		
43200	Mwembe/Vudee Ward	262.6	1,808	10,581	40.3	Mwembe
43201	Vudee		333	1,688		
43202	Ndolwa		245	1,125		
43203	Bangalala		410	2,050		
43204	Mwembe		566	2,828		
43205	Ruvu/Mferejini		254	1,294		
43206	Jitengeni		-	1,596		
43300	Mshewa Ward	585.6	1,394	6,728	11.5	Marindi
43301	Kwizu		273	1,365		
43302	Mtunguja		264	1,269		
43303	Marindi		300	1,307		
43304	Manka		306	1,532		
43305	Mteke		251	1,255		

PARE DISTRICT (3)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
43400	Kishiwani/Msindo Ward	1,434.8	1,437	9,204	6.4	Kishiwani/ Barazani
43401	Duma		254	1,289		
43402	Mbakweni		287	1,434		
43403	Msindo		294	1,470		
43404	Kisiwani/Barazani		338	3,690		
43405	Mkonga/Ijinyu		264	1,321		
43500	Same Ward	66.6	4,412	15,000	225.2	Same
43501	Vumari/Kizungo		-	-		
43502	Njoro/Mgagao		-	-		
44000	Chome/Suji Div.	1,879.9	2,511	18,036	9.6	Makanya
44100	Makanya Ward	1,080.9	760	5,442	5.0	Makanya
44101	Mgwasi		195	1,640		
44102	Makanya/Kitivo		386	2,647		
44103	Jitengeni		179	1,155		
44200	Chome Ward	118.0	700	4,132	35.0	Mhero
44201	Gwanga		172	788		
44202	Mhero		182	1,174		
44203	Marieni		181	705		
44204	Kijoumu/Mpatwa		165	1,465		
44300	Suji Ward	342.5	557	4,545	13.3	Malindi
44301	Malindi		182	1,555		
44302	Gonjanza		195	1,617		
44303	Tae		180	1,373		
44400	Hedaru Ward	338.5	494	3,917	11.6	Hedaru
44401	Gavayo/Saweni		180	1,005		
44402	Hedaru		314	2,161		
44403	Mabilioni/Gune		-	751		
45000	Mamba/Vunta Div..	697.3	6,269	36,588	52.5	Manga
45100	Bwambo Ward	80.0	1,836	10,476	131.0	Mpinji
45101	Kirongwe		257	1,285		
45102	Mpinji		323	2,880		
45103	Sambueni		288	1,440		
45104	Bwambo		333	1,687		
45105	Mweteni		378	1,888		
45106	Vungwama		257	1,296		

PARE DISTRICT (4)

		Area(km^2)	No. of families	Population	Pop. density (persons/km^2)	Head-quarters
45200	Mwemba Ward	83.0	862	4,289	51.7	Manga
45201	Kambeni		282	1,409		
45202	Goha		301	1,507		
45203	Manga		279	1,373		
45300	Vunta Ward	184.6	1,481	7,005	37.9	Mwapapa
45301	Kikongaye		379	1,893		
45302	Idaru		394	2,073		
45303	Vunta		450	1,749		
45304	Mwapapa		258	1,290		
45400	Bendera Ward	172.3	881	7,411	43.0	Bendera
45401	Bendera		264	1,322		
45402	Mvure/Kongeni		617	4,340		
45403	Mgamdu		-	1,749		
45500	Ndungu Ward	177.4	1,209	7,406	41.7	Ndungu
45501	Usambara		283	1,435		
45502	Kangorokoro		309	1,543		
45503	Ndungu		617	3,086		
45504	Karamba		-	1,342		
46000	Gonja Division	1,012.2	4,552	26,734	26.4	Gonja
46100	Vuje Ward	81.1	1,216	6,019	74.2	Mrango
46101	Mtenga		364	1,824		
46102	Vuje		286	1,367		
46103	Mrango		280	1,398		
46104	Mvaa		286	1,430		
46200	Mtii Ward	63.5	1,865	10,601	166.9	Mtii
46201	Mtii		265	1,756		
46202	Mafingiro		286	1,430		
46203	Bombo		275	1,675		
46204	Mjema		265	1,867		
46205	Lungulu		265	1,325		
46206	Kanza		244	1,219		
46207	Nyombo		265	1,329		
46300	Gonja/Maore Ward	867.6	1,471	10,114	11.7	Gonja
46301	Kadand		268	1,280		
46302	Mpirani		302	1,562		
46303	Maore		636	1,600		
46304	Kilimawe		-	1,600		
46305	Mheza		-	1,202		
46306	Makokone		-	1,165		
46307	Misufini		265	1,705