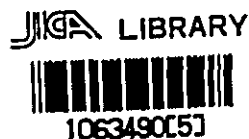


REPORT OF JAPANESE PLANNING TEAM  
FOR  
KIVUYANDARO INTEGRATED REGIONAL DEVELOPMENT

PAGE 275

WORLD INTERNATIONAL COOPERATION AGENCY

REPORT OF JAPANESE PLANNING TEAM  
FOR  
KILIMANJARO INTEGRATED REGIONAL DEVELOPMENT



MARCH, 1975

JAPAN INTERNATIONAL COOPERATION AGENCY

国際協力事業団	
受入 月日 1984. 5. 16	416
登録No. 04640	36
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## Foreword

In response to the request from the Government of the United Republic of Tanzania, the Japanese Government decided to undertake the surveys necessary for scheming the Kilimanjaro Integrated Regional Development Plan related to the Tanzania Third Five-Year Development Plan and the Japan International Cooperation Agency, the government-authorized implementing agency for international cooperation, also decided to make the survey.

The Japan International Cooperation Agency organised a Team for Kilimanjaro Integrated Regional Development Planning, headed by Mr. Motonaga Ohto (Special Advisor of JICA) and consisted of 9 experts under government basis.

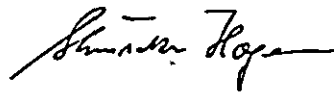
The Planning Team conducted field surveys of the Kilimanjaro Region and other areas over the period from November 20th to December 20th of 1974 and during this period, the Team had discussions with a large number of persons concerned, including those of the Tanzanian Government and those of the Kilimanjaro Regional Office and collected various data.

The report hereby submitted has been prepared by the team, basing upon the results of previous surveys and the observation of the present team, in order to formulate proposals and advices for planning integrated regional development.

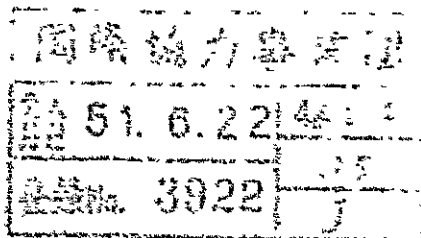
If this report can serve as an aid for the scheming and implementation of the Third Five-Year Development Plan by the Tanzanian Government and the Kilimanjaro Regional Office and at the same time, provide a suggestion in the propulsion of international cooperation toward the United Republic of Tanzania by the Japanese Government, there shall not be any delight exceeding this.

On this opportunity, I wish to express my hearty thanks to all participants concerned of the Tanzanian Government and the Kilimanjaro Region who did not spare their sincere cooperations in the implementation of this survey and also to various Japanese Government agencies and institutions for their kind services rendered in the surveys, preparations, dispatch of personnels.

March, 1975



Shinsaku Hogen  
President  
Japan International  
Cooperation Agency



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## I. Introduction

In 1971, as a technical cooperation of Japan on the development of the Kilimanjaro Region, the International Development Center of Japan, entrusted by the Japanese Government, carried out the comprehensive development survey of the said region and submitted the Report titled, "The Development of Tanzania and Possibilities for Japanese Cooperation (with special reference to the comprehensive development of the Kilimanjaro Region)".

In 1973, the Overseas Technical Cooperation Agency of Japan (Reorganized to Japan International Cooperation Agency in August, 1974), entrusted by the Japanese Government, performed surveys of the agricultural development in the Kilimanjaro Region and on the basis of this result, the Japan International Cooperation Agency dispatched a mission in November, 1974 and exchanged the Record of Discussions with the Government of the United Republic of Tanzania and it led to the performance of the future agricultural cooperation based on this Record of Discussions.

In November 1974, the Japan International Cooperation Agency, entrusted by the Japanese Government, conducted a survey of small-scale industry development in the Kilimanjaro Region upon reentrusting the survey work to the International Development Center of Japan. If there shall be a request from the Tanzanian Government in the future for the performance of the project components proposed in this report, the Japanese Government will be subject to examining their implementation cooperation.

The Japanese Planning Team for the Kilimanjaro Integrated Regional Development (Hereinafter called the Planning Team) performed its work in close connection with the aforementioned Agricultural Record of Discussion Mission and the Small-Scale Industry Development Study Team. Therefore, both the implementation of agricultural cooperation based on the Record of Discussion and the report of the Small-Scale Industry Development Study Team from a part of the report and proposal of the Planning Team.

The Planning Team understood that the Tanzanian Government was aiming at an integrated development which attached importance to coordination on the scheming of the Kilimanjaro Integrated Regional Development since the conventional project by project development had not necessarily been efficient.

This report, complying with socialism, decentralization, self reliance and Ujamaa/ Cooperatives which are the most basic policies of the country, focuses its points on the present state, problems and development potentials which are relating to the development programme preparation of the Kilimanjaro Region, coordination problems which are necessary for elevating development efficiency and development method of main sectors.

In this meaning, this report is an advice for important matters on the scheming and implementation of the Kilimanjaro Integrated Regional Development.

### 1. Kilimanjaro Regional Economy of the Third Five-Year Plan Period (Background of the Integrated Regional Development Planning)

#### (1) General aspects

The area of the Kilimanjaro Region is 13,200 square kilometers and occupies 1.49% of Tanzania (Mainland). The estimated population for 1974 is 819,300 people and occupies 5.7% of Tanzania (Mainland). The arable land area is 2,820 square kilometers and the arable land percentage is 21.22%.

This region embraces Mt. Kilimanjaro and this fact has a great influence on the economy of this region. The rainfall is great on the hillsides, the temperature is comparatively low and the population density is high. The lowlands in the environs are of savanna which are characterized by dryness and high temperature. The population density here is low.

The economy of the Kilimanjaro Region was developed in the past. It can be said to have been most developed among the various regions of the United Republic. This has been ascertained by the high income standard and the high education level. The main industries which sustained this high income standard were as follows.

- (a) Production of foodstuffs
- (b) Export-oriented agriculture and its related industries
- (c) Livestock-farming

The most important among foodstuff crops are banana and maize. Banana is mainly grown in highland together with coffee. Maize is grown in comparatively low areas. Besides these, there are wheat, various pulses, etc., and their production volumes have been sufficient for feeding the population. The main products of export-oriented agriculture are coffee, sisal and cotton and these have contributed a large amount of cash income to this region. Stock-raising is popular as similarly as in other regions and under the survey of 1972, there were 622,000 heads of cattle and 136,000 sheep. The number of cattle is close to the population of people. They are mainly raised as dairy cattle in highlands and as beef cattle in lowlands. The manufacturing industry is still undeveloped and it only occupied 7% among the GDP of the Kilimanjaro Region in 1967. Recently, however, this historical development pattern comes to a turning point. It seems to be like a "Stagnation". We must find out what sort of phenomenon it is and if it is a stagnation, we must overcome it and discover a method of restoring the development trend again.

The Planning Team considers that this turning point has been brought about by population increase. The population which had been 353,500 people in 1948 became 473,900 in 1957 and further became 652,700 in 1967. The population increase rate during these 20 years has been 3.3% a year. This high population increase rate must be due to the high birth rate and stabilized social condition, high income standard and declined death rate due to development of medical treatment. The population increase rate of 3.3% per annum is close to the limit when biologically observed.

When the population increases, it is necessary that various economical resources increase at the same rate or more. The traditional mechanism which hitherto developed the economy of the Kilimanjaro Region and gave birth to high income standard has reached the stage where they could not be realized. Considering the facts that arable lands could not be expanded so much and the production per unit area has already reached a high standard for a traditional agriculturing method, it is believed that a new production element is necessary

for future development. In other words, it has not reached the stage where scientific technique and modern capital investment are needed. Here lies the significance of the "Kilimanjaro Integrated Regional Development Plan". In other words, this plan is not merely for furnishing the method of feeding the rapidly increasing population but must be one which opens up the future of new development upon overcoming the historical turning point.

On the one hand, the increase of population brings about the increase of labour power which is the most vital means of production, while on the other hand, it brings about the increase of consumers. Moreover, when the increase of labour power ties up with the increase of other production means, it becomes the subject of economic development, however, in case there are no increase of other production means, it will bring about the increase of unemployment.

(2) *Mode of population increase in the Kilimanjaro Region and its economic impacts*

The residents in the Kilimanjaro Region generally have a high education standard and are diligent and are endowed with a progressive spirit. This fact should be particularly emphasized and the characteristics of these residents are the motivities which bring about a high economic growth and at the same time, they are the consequences of the developed economy. This concerns not only the future of the Kilimanjaro Region but also the future of the United Republic of Tanzania.

The rapid increase of population is a common phenomenon to all developing countries after World War II and Tanzania is by no means an exception. The population increase rate of Tanzania of 2.7% per year is at the average or slightly above the average standard of developing countries. Nevertheless, it can be said that the population increase rate of the Kilimanjaro Region belongs to the highest ratio group.

If the increase rate has been maintained after the 1967 population census up to now, and if no changes are to take place up until 1980 which is the target year of the Third Five-Year Plan, the population will become 846,000 people in 1975 and about 1 million people in 1980. It is supposed here that there will be no social increases and decreases. The Devplan has estimated that the population in the Kilimanjaro Region will become 850,000 people in 1975 and 1,021,000 in 1980 (See Table 1) due to the population increase ratio of 3.73% per year. This population increase will have vital effects as follows in the Kilimanjaro economy in the Third Five-Year Plan Period.

- (1) Effects on income standard per person.
- (2) Effects on demand and supply of consumption goods.
- (3) Effects on demand and supply of labour power.

The effects on the income standard per person will be the declining of income standard per person unless a GDP growth exceeding the population increase rate is maintained. However, it can be considered that this problem is not so important for the time being because:

- (a) In the short period of 5 years, the minute increase or decrease of average



income does not have an important meaning and it will do if a dynamic growth factor is discovered.

- (b) To maintain the present level of income standard per person or raise it in the Kilimanjaro Region is not particularly difficult.

For example, if the marginal capital coefficient is to be 2.5, the necessary investment rate for realizing the growth rate of 3.73% is 9.33%. This is not particularly high for the Kilimanjaro Region.

### (3) Change of demand and supply of labour power

As one of the economic impacts which population increase brings about, there is the increase of the supply of labour power. In population increase, the increase of labour force supply is more direct and inevitable, while the increase of labour force demand is more indirect and relies upon many other factors. Therefore, the increase of labour power supply shall be studied here as the subject.

Supposing that the labour power increase ratio is 40% in the light of the already studied population increase, the number of labourers of the Kilimanjaro Region increases from 12,000 to 15,000 persons every year and during the planned period, an increase of about 81,000 persons will be made (See Table 2.).

This labour power must be absorbed by the employment opportunity which is to be newly created.

It is desirable that the newly created employment opportunity here be that of high productivity and moreover, that which has conspicuous propagation effect to growth. If this employment opportunity is larger than the new labour power, it will bring about "Labour power shortage" and when smaller, the origination and increase of those unemployed will be seen.

In case of the latter, it will become the population pressure of originating latent unemployment in rural areas and actual unemployment in urban areas. This is a problem of whether or not unemployed will increase and a much more serious problem than whether or not unemployed will exist.

When shifting the eyes to the demand aspect of labour power, the employment after 1966 and up to 1971 is as shown in Table 3 and the sector-wise composition of employment is as shown in Table 4.

The number of labour power supply in 1971 was about 320,000 people. Among this, the employment was about 30,000 persons and the balance of about 290,000 persons were own account workers and the majority can be considered as those engaged in farming. Among the own account workers, 90% which corresponds to 260,000 persons can be deemed as those engaged in farming.

In 1975 which is the base year of the Third Five-Year Plan, the number of labourers increased in comparison with 1971, however, it may be justifiable to consider that there was not a great change in the sector-wise composition of employment.

In what sector should the increasing labour power be absorbed? In other words, which sector should be preponderantly developed and the new labour power be absorbed or is the economic development possible to the extent of absorbing this? This shall be determined by the development speed and labour intensive degree of each sector.

The absorption of new labour power is performed at the so-called "Employment" division and also at the own account division. Furthermore, it is also performed in the sectors of farming, industry, service, etc. If the labour power of 13,000 persons is to be absorbed in the employment division of a manufacturing industry, how much capital investment will become necessary?

The project of Industrial Estate in Moshi which the Tanzania Investment Bank proposed in 1974 sets the total fixed capital at 4,300,000 shillings and the number of labourers is 230 and the capital equipment ratio per person is 18,700 shillings. If the new labour power of 13,000 persons is to be absorbed under such a method, the annual investment of 243,000,000 shillings will be necessary. By the way, the capital invested in the manufacturing industry during the Second Five-Year Plan is 56,000,000 shillings, and in the fiscal year plan of 1974/1975, it is 4,600,000 shillings.

In industrial development, one with a lesser capital equipment ratio should be selected, however, since the ratio of labour power which the industry absorbs is not generally high against the investment capital, it is unlikely that the problem during a short period be solved only by industrial development.

The sector with the maximum potentiality of absorbing labour power is agriculture. It may be absorbed through the more intensive utilization of existing farm land and the opening of new land for agriculture use. Although it is not easy to quantitatively estimate this, it is considered that the latter has greater potentiality. However, it is considered to be of difficulty even for agriculture to absorb all or a great majority of the labour power which is increasing at the rate of 13,000 persons. The sector of various services which includes tourism is the third sector capable of creating employment opportunities. However, the labour power which can be absorbed by tourism development relies upon many factors and the development of the other services sector relies much upon the development of agriculture and industry. The thing which has been made clear under the above-mentioned examination is that the possibility of the supplying rate of labour power exceeding the increase of demand is high. As a result, it will bring about the increase of the unemployment or outflow of labour power from the region. Here, the long-term basic strategy of the Kilimanjaro Regional Development comes to distinguish itself. It means the increase of capital investment and preferential development of sectors or the technical system with a large labour power absorption. Moreover, this labour power increase trend is not to end in 5 years. An examination from a further long-term point of view must be made.

In case the labour power supply runs into excess, it can be considered that there are no reasons for retaining it all within the region. If the outflow of labour power to the outside of the region is systematically promoted along with the productive objectives, it will mean that the younger generation endowed with a progressive spirit will be contributing in the development of Tanzania as a whole.

(4) Change of food demand and supply

Population increase will as a matter of course bring about increase of consumption demand. It is considered that the important things here are housing and food. Here, we will take up food and study its demand and supply.

In 1972, the production volume of maize in the Kilimanjaro Region was 40,000 tons and that of total cereals was 64,610 tons. The population for this year was about 768,000 people. In the light of the estimated population of 1,021,000 people in 1980, that is, the increase rate of 32.9%, the production volume of 1980 necessary for maintaining the food consumption amount per person at the current level (1972) is as shown in Table 5.

Although Table 5 is a rough estimate, it has the following meanings.

- (a) Concerning the production in 1972, it may be said to be a relatively good year in the past several years as a whole. But, since the production amount per person for 1972 cannot be said to be particularly large, the necessary production volume of 1980 in Table 5 must be achieved by all means.
- (b) The agricultural production of the Kilimanjaro Region has severely fluctuated every year hitherto. This is mainly due to the weather. Although the fluctuation of production amount itself has an important impact, what we wish to take up here is the problem of productivity standard and irrespective of short-term changes, the long-term production volume must be increased.
- (c) The production volume mentioned above is the numerical value which has been obtained on the assumption that food was to be self-supplied within the region. If the acquisition of "foreign currency" by tourism, export of cash crops, export of industrial products, etc., is made, the continued domestic import of food will be justified. This will be up to the judgement of the Tanzanian Government.

Food production increase in the supply aspect will be made by increase of production per unit area and by expansion of arable land area, or in certain cases by alternation of crops. It may be possible to realise production increase of food at an annual rate of 3.73% in the Kilimanjaro Region. However, the production increase at the annual increase rate of 10% as envisaged in the plan of the Regional Office would be difficult to realize without expansion of arable land in lowland areas.

The food demand will certainly and continuously increase even after the Third Five-Year Plan. In order to solve this problem, efforts for preventing fluctuation due to weather and the efforts for raising the basic standard of productivity must be continued. From a long-term point of view, research and experiment for the both efforts may have to be accumulated.

Table 1. Population estimation

(Unit: 1,000 persons)

	Mainland	Kilimanjaro Region
1948	7,480	354
1957	8,789	474
1967	11,959	653
1968	12,282	674
1969	12,613	697
1970	12,954	720
1971	13,304	743
1972	13,663	768
1973	14,032	793
1974	14,411	819
1975	14,800	850
1976	15,199	882
1977	15,610	915
1978	16,031	949
1979	16,464	984
1980	16,908	1,021

Notes: Figures for 1948, 1957 and 1967 are according to the Population Census.

Figures for 1968 to 1974 are based on the assumption that the annual increase rate for the Mainland is 2.7% and that for the Kilimanjaro Region is 3.3%.

Figures for 1975 to 1980 are based on the assumption that the annual increase rate for the Mainland is 2.7% and that for the Kilimanjaro Region is 3.73% according to the Devplan Estimation.

Table 2. Increase of the labour power supply of the Kilimanjaro Region

(Unit: 1,000 persons)

	Labour power supply	Increased number
1974	327.8	12.2
1975	340.0	12.7
1976	352.7	13.1
1977	365.8	13.7
1978	379.5	14.1
1979	393.6	14.8
1980	408.4	
Total (Plan period)		80.6

Notes: The population was supposed as Table 1 and the labour power ratio was averagely and marginally supposed as 40%.

Table 3. Employment in the Kilimanjaro Region

(Unit: Persons)

1966	25,734
1967	26,626
1968	26,356
1969	27,893
1970	27,123
1971	30,094

Notes: Obtained from "Survey of Employments and Earnings 1971" (Survey performed on establishments with more than 10 persons as objectives.)

Table 4. Sector-wise composition of employment in the Kilimanjaro Region for 1971

(Unit: Persons)

Agriculture	12,921
Mining and quarrying	280
Manufacturing	2,119
Public utility	1,488
Construction	4,234
Commerce	1,523
Transport and communications	1,094
Finance	220
Public administration and other services	6,215
<b>Total</b>	<b>30,094</b>

Notes: Obtained from same data as for Table 3.

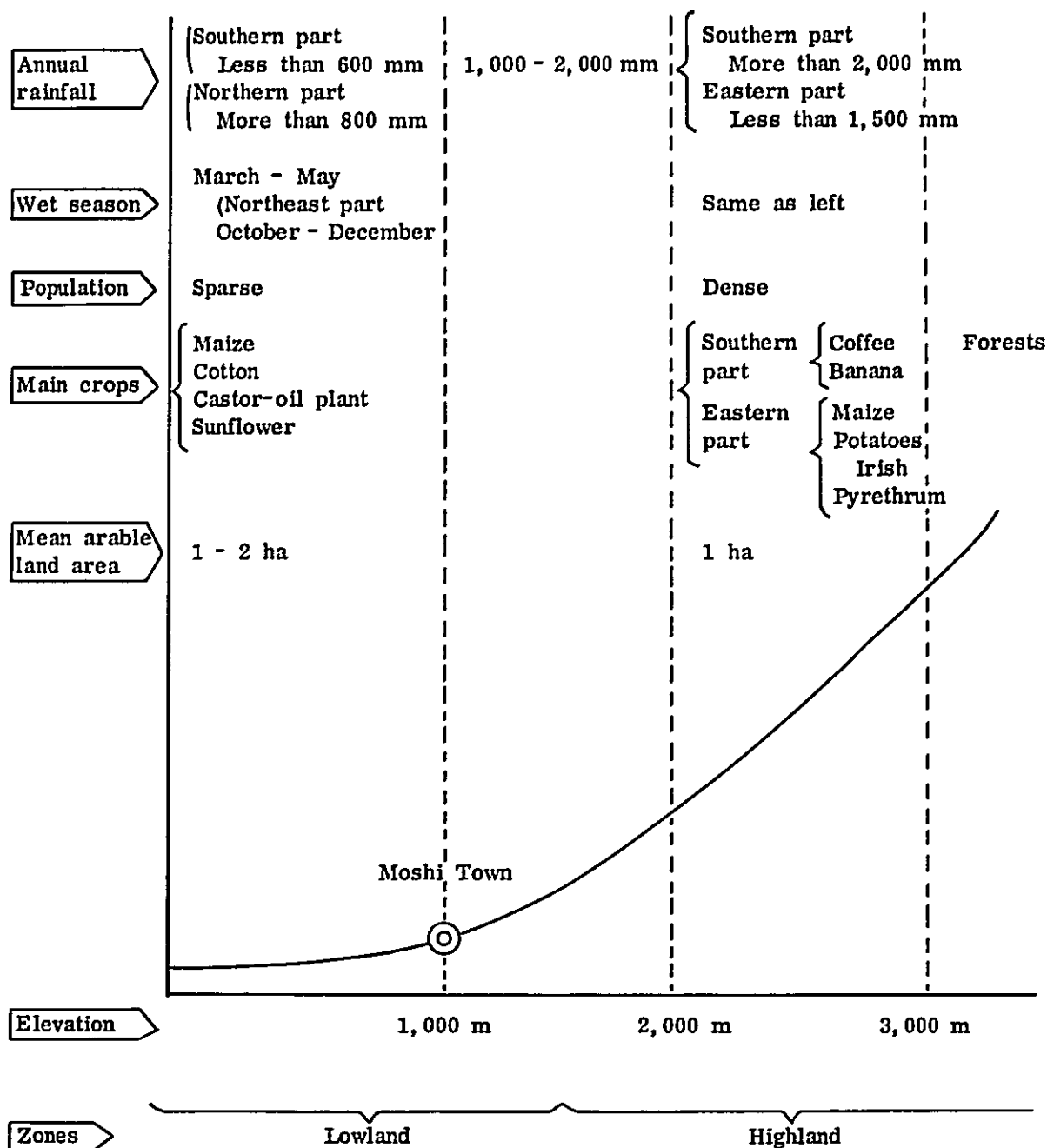
Table 5. Production volume of food crops

(Unit: Ton)

	Actual results of 1972	Necessary production volume for 1980
Maize	40,000	53,176
Millet	6,000	
Wheat	12,540	
Paddy	4,500	32,717
Barley	370	
Mixed beans	1,200	
<b>Sub total</b>	<b>64,610</b>	<b>85,893</b>
Cassava	3,000	
Potatoes Irish	10,000	
Sweet potatoes	3,000	
<b>Sub total</b>	<b>16,000</b>	<b>21,270</b>
Vegetables	3,500	
Onions	600	
<b>Sub total</b>	<b>4,100</b>	<b>5,451</b>
Bananas	342,000	454,655
<b>Grand total</b>	<b>426,710</b>	<b>567,269</b>

Notes: The necessary production volume for 1980 means the production volume required for maintaining the consumption amount per person in the year of 1972. In this case, it has been supposed that the crop component ratio is fixed.

Fig. 1. Geographical characteristics of the Kilimanjaro Region



## 2. Assessment concerning main development potentials

### (1) Human resource

In comparison with other regions, the residents of the Kilimanjaro Region are more educated and are endowed with a progressive spirit.

The Planning Team considers that the active utilization of this human resource is the key to the regional development and, furthermore, to the entire development of Tanzania. In other words, the solution of the population pressure problem in the Regional Development Plan is simultaneously brought about by the participation of new and competent labour power.

During the period of the Plan, the population of 850,000 persons (1975 estimate) is estimated to increase to 1,021,000 persons in 1980. The origination of new labour power during this period is estimated at 80,600 persons.

### (2) Land resource

The Kilimanjaro Region (area of 13,200 square kilometers) is divided into the Highland and Lowland zones according to its geographical conditions.

Land is mostly used for agriculture utilizing the natural conditions of the localities. (See Fig. 1.)

The National Park centred around Mt. Kilimanjaro (5,963 m) is a world-famous mountain area and together with Lake Nanyara and Ngorongoro of the Arusha Region, it is a precious tourism resource. However, due to lack of accommodation facilities, etc., tourism development has not yet gained satisfactory results.

### (3) Water resource

The Highland is gifted with rainfall and the Lowland is savanna, however, the water utilization of Nyumbaya Mung Lake becomes possible. The water utilization of Lake Jipe which is a natural lake is also possible.

From December 2, 1974, the water resources development survey for agricultural development is to be commenced with technical cooperation of Japan. The survey scheduled for two years period will include observation, collection and analysis of hydrological data and ground water investigation.

### (4) Agriculture

Agriculture is the main industry in the region. In the Highland, intensive agriculture of coffee, banana, maize and livestock raising are performed and in the Lowland, maize and cotton are cultivated, but due to the lack of water, there are many unutilized lands.



(5) Industry

With the agricultural products and the timber within the region as the main raw materials, there are the food processing, textile and timber processing industries. However, the weight that they occupy in all industries is only about 4% (Ratio according to the number of employment) and the growth is substantially stagnated. But both the weight and growth are still higher compared with other regions. The operation, marketing and technical level of small-scale industries are still low but there is a potential for future development.

(6) Infrastructure

Trunk roads within the region have been fairly completed but the repair of local roads are necessary. For the future, the construction of roads should become necessary to support the development of agriculture and small-scale industry as well as the improvement of welfare and standard of living of the people.

Although the Tanga Line of the East Africa Railway Corp. which already has a history of 60 years is not so efficient, it plays the basic role of commodity circulation in and out of the region.

3. Proposals concerning the main development objectives

(1) Agriculture

The production target of edible crops (The annual growth rate for each crop is about 10%. See Table 1-4) under the proposal of the Kilimanjaro Regional Office would be possible to achieve by raising yields in the Highland and by expansion of arable area in the Lowland.

(2) Small-scale industry

During the period of the Plan, it is considered suitable to set the target at doubling the number of employment (From 3,000 persons for the basic year to 6,300 persons for the target year).

(3) Transportation and communication

In the Kilimanjaro Region, it is necessary to promote consolidation of economic infrastructures and particularly roads, telephones, etc., in the light of the facts that the population density is specially high locally and there lies a necessity of intensive development centred around agriculture. Therefore, the consolidation objectives (See Table 4-4) proposed by the Regional Office is considered to be suitable.

**(4) Education**

The key of the Kilimanjaro Regional Development lies in the development of human capability. For maintaining the ascending trend of the education spread rate in the present state, the 66.5% proposed by the Regional Office is still low and it is considered that about 67 - 68% is suitable.

**4. Proposals concerning main development strategies**

The Planning Team considers that it is suitable to take up the followings as strategies of the Kilimanjaro Integrated Regional Development.

- (1) Plan the functional allotment and mutual reliance for perfection upon making use of the characteristics of the respective development potentials which the High-land and Lowland possess. Moreover, effectively utilize the city functions which Moshi possesses.
- (2) Place the greatest emphasis on agricultural development for the expansion of employment opportunity for the new labour power and for production increase of foods. The agricultural development of the region should be promoted not only for supplying food within the region but also for exporting food and other agricultural commodities to other regions and abroad. Agricultural development will be made by increase of production per unit area on the already cultivated land and by expanding lands for agricultural use. For this purpose, the implementation of irrigation together with promoting water sources survey and study on selection of suitable crops are essentially needed.
- (3) Develop the small-scale industries for the expansion of employment opportunity for future new labour power. For this purpose, establish an Industrial Development Centre in Moshi and promote Industrial Cooperatives and also strengthen bank functions.
- (4) Develop the Northern circuit which forms a link of the Kilimanjaro and Arusha Regions and plan the promotion of international tourism for contributing to the promotion of international mutual understanding and friendship and at the same time to the improvement of international balance of payments.
- (5) In the consolidation of the economic infrastructure, plan the adjustment among the concrete plans of agriculture, small-scale industries and tourism developments so that the development of each sector is effectively promoted.
- (6) In the consolidation of social infrastructure, particularly, place emphasis on the welfare and education of residents who settle into the new land for agricultural use and exert efforts so that a difference is not made between existing urban or rural parts and newly created community/Ujamma villages.
- (7) For expansion of human capability, improve the spread rate of education.

5. Proposals concerning projects

The Planning Team recommends that the following projects are to be implemented or planned within the Third Five-Year Plan period.

(1) Agriculture

Project Designation	Total Budget (Shs. 1, 000)	Budget 75/76 (Shs. 1, 000)	Period
1) The Kilimanjaro Region Agricultural Development Project (Japanese cooperation) The first stage (2 years)	-	-	74/75 - 76/77
2) Upper Miwaleni Irrigation Scheme (4 years)	6, 000	To be decided after taking into account the progress of the first stage of the above project 1).	
3) Pare Irrigation Plan (Water plan) (2 years)	-	- ditto -	
4) Pangani Demonstration Farm Scheme (4 years)	not estimated	- ditto -	
5) Survey of Farmers' Economy (1 year)	-	To be undertaken with Population Census 1977.	

(2) Small Scale Industries

Project Designation	Total Budget (Shs. 1, 000)	Budget 75/76 (Shs. 1, 000)	Period
1) The Industrial Development Centre (Exclusive of costs of building and land improvement.)	570	285	75/76 - 79/80

Project Designation	Total Budget (Shs. 1,000)	Budget 75/76 (Shs. 1,000)	Period
2) The Financing Scheme (Revised project of the proposal by the Regional Office)	24,677 { Grant 2,100 Banking 22,577	700 { 30 670	75/76 - 79/80
3) The Industrial Estates (Revised project of the proposal by TIB/KIDECO)	1,970	525	75/76 - 79/80

(3) Tourism

Project Designation	Total Budget (Shs. 1,000)	Budget 75/76 (Shs. 1,000)	Period
1 Construction of the Kilimanjaro Airport Hotel	45,000		75/76 - 79/80
2 Construction of the Mt. Kilimanjaro Lodge	18,600		75/76 - 79/80
3 The National Hotel School	6,000		75/76 - 79/80
4 The Traditional Accom- plishments & Folkcraft Centre	6,000		75/76 - 79/80
5 The Kilimanjaro Office of the STS	920		75/76 - 79/80
6 Consolidation of Tourist Roads (Mainly road pave- ment)	405		75/76 - 79/80

(4) Transportation

Project Designation	Total Budget (Shs. 1,000)	Budget 75/76 (Shs. 1,000)	Period
Original proposals by the Regional Office	28,200		75/76 - 79/80

Recommended additional projects

Project Designation	Total Budget (Shs. 1,000)	Budget 75/76 (Shs. 1,000)	Period
1 Asphalt Pavement of Local Main Roads (in areas with a high population density around Moshi and Rombo.) Marangu — Tarakea	4,000	-	75/76 - 79/80
2 Improvement of Traffic Signs	-	-	75/76 - 79/80
3 Measures for the Bicycle Traffic and Pedestrians, Himo — Moshi — Maranya	-	-	75/76 - 79/80
4 Investigation of Transportation Plans	-	-	76/77

## II. Main Sectors

### 1. Agriculture

#### (1) Characteristics of agriculture in the Kilimanjaro Region by area

There are three administrative districts in the Kilimanjaro Region, i.e., Moshi District, Rombo District and Pare District. As for the agriculture, the region's agricultural areas display various characteristics, since the amount of rainfall and their cultivation patterns are determined by the height above sea level. In discussing the characteristics of the region's agriculture, therefore, the region will be divided into two areas on the basis of height, i.e., Highland (approximately 1,500 - 3,000 m) and Lowland (below approximately 1,500 m).

##### (a) Agriculture in the Highland

The Highland is further divided into the Kilimanjaro and Pare piedmont areas. The Kilimanjaro piedmont area forms a central agricultural area within the region, and is commonly called the Highland. This area is divided into the South and the East. The South has a great deal of rainfall, and the major rainy season is between March and May. In this part of the region, a mixed cropping of staples such as coffee (Arabica type) and banana is practiced. In addition, corn, potato, beans and pyrethrum are generally grown together with the above staples. On the other hand, the East has relatively small amount of rain, which falls mainly between October and December. The main staples in this area are banana and corn, which are usually grown with other vegetables and pyrethrum. The amount of coffee cultivation is limited.

The Highland is the major district for growing coffee for export, and has a number of coffee estates. Under the government policies, however, these estates are purchased to be distributed to small farms. Because of the overpopulation in this region, the area managed by small farms is small, and is approximately 1 ha. on average. There is a general shortage of cultivated land. Although the cultivated land is usually developed around farmhouses, there are some farmers who own their land separately in the Lowland. Since the soil in the region is rich and productive, the average farmers do not take a great deal of interest in fertilization. In addition, since this is a slope land, there has been soil erosion, e. g., rain washing away the surface soil, in some areas.

As for the labour force, the Highland has plenty, and the farm work is usually done by family labour. Use of machines and animals is rare, since the cultivated land is on a slope, and mixed cropping is the popular form of agriculture in this region. However, in view of the future improvement of the agricultural productivity, it will be necessary to discuss the possibilities of using small-size farming machines (e.g., hand

tractor), as well as changing the *current mixed cropping system*. Incidence of damages by insects is rare, since chemical fertilizers are hardly used, except for the use of compost for coffee, banana and potatoes. As a result, the use of pesticide is rare in this region.

The majority of coffee, pyrethrum, corn and bean crops are shipped to cooperative unions. In addition, the surplus of self-supplying crops is shipped to the local markets for sale.

As to the raising of livestock in the region, the majority of farms have a certain number of cows (mainly Zeb which is a local variety) for the purpose of milking and producing compost. These cows are fed with wild grass and banana leaves under the drylot feeding system. In addition to cows, the farms raise certain number of goats, pigs and chickens. In this region, however, the degree of enthusiasm for promoting sales through increasing the number of livestock is low. Instead, livestock is raised for the mere purposes of domestic consumption and possessing a private property.

In the mountain area of Kilimanjaro, there are numerous streams. Since most of them have water even in the dry season, they are utilized as drinking water and for irrigation. In the latter case, the water from the creeks are led down through earth canals to irrigate coffee and banana fields.

(b) Lowland

The Lowland stretches from the city of Moshi to the savanna area in the Pare district, and is divided into the northern and southern areas. The North, which is the area around Moshi, has relatively large population. With a relatively large amount of rainfall, corn and beans are usually raised as staples, and cotton, sunflower and castor seeds as secondary crops. In addition, there are large-scale sisal estates in this area. On the other hand, the South, which is a flat land in the Pare district, has a small population. Since there is an extremely small amount of rainfall, a large part of this area is bush-savanna. In addition, the high alkaline soil restricts cultivation of crops. The staples in this region are corn, cotton, castor seeds and sunflower, and secondary crops include cassava, vegetables and potatoes. As for the planting system, there is a mixed cropping of corn with other crops, as well as single cropping of rice, corn and cotton. The rainy season in the south is mainly March through May, and the natural water from the rain during this period is generally used for irrigation. However, in the areas with relatively weak alkaline soil, e.g., T.P.C. (Tanganyika Planting Company with a sugar cane plantation of approximately 5,200 ha) and E.A.K.C. (East African Kenaf Company with approximately 800 ha, where kenaf, corn and beans are cultivated), irrigation facilities are available and year-round culture is practiced.

The average area managed by small farms in this region is 1 to 2 ha. There are some, however, who own larger areas of more than 2 ha. As for the labour force, family labour is mainly used, as well as

employed labour which is utilized during the period of cultivation, soil preparation and harvest. In addition, large-size tractors are used for cultivation and soil preparation. Animal labour such as cattle and donkeys are also partially put into use.

As for the shipment of agricultural products, cotton, certain amount of corn and rice are shipped to cooperative unions. As to the other crops, the surplus from the domestic consumption is shipped to the local markets for sale.

As for the livestock raising, every household owns several cattle on average. In addition to the above, there are some who raise a certain number of goats, pigs and chickens for domestic consumption. There are even those who specialize in livestock farming with dozens of cattle and goats. The kind of raising method taken by general farms is pasturing. During the period when crops are being cultivated in the fields, these cattle are put to grass in a fallow around farmhouses. After the harvest, however, the cattle are grazing in all lands.

(2) The current situation and problems of farm and livestock production and distribution

The Kilimanjaro Region is one of the major agricultural regions in Tanzania. Its main crops include coffee, sugar, banana, flour, sisal, cotton, corn and rice. As indicated in Table 1-1, the largest portion (42%) of the regions's gross domestic product is registered by crops. On the other hand, the ratio of livestock product is as little as 0.4%, which is the smallest category within the gross domestic product.

Table 1-1. Gross domestic product of the Kilimanjaro Region (1967)

	Moshi/Rombo District	Pare District	Region	Ratio
Crops	168,100	11,500	179,600	42
Livestock	800	1,300	2,100	0.4
Forest	1,100	400	2,300	0.5
Others	112,300	19,000	131,300	30
Rental charges	22,600	2,600	25,200	6
Total	305,700	34,800	340,500	-
Subsidy	68,100	20,400	88,800	21
Total product	373,800	55,200	429,200	100

(a) Farm products

Among various farm products of the region, major cash crops (export



crops) include coffee, sugar, sisal, jaggery, and cotton. As for food-crops (non-export crops), major items are banana, corn, flour, potato, millet, rice and cassava. As indicated in Table 1-2, production of these crops is unstable. Characteristics of the crop production in the region are that it is susceptible to influences from weather conditions (drought) and low price scales, and that there is a considerable degree of fluctuation from one year to the other.

The crops which indicate a low scale both in the international price and production are coffee and sisal. However, the international price of the sisal was re-evaluated since the so-called "oil crisis" at the end of 1973, and its production is expected to rise with an increasing enthusiasm on the part of the producers.

Regarding the major items of cash and food crops, there is a board established for each of the items. The cooperative society which lies between farms is responsible for collection and sales of crops. As far as the staple food such as corn and flour are concerned, there is an official retail price established to protect the consumers. As a result, the net price for the farmers is actually dropping as compared with the increase in the recent commodity prices. With the exception of large-scale farms such as Estates, the majority of small farms are discouraged by the low scale of sales prices, which, as a result, seems to dampen the production increase. Of the production of food-crops, the shipment to market indicates considerable fluctuations from one year to the other, except for cassava, sunflower and millet. The above is shown in Table 1-4. It is obvious, therefore, that the supply of crops is unstable.

Table 1-2. Production of major crops in the Kilimanjaro Region

Year	Unit: ton					
	1968	1969	1970	1971	1972	1973
Sisal	11,150	10,400	8,194	7,500	9,377	
Cotton	1,334	571	8,634	3,477	5,455	
Coffee	24,676	13,522	22,801	20,000	20,305	24,000
Pyrethrum	267	102	92	85	160	
Beans	356	711	934	950	710	733
Sugar	39,606	4,334	34,390	36,000	48,000	55,000
Jaggery	2,903	3,048	3,121	2,800	2,816	
<b>Total export crops</b>	<b>80,292</b>	<b>32,688</b>	<b>74,166</b>	<b>70,812</b>	<b>86,823</b>	
Corn	48,000	40,000	28,000	28,000	40,000	30,000
Millet	4,000	3,000	15,800	15,000	6,000	
Flour	8,500	9,000	6,000	5,500	12,540	
Rice	7,000	7,000	600	550	4,500	3,000
Barley	320	350	1,700	1,700	370	1,800
Beans (Mixed)	2,900	5,000	3,000	4,000	1,300	
Cassava	2,500	3,000	3,500	3,000	3,000	
Potatoes	5,000	10,000	10,500	9,500	10,000	7,000
Sweet potatoes	2,000	1,830	3,000	2,500	3,000	
Vegetables	2,650	2,800	12,000	12,500	3,500	
Onions	360	430	500	200	600	
Banana	184,000	295,000	110,000	100,000	342,000	
Citrus fruits	350	100	130	120	140	
Other fruits	350	400	100	160	650	
Sunflower	120	14	55	60	168	94
Castor seeds	220	95	305	300	220	114
Red pepper	23	25	17	20	30	
<b>Total non-export crops</b>	<b>268,743</b>	<b>342,544</b>	<b>195,707</b>	<b>183,610</b>	<b>428,118</b>	

(b) Livestock products

In this region, livestock are raised for domestic consumption for the most part. As indicated in Table 1-3, among the total number of livestock, the largest portion is registered by cattle (approximately 622,000), followed by chicken (approximately 322,000), goats (approximately 136,000), sheep (approximately 85,000) and pigs (approximately 6,000).

Although it is estimated that the number of cattle includes both dairy and farming cattle, there is no detailed data available to prove it. However, according to the government official in charge of this area, the ratio of dairy cattle against the total number of cattle is estimated to be 50 to 60%. The numbers of sold and slaughtered livestock are shown in Table 1-3. The ratio of sold/slaughtered livestock against the total number of raised stock by category is as follows: cattle 15 - 18%, goats 20 - 57%,

sheep 11 - 45%, pigs 15 - 17%, and chicken 29 - 33%, respectively. It is noted that there is a considerable rate of increase in the number of sold/slaughtered goats and sheep, despite the tendency of decrease in the number of raised stock in these two categories.

Table 1-3. Changes of the numbers of major livestock which are raised and sold/slaughtered in the Kilimanjaro Region

	1970		1972	
	No. of head	No. of sold/slaughtered livestock	No. of head	No. of sold/slaughtered livestock
Cattle	571,149	101,835	621,554	91,015
Goats	156,452	30,868	136,367	77,559
Sheep	92,692	10,141	84,601	37,865
Pigs	6,727	1,038	5,702	967
Chicken	268,167	78,467	321,802	106,765
Eggs	-	201,900 kg	-	223,536 kg

(3) Objectives and strategies of the agricultural development in the Kilimanjaro Region

(a) Objectives

In recent years, the world food situation has presented serious difficulties. With a drastic increase in population which is observed world wide, it is estimated that the world population will reach 7 thousand millions by the year 2,000. Further, according to some meteorologists, the temperature of the earth will continue to drop until 1990, which will result in disastrous harvests. It is an urgent task, therefore, to promote the production increase of food and to improve the degree of self-sufficiency. In addition, there have been changes in the consumption structure of food. Currently, there is a shift from starchy food to animal protein food, which is observed especially in socialist countries. In this connection, it will be essential to recognize the trend of continuous increase in the consumption of livestock products.

Judging from the above-mentioned international environment on food, it seems impossible to secure stable food supply with continued dependence on import. However, the increase of food production involves other areas beyond agriculture. Since the food problem determines not only the regional economy but also the destiny of the Tanzanian economy as a whole, it seems essential to consider this on a national basis. However, there is one thing which should be emphasized here. That is, increase of food production should not be sought at the sacrifice of farmers. In other words, necessary measures should be taken to improve the income level

and environment of farmers, while improving the degree of self-sufficiency of food.

(b) Strategies

In concretely listing up the development strategies according to the objectives of regional development, they are as follows:

- 1) Plan the production increase of foods and establish the staple foods.
- 2) Plan the promotion of stock-raising.
- 3) Plan the securement of agricultural water and the spreading of irrigation.
- 4) Plan the improvement of the income standard of farmers and the construction of a healthy and cultural village environment.
- 5) Plan the promotion of agricultural tests and researches.

1) Production increase of foods

In observing the transition of the production volume in the recent 5 years of the crops for domestic consumption such as cereals, pulses, potatoes, vegetables, fruits, oil crops, etc., it is extremely unstable as aforementioned and in case of drought years, a sharp production decrease is shown. And, in poor crop years considerable amount of food such as maize, wheat, rice, etc., are imported.

On the other hand, the total population of this region had been 653,000 according to the population census of 1967. However, the population continued to increase annually since then and it is estimated at being 768,000 persons in 1972. Moreover, the annual increase rate of 3.73% is anticipated for in the future and it is forecasted as reaching 850,000 persons in 1975 and 1,021,000 persons in 1980.

Therefore, serious food shortage is anticipated in the near future as the production of food cannot catch up with the population increase. Presently, the main edible crops of the residents are maize, banana, pulses, scapes, cassava, wheat, rice, etc., but maize is by far the most important food crop in this region. The Regional Office provides a high priority on the production increase of maize and as shown in Table 1-4, it aims at increasing the production by 10% annually (Annually 4,000 tons) with the year of 1972 as the basis. In other words, against 40,000 tons in 1970, it has set the aimed production volume to 52,000 tons for 1975 (+7,000 tons) and 72,000 tons for 1980 (+27,000 tons). This aimed production volume is considered to be necessary from the population growth rate.

Now, the problem is how the production increase of maize should be attained. Firstly, the method which can be considered as its measures is the increase of yield per unit area in existing arable lands. As already mentioned, the present yield per hectare is average 1,200 kg for the region, but a great difference is observed among districts. It is 1,726

kg for the Rombo district and 1,160 kg for the Moshi district and 860 kg for the Pare district. In other words, in comparison to the mountainous area, it is a problem that yield of the low land is greatly below that of the regional average. There exists about 36,000 ha of maize fields in this region and even when making simple calculation with 1,200 kg as the yield per hectare, in order to attain the 72,000 tons which is the aimed production volume for the year of 1980, it would be sufficient with the present cultivation area if the yield per hectare on the existing arable lands is increased from the present average of 1,200 kg to 2,000 kg. In Moshi and Rombo districts, the increase of yield above 2,000 kg will not be difficult. However, the yield in Pare District may be difficult if present low yield in the district is attributable to the shortage or unsteadiness of rainfall. If it is the case in Pare, maize production in such unfavorable areas might well be converted to other crops more resistant to drought. The resultant decrease of maize production in Pare may well be compensated by growing maize in lower part of the same district by opening up new irrigation areas.

In regards to the suitable site of development, if it is made the land of low use or unused land which adjoin the already cultivated land, operating expenses would be comparatively small and it would be convenient for the daily living of settlers and transportation of agricultural products and the possibility of realization remains high. If the suitable land for development is to be selected from such viewpoints, a high degree of priority should be given to Kirya, Marwa, Naururu, etc., directly under the Nyumba ya Mungu Dam besides the neighborhood of Miwaleni which is south of Moshi town.

In addition, production increase is also necessary on crops other than maize. The Regional Office has set up the production increase target as shown in Table 1-4.

Table 1-4. Production target of edible crops

Name of Crop	(Unit: ton)					Annual growth
	1972	1973	1974	1975	1980	
Maize	40,000	44,000	48,000	52,000		10%
Rice	4,500	4,950	5,400	5,250	7,500	10
Wheat	12,540	13,794	15,048	16,302	22,572	10
Barley	370	407	2,000	2,000	2,000	10
Sunflower	168	202	204	263	433	20
Castor oil plant	220	242	264	286	396	10
Banana	342,000	359,200	376,200	393,300	478,800	5
Pulses (mixed)	1,200	1,320	1,440	1,560	2,160	10
Red beans	1,200	1,320	1,440	1,560	2,160	10
Cow peas	200	220	240	260	360	10
Other pulses	70	77	87	91	126	10
Vegetables	3,500		4,200	4,550	6,300	10
Onions	600	630	660	670	840	5
Red pepper	30	33	36	39	54	10
Citrus fruits	140	168	196	224	364	20
Other fruits	650	715	780	845	1,170	10
Common millet	6,000	6,300	6,600	6,900	8,400	5
Potatoes	10,000	11,000	12,000	13,000	18,000	10
Sweet potatoes	3,000	3,300	3,600	3,900	5,400	10
Cassava	3,000	3,300	3,600	3,900	5,400	10

## 2) Promotion of stock-raising

The demand for livestock products as the supply source of animal protein will increase in and out of this region in the future. On the other hand, the production aspect is severely controlled by productive conditions such as land, feedstuff, etc., and the difficult condition of demand-supply has also appeared in this country. Consequently, it is of urgent necessity to establish the production basis of stock-raising and respond to the increasing demand for livestock products. It is quite easy to mention the "Establishment of the production basis for stock-raising", however, it is also a fact that its realization cannot be made in a brief space of time. All factors such as improvement of breed, prevention of epidemics, irrigation, etc., are indispensable for the establishment of the production basis, however, it is also apparent that a great sum of investment and many years are necessitated. The Regional Office has also hitherto steadily promoted its stock-raising measures.

When this region is observed from natural, economic and social conditions, it can be classified into the mountainous area and the flat area. However, when considering the characteristics of livestock and geographical conditions, it is necessary to plan the promotion of stock-raising preponderantly upon making the mountainous area as the dairy farming area and the flat area as the beef cattle and feedstuff production area.

Nextly, as the preponderant theme which the Regional Office should adopt for increasing the production volume of livestock products, it is firstly necessary to promote the securement measure of material live-  
stocks for breeding. It may be also necessary to recommend the scale expansion of material livestock for breeding to each farming household, however, it would be a better plan if bodies such as the cooperative associations should possess and operate necessary facilities, pasture land and joint meadow. Secondly, there should be the policy for increasing production of feedstuff. Particularly, the thing which is indispensable for the increase of production of milk and meat is the securement of good quality roughage in vast volume under low production cost. Since the area to be devoted to feed production is limited in the Highland, production of feed and grass should be expanded in the Lowland with irrigation and also more effective use of rough-grazing areas. The method of the Cooperative Association or the Government performing mass cultivation of feedstuff crops in place of the farmers and selling them to the farmers at the production cost is also desirable. Thirdly, there is the problem of breed. As already mentioned, with cattle only, there are 620,000 heads raised in this region but has not reached to the extent of making active utilization.

3) Securement of agricultural water and spreading of irrigation

In the Kilimanjaro piedmont of the mountainous region, there are many mountain streams and since surface waters are present even in the dry season, irrigation is performed against agricultural products such as coffee, banana, maize, pulses, vegetables, fruits, etc., under the natural flow system. This is historically old and it is said to have been performed from more than 150 years ago. The farmers possess the water right and locally it is called "Traditional irrigation farming". In the flat area, water right is possessed in the drainage basin of extremely limited number of rivers and surface irrigations are performed for rice and maize. In large plantations of coffee and sugar cane, irrigation by sprinklers or surface irrigation has been performed since the colonial period.

In this region, however, the rainfed agriculture which relies upon natural rainfall is dominating. For production increase of foodstuffs and its stabilized supply, it is necessary to popularize the irrigation agriculture and for this purpose, the development of water resource must be actively promoted and the agricultural water must be secured. As shown in Table 1-5, the Regional Office has also schemed the irrigation plan in the Second Five-Year Plan and is promoting its implementation. According to this irrigation plan, the irrigation planned area amounts to about 27,000 ha for 18 places. The crops subject to irrigation cover a wide range and are maize, beans, vegetables, cotton, rice, sugar cane, peanuts, etc. The water sources are spring water, ground water, surface waters of rivers, dams, lake water, etc., and water rights are secured. Moreover, although the progress rate of this irrigation plan is not clarified, the undertaking should be implemented in the plan scheduled areas during the Third Five-Year Plan period.

Table 1-5. Irrigation plan in the Kilimanjaro Region

Area	Water source	Area acre	Irrigation	Remarks
Kahe	Miwaleni Spring	10,000	Kenaf, maize, beans, vegetables, others	Under execution
Miwaleni	Ditto	2,000	Maize, beans, vegetables, others	"
Uru chini	Rau/Njoro spring	600	Maize, beans, cotton	Completed
Mtakuja	Rau river and Boreholes	200	Ditto	"
Kikafu Chini & Sanya Plain	Boreholes	?	Maize, cotton	Under survey
Msaranga	Flood runoff from Mt. Kilimanjaro	10,000	Maize, cotton rice	"
Pangani valley (Kirya Marwa Naururu Hedaru)	Pangani River under N.Y.M. Dam	20,000	Maize, rice, sugar cane, cotton	Scheduled
Jipe/Butu	Lake Jipe Shunguli Dam	2,000	Maize, beans, cotton, peanuts, rice	"
Gonja	Hingilili river Tia & Kiruka Dam	1,000	Rice, maize, beans, vegetables	"
Kalimawe & Mukomazi Valley	Storage of Mkomazi catchment run off	4,000	Rice, maize, beans, vegetables	"
Makanyeni	Nakombo river Dam	500	Maize, beans vegetables	Under survey
Igoma	Kisiwani river	300	Maize, beans, others	"
Makanya	Saseni river Dam	500	Ditto	"



Area	Water source	Area	Irrigation	Remarks
Muraeni	Kifinyu river	4,000	Maize, beans, others	Under survey
Kileo	Ilimo river or Njoro spring	1,000	Maize, cotton	Scheduled
Mwanga	Mwanga valley flood storage	1,000	Ditto	"
Kisiwani	Improvement of present irrigation method	1,000	Rice, maize cotton	"
Chala	Lake Chala	10,000	Maize, beans, cotton	"

4) Improvement of the income standard of farmers and the construction of a healthy and cultural village environment

It is observed that the income standard of farmers is lowering in recent years due to the population increase and the resultant sub-division of land holding. The price rise of commodities that farmers have to buy is also adverse effect on farmers' economy. For elevating the income standard of farmers, the method of fostering industries of small and medium enterprises and letting them absorb the excess population is also one of the directions, however, as for the agriculture division, it is necessary that every effort should be exerted for the increase of agricultural income. As previously mentioned, official prices have been set up on major agricultural products from the standpoint of consumer protection and due to this, it can be said that the farmers are placed in a disadvantageous position. Therefore, it is considered that it would be desirable if a proper agricultural products sustaining price system can be employed. Moreover, for the farmers who introduce and expand the cash crops for obtaining cash income, it is necessary for the Government to provide protection until the time they are on a paying basis. Oil crops, spice crops and medicinal crops are important as cash products and particularly oil crops which provide not only oil for human consumption but the by-product (oil cake) can be used for animal feed should be encouraged.

Moreover, since there are no statistical data concerning the income of farmers, agricultural operation, etc., in this country, a "Survey of farmers' economy" should be performed and upon clarifying the actual state of the farming household economy and agricultural operation by figures, it is necessary to utilize them in making agriculture policy of the region.

On the improvement of farming village environment, the Government is presently enforcing the UJAMAA policy and under the intention of

reorganizing the present existing scattered villages into the UJAMAA villages by 1977, it is promoting the new village construction. According to this policy, the consolidation of environments which surround the village such as a small water-supply system, school, medical facilities, etc., will be performed so that a healthy and cultural living can be enjoyed and this is indeed a desirable thing. Construction and improvement of roads is especially important not only for marketing of farm products but also for the farmers' welfare.

#### 5) Promotion of agricultural experiment and research

Experiment and researches of this region are performed based on the policy of the country. In other words, an A.R.T.I. (Agriculture Research and Training Institute) is located in 6 places throughout the nation and tests and researches are performed on cultivation methods, soil fertility, insects and pests, breeding and agricultural machinery. In this region, there is an A.R.T.I. in Lyamungu for research on coffee, wheat, vegetables, cereals, pulses, grazing grass and fruits. The Canadian Research Group and Tanzania is promoting joint research (November, 1970 - November, 1975) on breeding of wheat, cultivation, soil improvement and mechanization. There are three sub-stations in the region. Researches on traditional cultivation techniques are performed at the Miwaleni sub-station, testing of seeds and raising of livestock are performed at the Tengeru sub-station and experiments on comparison on varieties of maize, millet and others are performed at the Sambwa sub-station.

In regards to the future direction of agricultural development in this region, as previously mentioned, productivity must be increased mainly through the improvement of the land productivity in already cultivated land in the mountainous area, while on the other hand, the increase of production must be mainly planned through the expansion of agricultural land in the flat area. Research and experiment should, therefore, be carried out along this line.

The main items of research, especially practical application research should be as follows:

- In the Highland, cultivation techniques of fertilizer application, vermin control, crop rotation, labour-saving system for already existing crops and prevention of soil erosion.
- In the flat area, improvement of alkali soil, selection of newly introducing crops, analysis of low productivity of existing arable lands, and water saving cultivation method.

The present equipment and personnel for research should be greatly strengthened to perform these studies.

Studies on various aspects of stock-raising in this region should also be strengthened. And the research and experiments on feed crops and grasses is vital if livestock in this region is to be promoted.

(4) Kilimanjaro Regional Agricultural Development Projects

When relating on the preferable projects (draft) to be implemented in this region in the future which conform to the objectives and strategies of agricultural development, they are as follows.

(a) Outline of projects which should be implemented

1) Development of water resource

Perform development of new water resources centred around ground water for drinking and for livestock besides for irrigation.

2) Development of land resource

Perform development of unutilized or low-utilized lands which have been left alone in the flat area for production increase of maize and feed crops.

3) Physical infrastructure for agricultural production

Construction of irrigation facilities, farm roads, fields, etc., for elevating agricultural productivity in existing arable lands.

4) Extension service for better agricultural techniques and management

5) Seed multiplication and distribution programme

6) Improvement of livestock and consolidation of the multiplication setup

Establish or expand the livestock improvement & multiplication station in order to improve, multiply, preserve and distribute livestock.

7) Promotion of a model production estate

For agricultural crops, encourage a model estate for promoting the grouping of cash crops plantings for modernization of production and for joint process and joint shipment. For livestock products, consolidate a joint use of livestock control facility, a group fattening or group milking facility, pastureland, etc., and encourage a dairy farm or beef cattle production estate which typically establishes the joint production setup.

8) Rationalization of agricultural and livestock products distribution

Establish or expand collecting facilities, storing facilities, warehouses, transport facilities, wholesale market, etc., of agricultural and livestock products.

9) Improvement of farm village environment

Establish and expand drinking and miscellaneous use water, roads and other public facilities for maintaining a high degree agricultural productivity and for constructing a healthy and cultural farming village environment.

(b) Proposal of concrete projects

1) Upper Miwaleni agricultural land development project (Draft)

i. Purpose

Reclaim the bush savanna area which is neglected in the northern part of the Miwaleni spring and south of Moshi town for production of various crops (Maize, pulses, vegetables, cabbages) and fodder crops (Alfalfa, etc.) and perform irrigation for these crops.

ii. Contents

This district is a bush savanna district, however, since it neighbors the cultivated lands of the Highland, the daily living of settlers, transportation of agricultural products, are relatively convenient. Although the soil is of alkali soil, it is weaker in alkalinity than other districts of the flat area. Since the water right of 0.5 m<sup>3</sup>/s has already been secured in the Miwaleni spring as the water source, the agricultural land of about 1,000 acres should be reclaimed upon utilizing this and maize, beans, vegetables and fodder crops are grown with irrigation. Moreover, as work contents, the reclamation of agricultural land, construction of roads and farm roads within the district, establishment of a pumping plant, laying of irrigation canal and drainage canal, building of reservoirs should be performed.

iii. Term

4 years

Initial year

Survey of soil and vegetation; soil classification; scheming of land use, farm management, irrigation, roads, farm roads, etc., utility survey.

Second year

Entire execution plan

Third year

Work commencement

Fourth year

Work completion

2) Pare district agricultural irrigation development basic planning project (Draft)

i. Purpose

Perform survey of the present situation of water resources of the Pare district and of new water resource development and scheme the integrated agricultural irrigation water development basic plan and contribute them to the agricultural development of the flat area.

ii. Perform investigation of ground water as well as river drainage, present condition of water use, land use and present situation of farm management and prepare the "Pare district agricultural irrigation water development basic plan".

iii. Term

2 years

Initial year

Survey of present condition and investigation of ground water

Second year

Preparation of the "Pare district agricultural irrigation water development basic plan".

3) Model irrigation project for Pangani river basic development (Draft)

i. Purpose

As a model development base of the vast development potentials in the downstream of the Nyumba ya Mungu Dam, reclaim agricultural lands with irrigation for planting maize, cotton, sugar cane and rice.

ii. Contents

Although there exist about 20,000 acres of flat land which can be used for agricultural production in Kirya, Marwa, Naururu, Hedaru, etc., located in the downstream of the Nyumba ya Mungu Dam, only a small scale irrigation by natural water-intake of the Pangani river is performed for the present. Besides reclaiming the agricultural land of about 1,000 acres by utilizing a portion of the water right which has already been secured at the Nyumba ya

Mungu Dam as the water source, perform construction of roads and farm roads within the district, establish pumping stations, build irrigation canals and drainage canals.

iii. Term

4 years

Initial year

Soil and vegetation surveys; land classification; plan scheming of land use, farm management, irrigation, roads, farm roads, etc., utility survey.

Second year

Entire execution plan

Third year

Work commencement

Fourth year

Work completion

(c) Present technical cooperations of Japan

1) Term of cooperations

The technical cooperations shall be divided into the First Phase and the Second Phase. The term of the First Phase shall be for two years from December 2, 1974 to December 1, 1976. The term of the Second Phase shall be for several years after December 2, 1976 and on details of projects to be implemented, consultations shall be made between the two countries during the term of the First Phase.

2) Contents of the First Phase Cooperation

- i. Perform survey and observation of water resources, collection and analysis of hydrological data, investigation of ground water, etc., for the purpose of agricultural development.
- ii. Perform test researches on soil improvement, selection of suitable crops and cultivation methods of irrigation crops and non-irrigation crops, establishment of planting system, etc.
- iii. Perform agricultural basic surveys such as land use survey, market survey, survey of actual conditions of farming households, planting survey, etc., of the Kilimanjaro Region.

### 3) Cooperation method

- i. Besides 8 experts (one leader; one each for irrigation & drainage & reclamation engineering, water resource, soil, agricultural economy; 2 for cultivation; 1 for coordinator), short-term ground water experts (2 - 3 persons) shall be dispatched from Japan. In addition, furnishing of equipment and materials such as water resource survey machineries and tools, agricultural machineries, automobiles, agricultural materials, etc., shall be made.
- ii. Trainees from Tanzania shall be accepted in agricultural experiment stations, etc., of Japan

## 2. Small scale industries

### (1) Direction of small-scale industrial development

Within the framework of the Third Five Year Plan based on national development policies of socialism, decentralization and self-reliance, a primary emphasis is placed on the development of *small-scale industries*, and on the promotion of cooperatives among other forms of industries.

Development of small-scale industries can take part in various areas of the regional development, based on the initiative of the region's inhabitants themselves. Through utilizing the locally available materials and satisfying the immediate local demands, i.e., building materials required for housing and school constructions, furniture, household appliances, manufacture and repair of machinery for agricultural and industrial use, the small-scale industrial development can help improve the standard of living of the local people and increase the agricultural productivity. The development, further, can contribute to the improvement of income level of the region, and will result in other significant effects. One of many advantages of small-scale industries is the fact that it does not require a large-scale investment and highly sophisticated techniques for operation. Moreover, placing an emphasis on promoting *industrial cooperatives* will further increase the development effects and will make a significant contribution to the progress of socialism.

The greatest task that the Kilimanjaro Region currently faces is the creation of employment opportunities for the new labour forces. In the region, the importance of industry is greater as compared with other regions, and in fact, there are already a few small-scale industrial cooperatives. In addition, the standard of education within the region is also high. Thus, the Kilimanjaro Region is gradually paving the way for the development of small-scale industries.

The number of population who require new employment during the Third Five Year Plan period is estimated to be 80,600. In view of this availability of new labour force, however, the labour force which can be absorbed into the *development work of small-scale industries* is still small. With a further increase in population/labour force in the future, the initial attempt to multiply the employment opportunities with increasing speed is the major part of the

small-scale industrial development during the Third Development Plan period.

(2) Objectives of small-scale industrial development

It is proposed that the following objectives be set for the small-scale industrial development for the Third Five Year Plan (Kilimanjaro Regional Development Plan).

- (a) To double the number of employment in small-scale industries from the current 3,000 persons (estimate) to 6,300 persons during the plan period. Further, to establish a foundation for the industrial development, so as to provide employment opportunities for the increased labour force in the future.
- (b) To place the primary emphasis on promoting cooperatives among others forms of small-scale industries. It is estimated that 1,400 out of the above-mentioned 3,300 additional working population during the plan period will participate in cooperatives.
- (c) To promote the efficient utilization of available materials within the region, and to improve the productivity of the agriculture and standard of living of the region's people, through production activities of small-scale industries.

The number of industrial workers (establishment with more than 10 employees; Industrial Production Survey 1971) in the Kilimanjaro Region is estimated to be 3,100 for the base year of the Third Five Year Plan (1975), and the almost equivalent 3,000 persons are estimated to be currently (the base year) at work for small-scale industries. Combining the above two, the number of industrial workers in the target year will reach 10,000. In other words, it is possible for the additional labour force of 3,900 persons to be absorbed into the industrial activities. In the latter half of the plan period, inductive effects caused by the development of small-scale industries will promote the production activities of large-scale industries. At the same time, there will be an increase in trade and other areas, so that the demand for the new labour force, combining the above, will be further increased in some degree.

In view of the increased labour force in the future, promoting the increase of employment opportunities and the efficient utilization of available materials within the region are both related with the selection of industries. In other words, types of industry and commodity to primarily promote should be selected according to the following criteria.

First of all, it should be an industry which requires a small-scale investment in equipment. Generally speaking, industries with small-scale investment in equipment are labour intensive and have a small economic production unit, so that they can expand their production scales on a step-by-step basis according to the increase in demand. Further, this type of industry does not require the highest level of managerial and sales capabilities.



Secondly, the commodity has to be one which can be manufactured with relatively unsophisticated techniques, i.e., techniques which can be easily learned. It is necessary, further, that the small-scale industrial workers are able to start the operation with the technique which they already have, and to improve the product quality and diversify their textile products according to the gradual improvement of their skills.

Thirdly, it is desirable for the industry to have an easy access to the locally available materials, as well as having demand within the region. Locally available materials include farm products and timber, as well as products manufactured by large-scale industries, i.e., textile products, leather and plywood, and their secondly processed goods. As to the demand within the region, industries such as machine repair and concrete blocks essentially require supply within the region, whereas it is desirable for wooden products such as school desks, furniture and building materials to have supply within the region.

As for the sub-contracting with large-scale industries and specialities such as wooden products, demand should be gradually sought beyond the regional boundary. In order to realize and promote the domestic export activities, however, improvements in overall areas of management, sales and techniques, i.e., delivery of goods, inventory, purchase programmes of materials, product inspection and quality control, will become necessary.

The industries recommended by the study mission for small-scale industrial development in the Kilimanjaro Region (1974) were selected from the above-mentioned standpoints. (Table 2-1)

Table 2-1

A. New Industries:

1. Foundry
2. Wood Pattern Shop
3. Scrap Metal Sorting
4. Knitting Shop

B. Existing Industries to be Expanded and Improved:

5. Blacksmith for Manufacturing Agricultural Tools and Equipments
6. Machine Shop for Light Metal Engineering
7. Carts/wheelbarrow Manufacturing
8. Tin and Zinc Smith
9. Construction Woodwork Shop
10. Furniture and Fixtures Shop
11. Sandals Shop
12. Tailoring Shop
13. Cement Products Shop Manufacturing L-shape and Flat Construction Materials
14. Pottery Shop

15. Vegetable and Edible Oil Manufacturing from Castor Beans and Sunflower

**C. Subcontracting Small Scale Industries:**

16. Industrial Glove Manufacturing for the Tanzanian Tannery Company
17. Curio and Souvenir Manufacturing for the Tanzanian Taxidermy Company

**(3) Strategies for small-scale industrial development**

It will be appropriate to set the following strategies for small-scale industrial development for the Third Five Year Plan.

- (a) To select those industries or products which should primarily be promoted, and further, to appoint those with a higher priority among the above group of industries and products.
- (b) To provide institutional financing to new investment so as to further promote small-scale industries. In this case, cooperatives will be given a special treatment.
- (c) To implement survey, assessment, planning and programming regarding the development potentialities on a step-by-step basis so as to efficiently develop small-scale industries. At the same time, to make improvements in managerial, managerial, marketing and technical areas. To establish the Industrial Development Centre in Moshi as a Regional Office organization for undertaking these necessary functions.
- (d) To establish the Industrial Estate in Moshi as a base for the total development of small-scale industries, to which a participation of cooperatives will be solicited. As for the management of the Estate, the Industrial Development Centre will provide advisory services.
- (e) To consider the promotion of small-scale industrial development in building infrastructure such as roads and communication facilities.
- (f) To promote the diffusion of education so as to secure the necessary manpower for the future industrial development.
- (g) To consider sub-contracting and outside order to small-scale industries in making Parastatals programmes so as to promote the small-scale industrial development. In order for the small-scale industries to cope with the above situation, the Parastatals together with the Industrial Development Centre will provide guidance for the small-scale industries. In this case, it will be desirable on the part of the Parastatals to charge for their guidance services. (For the time being, payment can be made by the Industrial Development Centre to the Parastatals.)

As already mentioned in the section (2), the appropriate industries

or commodity which should be placed an emphasis in the small-scale industrial development are those indicated in the Table 2-1.

Further, in selecting the specific industries or commodity, the location of these small-scale industries needs to be considered. In urban areas, it will be advantageous to locate machine repair and other relatively sophisticated industries or commodity, and the sub-contracting and outside orders from the Parastatals to these industries will be initiated in a relatively short period of time. As for the rural areas, it will be advantageous to locate industries such as concrete blocks, timber, handicraft and the simple repair of farming tools to meet the demand in the rural area. In those areas where electricity is not available, equipments attached with internal combustion engine can be introduced as far as relatively large-sized machinery such as timber saws are concerned. As for the industries which require the use of small-sized instruments such as portable electric instruments which are expected to spread in the urban areas in the near future, rural areas have a tremendous disadvantage in locating these industries. However, difference in conditions of industrial location which currently exists between urban and rural areas will be dissolved with the dissemination of electricity, roads and telephone equipment.

Those industries with a higher priority include machine repair and woodworking. Particulary the machine repair industry (including the manufacturing of simple parts), in the light of a large number of machinery which are not being used because of a shortage of repair parts, is essential to improve the rate of operation of these machinery.

#### (4) Small-scale industrial development project

Given below are the desirable plans to be implemented as the small-scale industrial development project for the Third Five Year Plan. These projects are interrelated and are closely related with the development status of the other fields such as agriculture, trade and public utility infrastructure, so that it is essential, while keeping in mind the progress status of other fields and maintaining the balance among each project, to break the entire project into small units and proceed on a step-by-step basis so as to enhance the investment efficiency and to avoid possible risks. Although the management control over the project and the guidance for small-scale industries would be best provided by the Industrial Development Centre, establishment of small-scale industries should be initiated by the local people, and any risk which accompanies the industry operation should be borne by the small-scale industries. Without such initiative and the sense of responsibility on the part of the local people involved, development in small-scale industries cannot be expected.

Each project is identical with the one proposed by the study mission for small-scale industrial development in the Kilimanjaro Region (which was organized in the months of November and December of 1974 entrusted by the Japan International Cooperation Agency. The mission was headed by Dr. Koichi Mera of the International Development Center of Japan). For details, read the investigation report compiled by the study mission.

(a) Project No. 1

Financing the small scale industry development  
in the Kilimanjaro Region

The Tanzanian Government and its financial agencies will provide institutional financing for the new investment of small-scale industries during the Third Development Plan period. The necessary capital is estimated to be Shs. 24.7 million. As for the credit conditions, recommendations will be made later in Project No. 2.

Incidentally, even under a shortage in capital, there should be no changes made in the proposed credit conditions, grant conditions for cooperatives (20% of the required capital) and ownfund conditions (25% for private enterprises and 5% for cooperatives). It will be more appropriate, rather, to reduce the number of individual projects/employment target, and to finance high priority projects and those which are ready to start the operation in the nearest future.

(Basis for calculation)

a)	Employment target .....	3,300 persons
	Number of new establishments during the Third Five Year Plan period:	130
	Average number of workers per new establishment:	20
	Number of expanding establishment during the Third Five Year Plan period:	70
	Average number of workers added per establishment:	10
b)	Capital requirement per new unit Per expanding unit	Average Shs. 150,000 Average Shs. 100,000
c)	Institutional financing covers 75% of the capital requirement.	
d)	As for the cooperatives, 20% of the capital requirement will be granted in addition to the above.	
e)	Working capital loans will be required	Shs. 2,702,000

Number of new units x capital requirement per new unit + number of  
expanding units x capital requirement per expanding unit = total capital  
requirement.

$$130 \times \text{Shs. } 150,000 + 70 \times \text{Shs. } 100,000 = \text{Shs. } 26,500,000$$

Breakdown:

a)	Cooperatives .....		Shs. 10,500,000
	(70 units)		
	Grant	20%	Shs. 2,100,000
	Credits	75%	Shs. 7,875,000
	Own fund	5%	Shs. 525,000
b)	Private establishments .....		Shs. 16,000,000
	(130 units)		
	Grant	0%	
	Credits	75%	Shs. 12,000,000
	Own fund	25%	Shs. 4,000,000
c)	Working capital loans .....		Shs. 2,702,000
<hr/>			
	Grant total		Shs. 2,100,000
	Credit total (long term)		Shs. 19,875,000
	Credit total (short term)		Shs. 2,702,000
	Own fund total		Shs. 4,525,000

(b) Project No. 2

Proposal for the development of loan financing  
(on the national project basis)

Given below are the guideline for the improvement of the credit conditions for new investments, and the expansion plan of banking activities in the Kilimanjaro Region.

Credit conditions (long term loans)	(Current system)
1) Interest rate (per annum)	5% (approximately 8%)
2) Payback period	1 to 10 years (15 months to 10 years)
3) Grace period	6 months to 2 years (3 months to 2 years)
4) Debt/equity ratio	75:25 (50:50 to 80:20)

Expansion of banking activities (Tanzania Rural  
Development Bank/TRDB)

1) Moshi Regional Branch	
Branch Manager/Senior Industrial Officer	1 person

Loan Officers	2
Accountant	1
Junior Industrial/ Loan Officer	1
Clerks	3
	<hr/>
	8 persons (Currently 3)
2) Rombo District Branch	
Junior Industrial/ Loan Officer	1 person
Clerk	1
	<hr/>
	2 persons
3) Pare District Branch (Same)	
Junior Industrial/ Loan Officer	1 person
Clerk	1
	<hr/>
	2 persons

In operating banking activities, particularly in the assessment of projects, it is recommended that a guidance by qualified experts from advanced countries be provided, and that the bank staff be given training in advanced countries. As for the expenses required for the above educational programmes, a grant from the advanced countries concerned can be expected.

(c) Project No. 3

**Establishment of the Industrial Development Centre  
for the Kilimanjaro Region**

The Industrial Development Centre will be established as an organization attached to the Kilimanjaro Regional Office.

Listed below are the functions of the centre, which are to be provided one after the other according to the development status.

**Industrial survey and promotion functions:**

- 1) To make continuous assessment of potentials for regional industrial development.
- 2) To undertake feasibility studies of appropriate individual projects arising from the assessment of the potentials.
- 3) To make a diagnosis of cooperatives and private enterprises.
- 4) To give necessary advice based on the results of the above 2).  
  
(Advice is to be given directly to cooperatives and private enterprises, as well as to the Regional Office and their banks when necessary.)
- 5) To offer consultant services regarding factory layout, selection of tools and machines and budgeting.
- 6) To make arrangements for loan and grant provisions.
- 7) To act as a liaison with the *SIDO* and other relevant organizations and parastatals.

**Marketing functions:**

- 1) To set up an inspection, quality control and the introduction of standardization systems concerning the production of international and domestic export goods.
- 2) To offer guidance for design and quality improvements so as to enhance the marketability of manufactured goods.
- 3) To evaluate the competitive power of the international and domestic export commodities, and to offer guidance on the measures to be taken.
- 4) To act as a liaison with the Regional Trading Corporation and the Regional Cooperative Union.

**Training functions:**

- 1) To undertake the training (formal training programmes) in production techniques, management and marketing skills.
- 2) To undertake the training on the introduction of the industrialization (mechanization) techniques for all the existing industrial units in the region.
- 3) To implement or assist the formal training courses for workers who are to be recruited as a result of the above 2).
- 4) To locate and operate the mobile training units (land cruisers or

specially equipped vehicles).

Management of the Industrial Estates :

Development Expenditures

1) Building 910 sq. m		not estimated
2) Machinery and equipment		Shs. 450,000
3) Vehicles for mobile units (2)		Shs. 120,000
(exclusive of land and building cost)	Total:	<hr/> Shs. 570,000

Manpower requirement:

- 1) 5 to 7 experts from advanced countries (to be required at the time of the full operation. However, in the target year, these foreign experts are to be replaced by the Tanzanian citizens.) In addition to the above, there will be a need to recruit experts on a short term basis (one to six months). As for the expenses on the recruitment of experts, grant provisions from advanced countries concerned are to be expected.
- 2) 5 to 14 Tanzanian experts (among whom, several experts are to receive training in advanced countries. As for the training expenses, grant provisions from advanced countries concerned are to be expected.)
- 3) Other manpower needs are not yet decided.

(d) Project No. 4

Small Scale Industrial Estates Programme

An industrial estate will be established in Moshi during the five year period, to which the participation of cooperatives will be solicited. This project, incidentally, is a reduced and revised version of the joint proposal made by TIB/KIDECO (Tanzanian Investment Bank, Kilimanjaro Development Corporation) in December, 1974.

Types of industries to be solicited are indicated in the Table 2-1. Construction of the estate should be proceeded on a step-by-step basis with the advice of the Industrial Development Centre, while judging the participating status of cooperatives.

The estimated expenditures are given below. However, some changes will be necessary depending upon the type of industries.



The estimated cost of machinery and equipment only includes those which are jointly utilized by cooperatives and the Industrial Development Centre, but not by individual cooperatives. The latter case is to be covered by the Project No. 1.

It is proposed that the construction of the buildings should be undertaken by the participating cooperatives or be geared to the on-the-job training for the trainees. This will help reduce the construction costs and, therefore, the lease prices.

Necessary expenditures:       Shs. 1,970,000  
(exclusive of land cost)

### 3. Tourism

Development of international tourism not only contributes to the promotion of cultural exchanges, mutual understanding and friendly relations among various countries of the world, but also makes a considerable amount of contribution to the improvement of the nation's balance of international payments through the increased domestic consumption by foreign visitors.

The Tanzanian Government, fully recognizing the importance of promoting international tourism, has provided various measures under the leadership of the Ministry of Natural Resources and Tourism. There is an adequate understanding of the significant role played by the both regions of Kilimanjaro and Arusha which form the major part of the Northern Circuit.

#### (1) Estimated number of visitors

Since the estimated figures based on survey conducted by Authur D. Little Co. were used as target figures in the Second Five Year Plan, it seems appropriate to use the same figures in developing the Third Five Year Plan. Accordingly, based on the estimated number (127,000 persons) of foreign tourists who visited Tanzania in 1974, the target figure for the target year of 1980 is set to be 257,000 persons (with a 15% annual increase). As for the number of hotel guests, the figure for 1980 can be estimated to be 1,826,000 persons (with a 17% annual increase), based on the figure of 832,000 persons in 1974.

Based on the estimated figure of 102,000 which indicates the number of foreigners who entered Tanzania in 1973, a revision was made on the forecast made by Authur D. Little Co., the results of which are shown below in the Table 3-1, 3-2 and 3-3.

Table 3-1. Estimated numbers of foreign visitors and hotel lodgings by nationality

(Unit: 1,000)

Nationality	1969	Annual increase rate (%)	1975	Annual increase rate (%)	1979
<b>Europeans</b>					
Visitors	29	31	104	16	178
Lodgings	136	47	850	16	1,402
<b>Americans</b>					
Visitors	15	15	30	15	51
Lodgings	56	14	115	23	267
<b>Others</b>					
Visitors	8	19	18	12	28
Lodgings	50	13	93	15	157
<b>Total</b>					
Visitors	52	25	152	15	257
Lodgings	242	36	1,058	17	1,826

Table 3-2. Estimated numbers of hotel lodgings by tourist site

(Unit: 1,000)

	1969	1975	1976	1977	1978	1979
<b>North</b>						
National Parks, etc.	82	356	412	473	544	628
Kilimanjaro	-	27	36	45	54	67
Lake Victoria	-	-	16	24	29	33
Others	25	27	28	29	29	31
<b>Total</b>	107	410	492	571	656	759
<b>South</b>						
Dar es Salaam	105	138	146	158	172	184
Beach Hotel	2	421	489	554	625	673
National Parks, etc.	4	37	55	68	80	100
Ruaha	-	11	14	21	27	31
Zanaibar	3	5	5	16	25	35
<b>Total</b>	114	612	709	816	929	1,023
Others	21	37	38	40	43	45
<b>Total numbers of lodgings</b>	242	1,059	1,239	1,427	1,628	1,827

Table 3-3. Necessary numbers of beds to achieve the goals broken down by area

	1969	1975	1976	1977	1978	1979
North National Parks etc.	843	2,043	2,103	2,253	2,553	2,773
Kilimanjaro	-	150	300	300	300	300
Arusha/Moshi	-	400	400	400	400	400
Lake Victoria	-	-	150	150	150	150
Total	843	2,593	2,953	3,103	3,403	3,623
South Dar es Salaam Beach Hotel	974	1,230	1,230	1,530	1,530	1,530
National Parks, etc.	-	2,190	2,590	3,090	3,490	3,690
Ruaha	150	350	400	450	600	600
Zanzibar	10	110	110	150	200	200
Total	80	80	80	80	280	280
Grand total	1,214	3,960	4,410	5,500	6,100	6,300
Grand total	2,057	6,553	7,363	8,603	9,503	9,923
Number of necessary beds on an annual basis	-	1,530	810	1,240	900	420

According to the Table 3-1, the number of American tourists to Tanzania is estimated to be 51,000 persons for the target year of 1980 with a 15% annual increase, whereas the number of Europeans is estimated to be 178,000 for the same year with an annual increase of 16%. Based on the past records, however, the increase rate of American tourists is considered to be higher than the figure indicated above. As for the number of lodgings, the South shows a greater increase rate as compared with the North. In other words, the number of lodgings in the North increased by approximately seven times from 107,000 in 1969 to 759,000 in 1979, while that in the South increased by approximately nine times from 114,000 in 1969. This is because the results of the survey conducted by Arther D. Little Co. placed a primary emphasis on the coast area, while paying a special attention to a large-scale expansion of the Beach Hotel. Accordingly, an emphasis is placed on the Beach Hotel in terms of the number of necessary beds to achieve goals, as indicated in the Table 3-3. However, when one takes a look at the number of foreign tourists who entered Tanzania by point of entry, 45.9% of the tourists entered at Dar es Salaam, whereas a greater 47.7% entered from the northern border.

Further, in comparing the use of hotels by area and nationality, there is no significant difference shown between Dar es Salaam and the Northern Circuit. With the increased use of the Kilimanjaro International Airport in the future (at the time of the field survey conducted by Arthur D. Little, it did not yet start the operation), and with further development of accommodations and other tourist facilities, the importance of the Northern Circuit in the

tourism of whole Tanzania is expected to increase.

(2) Strategies for tourism development

- (a) Tourist attractions of Tanzania are the magnificent natural scenery, wild animals and the coastline of beautiful white beaches. In particular, the Kilimanjaro Region, having a moderate climate and the Mkomazi Game Reserve in the north near the Kenyan border and the world-famous Mt. Kilimanjaro (National Park), the highest peak in the African Continent, forms the essential part of the Northern Circuit together with the neighboring Arusha, Tarangire, Lake Manyara, Ngorongoro and Serengeti National Parks. In order to further promote the tourism in the Kilimanjaro Region, therefore, it is necessary to further promote the favorable, friendly relationship which already exists between the Kilimanjaro and the Arusha Regions. At the same time, it is important to take measures such as setting up an organization to promote the development of various tourist facilities and the improvements of traditional folk art and craft, or reinforcing the functions undertaken by the Tanzanian Tourist Corporation (T. T. C.).
- (b) According to the general survey conducted by Arthur D. Little Co. on the future possibilities of the tourist industry in Tanzania ("Tourism in Tanzania" which was presented to the Tanzanian Government in December 1971), the number of foreign tourists is expected to increase from 52,000 in 1969 to 127,000 in 1974 (with a 25% annual increase), and to 257,000 in 1978 (with a 15% annual increase after 1974. Therefore, the number of foreign tourists in 1980 is estimated to be 296,000). The survey estimated the number of necessary beds in the Northern Circuit in the year 1978 to be 3,073.
- (c) Currently, the number of beds available in the Northern Circuit is approximately 2,000. According to the above estimate, there is a need to provide more than 1,000 additional beds by the end of 1977, the preparation within the Kilimanjaro Region should be made as soon as possible.

In recent years, with a gradual increase in the number of foreign tourists, the Tanzanian Government has taken active measures in attracting tourists as powerful means to obtain foreign currency. In particular, the development of hotel facilities undertaken by the Tanzanian Tourist Corporation has been proceeded with great enthusiasm. Further, construction of Kilimanjaro Mountain Lodge and Kilimanjaro International Airport Hotel has to be promoted.

- (d) As for the travel dealers, there are currently on tour operator and one travel agent in Moshi, ten operators and two agents in Arusha. Since this is considered insufficient for these cities to act as the tourism base in the Northern Circuit, further promotion and reinforcement are essential. In promoting tourism related industries, the region's traditional specialities and folk craft such as leather products, wooden carving, beading, gourd products, coconut works, batik works, sisal products, Masai spears, coffee, banana liqueur, Tanzanite and calcite

products should be further developed as tourists's souvenirs. At the same time, exhibitions and spot sales of these products should be held on a permanent basis, so that tourists will be able to purchase souvenirs easily, and at a reasonable price.

- (e) Further, in order to increase the tourist attraction of this region, necessary arrangements should be made to give tourists an opportunity to visit *factories of the above-mentioned related industries manufacturing the region's specialities and folk craft*. At the same time, there should be a regular performance of traditional folk songs and dances.
- (f) In reinforcing the overseas tourist PR activities, a primary emphasis should be placed on Mt. Kilimanjaro which is wellknown throughout the world through a Hemingway's novel and others, wild life in the region, and the round tours combining these highlights, as well as advertising the above-mentioned traditional folk art and craft. In this connection, it will become necessary to increase the number of overseas tourist PR offices in various foreign countries.
- (g) As to the development of *transportation facilities, road pavement should be undertaken around the Kilimanjaro International Airport, between the cities of Moshi and Arusha, on the access roads to various tourist resorts, and the roads within the tourist sites as soon as possible. (Particularly, when the pavement of the road running from Marangu through Old Moshi to the city of Moshi "featuring the beauty of valleys", and the road running from Ol Molog through Sanya Juu and to Moshi "featuring the panoramic view" are completed, these two will become the first class sight-seeing roads.)*

At the same time, the improvement of the mountain road to Mt. Kilimanjaro will be necessary.

- (h) While taking the above measures, efforts should be made to make the Kilimanjaro International Airport a gateway or a tourist base in the Northern Circuit. It will be necessary, in the area around the Airport or in Moshi and Arusha, to strengthen the agents to arrange Safari tours and the facilities for selling Safari equipment, as well as to reinforce vehicles for sight-seeing including Safari, and hotel accommodations. Further, it is necessary to increase the number of flights of the East African Airways and other international airlines. And in particular, the use of charter flights should be promoted.

In this connection, it is proposed that several kinds of round tour routes which originate from the International Airport and covers the area of Mt. Kilimanjaro and other National Parks in the Northern Circuit should be set up, and tourists be recommended to make a stop at a beach area near Dar es Salaam before or after visiting the Kilimanjaro Region.

- (i) Those tourists who come all the way from Europe, North America and Asian countries visit more than two countries out of the East African three countries in most of the cases. Therefore, it is considered beneficial for promoting the tourism of all these three countries to take

the following joint measures in establishing their tourism policies.

- To establish round tour routes covering the three countries.
  - To implement reservation and sales activities on a joint basis.
  - To implement joint tour advertising and PR activities.
  - To establish a joint system regarding the preservation of natural resources.
  - To provide a joint training programme for tourism-related workers and operators.
- (j) Standardization and simplification of various procedures, e.g., immigration, customs, and currency control, for round route travelers of the three countries.

In order to simplify the procedures of entry and departure, it is particularly important to uniform the format of the embarkation & disembarkation card and the statement of currency on hand.

In proceeding the tourism development, it is essential to keep in mind the preservation of nature and wild animals both of which are the priceless resources of tourism. It is necessary, further, to take counter-measures so as to avoid any possible destruction of nature or environmental pollution caused by the development of other industries.

- (k) Ever since the oil crisis at the end of 1973, the international balance of payments of Tanzania has been changing without any indication of an improvement. Therefore, for the Central Government to hammer out the active policy on the promotion of tourism under these circumstances seems to be a truly timely action, since the tourism development can encourage the inflow of foreign currencies through the consumption of foreign tourists and promote the increase of employment and income level of the local inhabitants. It is recommended that the above mentioned measures be strongly promoted, while maintaining the balance between the preservation of nature and the tourism development.

### (3) Tourism development projects

The following are considered to be appropriate to implement or plan as tourism development tasks in the Kilimanjaro Region within the framework of the Third Five Year Development Plan.

#### (a) Construction of the Kilimanjaro Airport Hotel

Number of beds:	400
Expenditures:	beds x unit price (City hotel ((international class)) x Inflationary rate)

$$400 \text{ beds} \times \text{Shs. } 75,000 \times 1.5 \\ = \text{Shs. } 45,000,000$$

(b) Construction of Mount Kilimanjaro Lodge

Number of beds: 200

Expenditures: beds x unit price (Park lodge x  
Inflationary rate)

$$200 \text{ beds} \times \text{Shs. } 62,000 \times 1.5 \\ = \text{Shs. } 18,600,000$$

The necessary number of beds indicated above is based on the number of necessary beds (1,000 beds) proposed by Arther D. Little Co. subtracted by the number of beds available in Mount Meru Hotel (400 beds --- construction to be completed in 1980) which is currently under construction. Since the unit price above was of 1971, the inflationary rate of 150% was multiplied in the calculation.

(c) Construction of National Hotel School

Expenditures: Shs. 4 million x 1.5 = Shs. 6 million

(The number of annual trainee will be 700, of which 100 persons will receive overseas training. National Hotel School, which was recommended to be located at Dar es Salaam by A.D.L., should be invited to Moshi.)

(d) Traditional Accomplishments & Folkcraft Centre

Expenditures: Shs. 4 million x 1.5 = Shs. 6 million

(A simple theatre accommodating 500 tourists should be built on a point halfway between Moshi and Arusha, so as to conduct a regular performance of the region's traditional art. A folkcraft centre will be built together with the theatre, where exhibitions and spot sales will be conducted for the convenience of tourists. Further, there will be a restaurant to serve local dishes.)

(e) Opening of Kilimanjaro Office of the State Travel Service

Expenditures:		Shs	920,000
Office construction	Moshi	Shs	100,000
	Kilimanjaro		
	Int'l Airport	Shs	20,000
Vechile purchasing	@ Shs 40,000 x 20		
		Shs	800,000

(f) Consolidation of tourist roads (mainly road pavement)

Expenditures		Shs 405,000
i)	Marangu - Tarakia Road 45 Km	Shs 135,000 (Rombo District)
	Marangu - Bismark Hut Road 15 Km	Shs 45,000 (Mt. Kilimanjaro mountain road)
	Marangu - Old Moshi - Moshi Road 25 Km	Shs 75,000 (Valley road)
	Sanya Juu - Ol Molog - Langumishra 50 Km	Shs 150,000 (Panorama road)

4. Transportation

According to the operation report (1971) of the East African Railway Corp., the volume of inter-city cargo mobility (by railways and by lorries) were 1,230,000 ton to Dar es Salaam and Tanga, 1,047,000 ton to Kenya and 588,000 ton to Arusha.

The figure shows that the Kilimanjaro Region constitutes an economic circle together with the Arusha Region, and has relations of approximately equal economic reliance with Dar es Salaam and Kenya respectively.

The figure is considered to change greatly with the development of Dodoma and consolidation of roads etc.

The Planning Team considers that the present state and direction of development of roads and railways which play the role of physical distribution at present are as follows.

(1) Road

(a) Outline

When one takes a look at the road network of the Kilimanjaro Region, a trunk road penetrates the region, from which various local main roads extend. The total mileage of roads in the three districts in the region, i.e., Moshi, Rombo and Pare, is shown in the Table 4-1. The Table 4-2 indicates the rate of road pavement, and the Table 4-3 the road mileage per unit area and per population, respectively.

The total stretch of roads in the Kilimanjaro Region is 3,086 km; 0.23 km per sq.km, and 4.12 km per 1,000 population, respectively. The rate of pavement, as indicated in the Table 4-2, reaches 100% on the trunk road within the region. The rate, however, is 23.3% on local main roads, and 0% on the regional roads - Rank B. Currently, all



the local main roads are covered with engineered gravel and others are soil roads.

In Moshi, where the development was started earlier and there has been a progressive urbanization in recent years, the road density and pavement rate are both high. In the piedmont area of Kilimanjaro, so-called Highland, where an intensive agriculture such as coffee plantations is practiced, the road network is also well-developed. As for the Rombo District, particularly, more than one half of its total area falls into the Kilimanjaro National Park which is higher than approximately 1,800 m above sea level, the actual population density is highest, and therefore, the road density is also high. The pavement rate, however, is still on a lower level. Moreover, since the district is situated at the foot of a volcano, there are numerous marshes and yet, the construction of cross-overs is insufficient. In rainy season, therefore, roads are sometimes covered with water and bridges are washed away. The road line is not desirable because of the complicated geographical features of this land.

On the other hand, the Pare District, with a low population and road density, has a flat land and a dry weather, both of which facilitate the road construction. However, when one travels far from the trunk road, roads are bad and primitive. In a dry season, these areas suffer from severe sand-storm, and in a rainy season, many of these roads become impassable.

Although there has been no statistics available on the amount of traffic, based on the observation of the Planning Team, it is estimated that there are 1,500 to 2,000 vehicles/day on the trunk road which ties Himo, Moshi and Arusha, and approximately 500 vehicles/day on other trunk roads and local main roads.

As for the number of pedestrians, however, it is unexpectedly high in the areas with a high population density, which is same in every developing country. And the bicycle traffic seems to be increasing.

Since the Kilimanjaro Region is one of the most developed regions in Tanzania, infrastructure such as roads and railways is also well prepared. The road density and the pavement rate of the region are one of the highest in the whole country. On the other hand, the diffusion of social services such as education, medical treatment, and communications is still at a low level though it is considerably high as compared with other regions. In order to enhance the level of these social services and to provide sufficient transportation medium for the agricultural and other industrial development included in the Third Five Year Development Plan, improvement of the road network, in terms of both quality and quantity, is considered essential.

(b) Road plan

The Planning Team discussed the draft of the Third Five Year Development Plan for the Kilimanjaro Region prepared by the Regional Office. According to the above draft, the targets of the economic

infrastructure for the Kilimanjaro Region are as follows: road construction of total 1,500 km is to be covered with Shs 11,200,000, and the construction of bridges with Shs 17,000,000. The question of whether there is a sufficient adjustment made between the national target of the road diffusion rate for 1980 and the development plan for other fields within the Third Development Plan (national level) seems to be still open to discussion. As indicated in the Table 4-4, the Kilimanjaro Region still shows an extremely high diffusion rate as compared with the national target. It should, therefore, be classified into the highest group both within the Third Five Year Plan and the domestic breakdown. Considering that the Kilimanjaro Region has a high population density, the most progressive intensive development within the country, is estimated to have a population of 1,021,000 by 1980, and is expected to further develop its agricultural and industrial activities, the target diffusion rates indicated here cannot be regarded too high.

The objectives of the plan include the development of all-weather roads and bus roads, and the improvement of social services. Out of the target mileage of 1,500 km, approximately 400 km is planned to be constructed as a road for the agricultural development of the Lowland in the region. The major part of the above includes the following.

- (i) The eastern lowland at the foot of Mt. Kilimanjaro (Rombo)  
Himo -- Chala -- Tarakea -- Rongai
- (ii) Lowland to the south of Moshi  
Mikocheni -- Rundugai -- Kilimanjaro International Airport
- (iii) Passing the region where an irrigation is planned by using the water from Lake Jipe Mgagao -- Butu - Jipe -- Kileo
- (iv) East of the Pare District where an irrigation is planned by using the water from Nyumba ya Mungu Dam  
Pangani -- Ruvu -- Hedaru  
Maranya -- Pangani -- Ruvu

Although these routes are considered to be extremely inferior roads under the present circumstances, it is proposed that these should be classified as Rank A or B regional roads and be improved to become a trunk line for the agricultural development of the region. Therefore, adjustment between the road construction and the agricultural development will become the key point in planning. In proceeding the agricultural development of the region, it will probably become necessary to implement a total development which would include the construction plan for Ujamaa Village. In this connection, it is essential to make up a detailed plan fully considering the total transportation plan within the region, which goes far beyond the simple road construction plan in a development area.

The road consolidation plan within the Third Development Plan can only be roughly explained at the present stage. The objectives of the road consolidation are to reinforce the already existing road network and to generally develop the all-weather roads. This project will provide a significant benefit for the local inhabitants who have had received nothing

but a primitive road services. Improvement of the roads will give them an easy access to the social services such as education and medical treatment, will enable them to improve their standard of living, and will make a *significant contribution* for the increase of the percentage of school attendance and lengthen the average span of life, both of which are part of the objectives to be stated in the Third Five Year Plan. Therefore, road plans should be developed in such a way that the industrial development and the social services are well balanced.

While developing the agriculture in lowlands, however, it is estimated that the urbanization district around Moshi will see a development in urban functions such as small-scale industries, distribution, trade, medical treatment, education and administration, and that there will be a population increase in the future. With the improved tourist facilities, further, the amount of traffic in the district is also expected to rise. From this standpoint, there will be a demand for road services of higher quality in the urbanization district around Moshi. Moreover, when the overall region has a more sophisticated industrial structure in the future, the current plans for the automobile traffic, which forms the major part of the overland transportation, may become impractical. In view of these changes in the future, it will be necessary to conduct an investigation for framing a more scientific and reasonable plan.

Based on the above outline of the current status of the region's roads, it seems essential to keep in mind the following points in drawing up the road consolidation plan for achieving the objectives stated above.

- (i) Asphalt pavement of local main roads in areas with a high population density around Moshi and the Rombo District. Particularly, the road from Marangu to Tarakea (approximately 20 km) which runs through the middle of the high population district of Rombo needs to be paved as soon as possible, in view of the current traffic and the development of small-scale industries, the intensive agriculture and tourism in the near future.
- (ii) Improvement of traffic signs. The insufficiency of traffic signs is a nation-wide problem. Although there are signs put in major cross-roads on the trunk roads, the design is usually unclear and ununiformed. Signs to confirm the driver's position are also deficient. Therefore, in guiding the tourists from the Northern Circuit to Mt. Kilimanjaro or the eastern coastal areas, it is essential to install desirable signs on the trunk roads and local main roads.
- (iii) Measures for the bicycle traffic and pedestrians

The diffusion rate of private automobiles is currently at an extremely low level, and it is unlikely that it will rise in the near future, judging from the nation's policies. Therefore, transportation media for most of the people are buses, bicycles and walking. On the trunk roads and local main roads in the high population areas, there is an unexpectedly large number of pedestrians and bicycles. It is estimated that the bicycle traffic will increase

around the urbanization districts, as a convenient transportation medium. However, the trunk roads around Moshi and the road between Himo and Marangu are both narrow, and are too dangerous for the bicycle traffic. Although it is difficult to expand the width of these roads, it will not be too costly to build a special pass for pedestrians and bicycles along these existing roads. Taking such measures at this early stage will result in maintaining the capacity of the road itself and in enhancing its degree of safety.

(iv) Investigation of transportation plans

As mentioned earlier, the region does not seem to have sufficient basic data for drawing up the road improvement plan. It is considered necessary, therefore, to implement an investigation of transportation plans for scheming reasonable and efficient improvement plan. There will be no need for using sophisticated methods, e.g. a large-scale traffic distribution, as implemented in advanced countries. However, basic data such as population distribution, population mobility, cargo mobility, and a current road condition map of the region should be made available. At the same time, it will be necessary to implement traffic surveys and O. D. surveys on the trunk roads for the assessment of transportation demands, and to make an adequate adjustment with other development projects, so as to scheme a complete, all-round plan.

As for the road consolidation plan within the Kilimanjaro Region, there is no large-scale new road construction plan to be completed in a short period of time. However, the road plan should certainly be a part of the infrastructure for the development of agriculture, small-scale industries, tourism and social services throughout the region.

Table 4-1. Road milage in the Kilimanjaro Region as of 1974

Note: Number in the parentheses indicates the percentage against the total milage within each district.

	Moshi District	Rombo District	Pare District	Total
<u>Trunk Roads</u>	84 km (4.7)	- km (0)	139 km (12.3)	223 km (7.2)
<u>Regional Roads</u>	411 (23.2)	58 (33.2)	319 (28.1)	788 (25.5)
Rank A (Local Main Roads)	287	40	133	460
Rank B	124	18	186	328
<u>District Roads</u>	1,280 (72.1)	117 (66.8)	677 (59.6)	2,075 (67.3)
Rank A	269	98	370	737
Rank B	1,011	19	307	1,337
<b>Total</b>	<b>1,775</b> (100)	<b>195</b> (100)	<b>1,135</b> (100)	<b>3,086</b> (100)

Table 4-2. Road pavement rate in the Kilimanjaro Region

	Moshi	Rombo	Pare	Total
Trunk Roads	100%	-	100%	100%
Regional Roads	23.5	0	3.1	13.6
Rank A (Local Main Roads)	33.8	0	7.5	23.3
Rank B	0	0	0	0
<b>Total</b>	<b>36.5</b>	<b>0</b>	<b>32.5</b>	<b>32.6</b>

Table 4-3. Road milage per area and population in the Kilimanjaro Region (1974)

Note: Numbers in the parentheses only include trunk roads and regional roads.

	Moshi	Rombo	Pare	Total
Road milage	1,775 km (495 km)	175 km (58 km)	1,135 km (458 km)	3,086 km (1,011 km)
Area	4,335 km <sup>2</sup>	977 km <sup>2</sup>	7,900 km <sup>2</sup>	13,212 km <sup>2</sup>
Road milage/area (km/km <sup>2</sup> )	0.41 (0.11)	0.18 (0.06)	0.14 (0.06)	0.23 (0.08)
Population	1,000 persons	1,000 persons	1,000 persons	1,000 persons
	446	131	172	749
Road milage/ population (km/1,000 persons)	3.99 (1.11)	1.33 (0.44)	6.60 (2.66)	4.12 (1.35)
Population density (person/km <sup>2</sup> )	103	134	22	57

Table 4-4. Targets of the Third Five Year Plan (Devplan) (only includes transportation and communication fields)

	Kilimanjaro Region		Nation-wide *1	
	Target for 1980	Current index	Target for 1980	Current index
(i) To have 33 percent of the population living within 5 km of all-weather roads.	60%	53.5%	33%	28%
(ii) To have 50 percent of the population living within 5 km of a bus route.	85%	73.5%	50%	34%
(iii) To have 54 percent of buying posts on all-weather roads.	-	-	54%	41%
(iv) To have an average of one telephone for every 700 people.	400	650	700	1,300
Capital required for the above (million Shs)	78.2 *2		1,000	

- \*1 Figures based on the Seminar Notes for Regional Planning Officers Meeting (November 28, 1974)
- \*2 Out of this, Shs 11.2 million is budgeted for the road construction of 1,500 km, Shs 17.0 million for bridge construction (these two are financed by the government), Shs 50.0 million for promoting telephone and postal services (financed by the East African Community).

(2) Railroad and bus transportation

The current status of operation and utilization regarding the Tanga and Arusha Lines of the East African Railway Corporation is on a low level, and their role within the economy of the Kilimanjaro Region does not have a great deal of importance. When indicating the above situation in figures, the number of annual passengers at Moshi Station is 101,000 persons, that of daily passengers is 120 - 340 persons, the amount of annual handling freight is 52,000 tons (dispatch), 97,000 tons (arrival) with a total of 149,000 tons.

Although railways still plays the key role in the transportation in and out of the region, the major part of the transportation is gradually replaced by road traffic. There is currently no plan on the consolidation of railways, and there seems to be no urgent need.

However, when the railway improvement plan, e.g., the extension plan to Musoma, is to be implemented in the future, the benefit of the reinforcement of railroad transportation and improved speed has to be efficiently taken advantage of for the development of the Kilimanjaro Region.

As to the bus transportation, there is one round trip per day provided by the East African Railway Cooperation between Moshi and Dodoma (two round trips on Wednesdays and Sundays), which are usually packed. With the development of Dodoma and the road improvement, the number of bus passengers is expected to increase drastically. Therefore, it will be necessary to increase the number of daily services.

As for Moshi city round buses which are operated by KIDECO, the rate of operation is extremely poor, since there is a shortage in repair parts. KIDECO itself is also operating at a deficit. Since most of the local inhabitants have no transportation medium other than to walk, except for the small number of bicycle owners, a serious consideration should be given to the regular bus services. The same thing applies for the rural area within the region. In this connection, it is essential to select the type of vehicle which are suitable for the mountain roads, and to establish the system to supply spare parts, so as to provide desirable bus transportation services.

### III. Annex

List of Members of Japanese Planning Team  
for  
Kilimanjaro Integrated Regional Development

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