

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT
OF
AGRICULTURAL STORAGE AND TRANSPORTATION
SYSTEM
IN
IRINGA REGION
IN
THE UNITED REPUBLIC OF TANZANIA**

JULY 1988

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE


In response to the request of the Government of the United Republic of Tanzania, the Government of Japan has decided to conduct a basic design study on the Project for Improvement of Agricultural Storage and Transportation System and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Tanzania, a study team headed by Mr. Kazuyuki Ishii, Senior Officer for Storage Technique, Food Agency, Ministry of Agriculture, Forestry and Fisheries from March 31 to May 4, 1988.

The team had discussions on the project with the officials concerned of the Government of Tanzania and conducted a field survey in the project area. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the project and contribute to the promotion of friendly relations between our two countries.

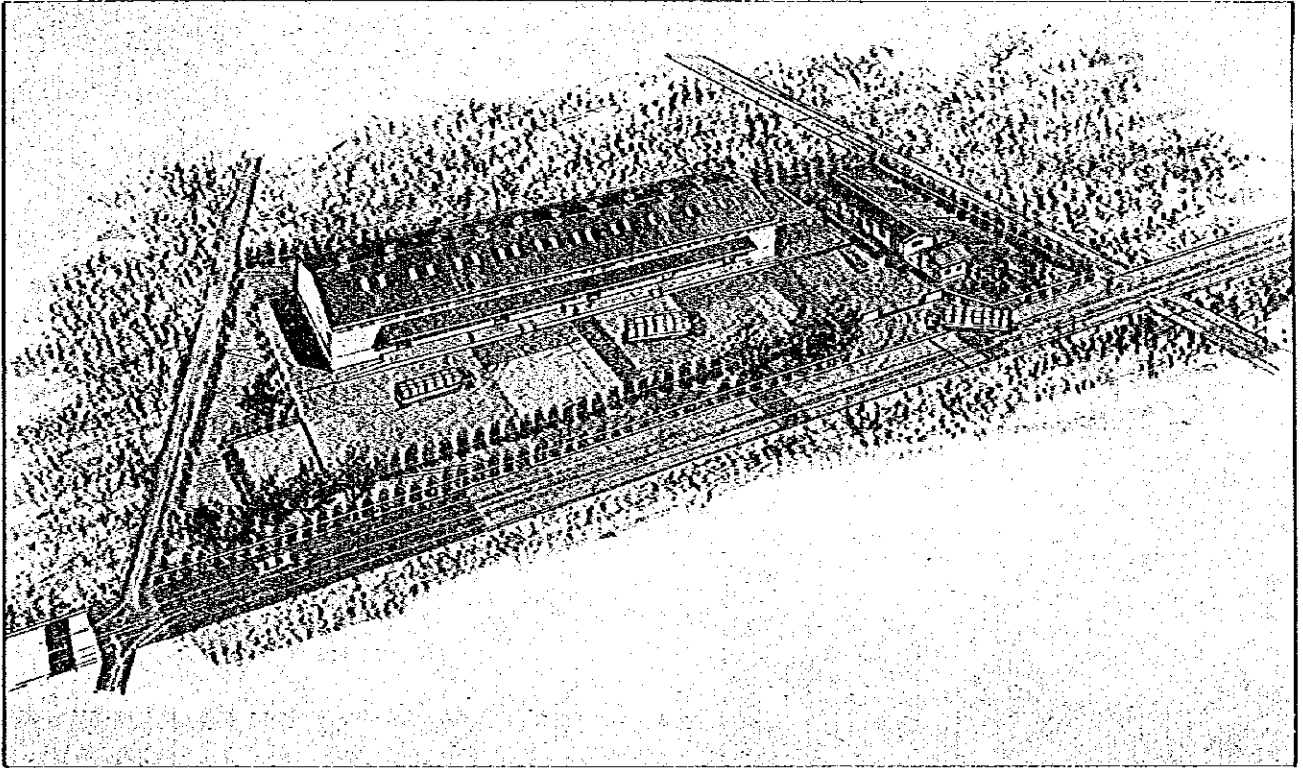
I wish to express my deep appreciation to the officials concerned of the Government of the United Republic of Tanzania for their close cooperation extended to the team.

July, 1988

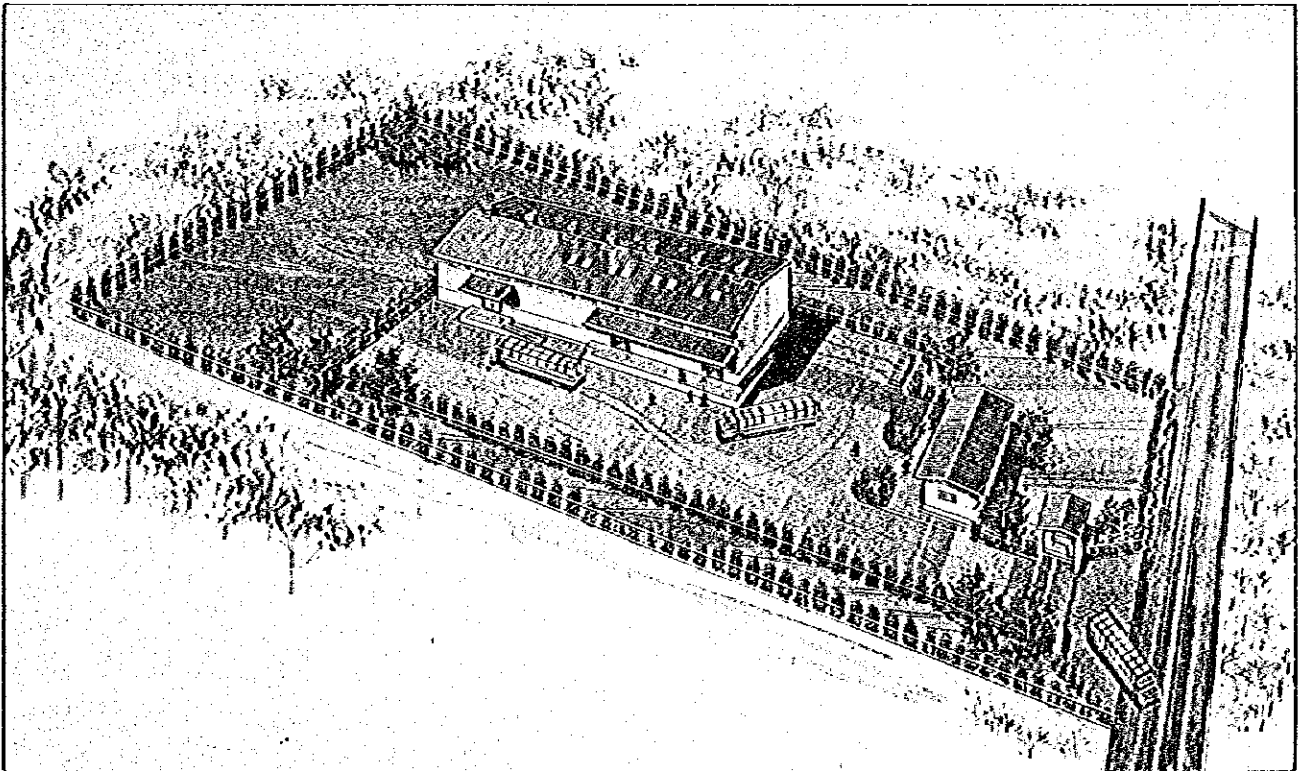


Kensuke Yanagiya
President

Japan International Cooperation Agency

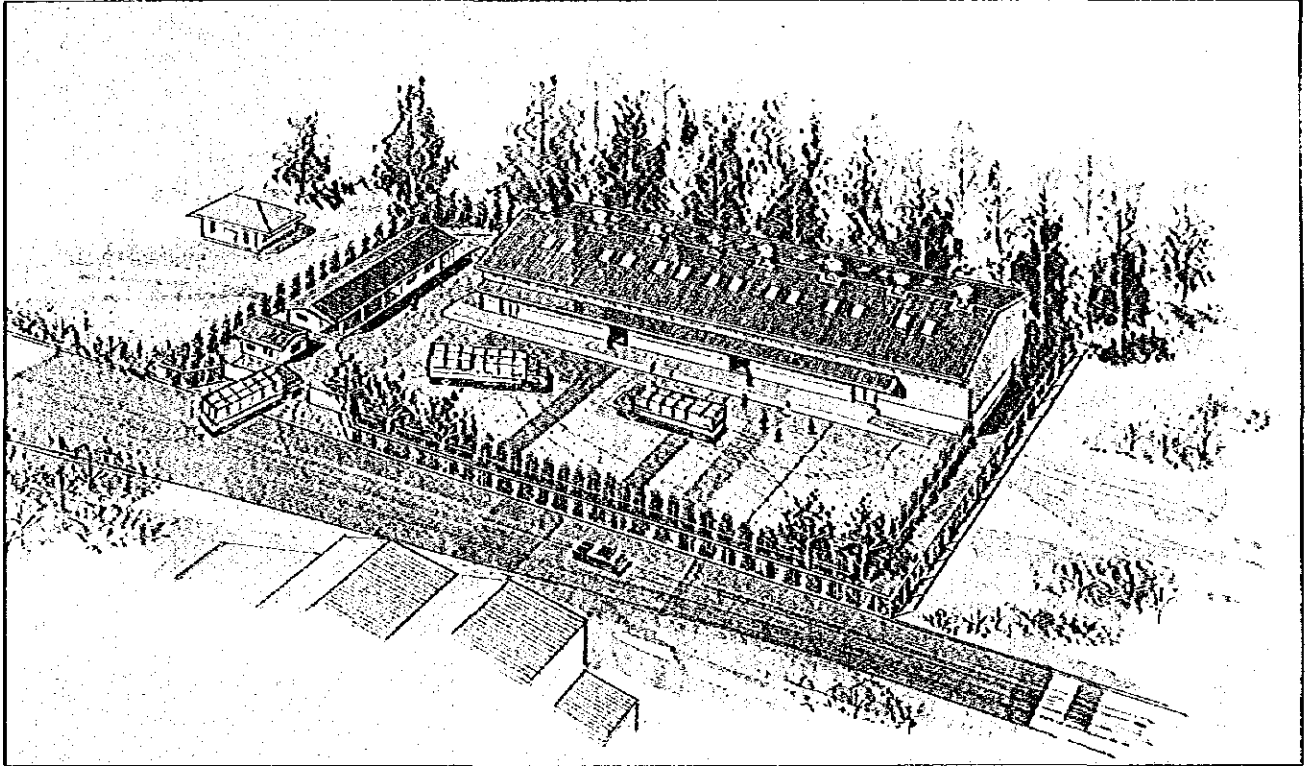


KILOLO

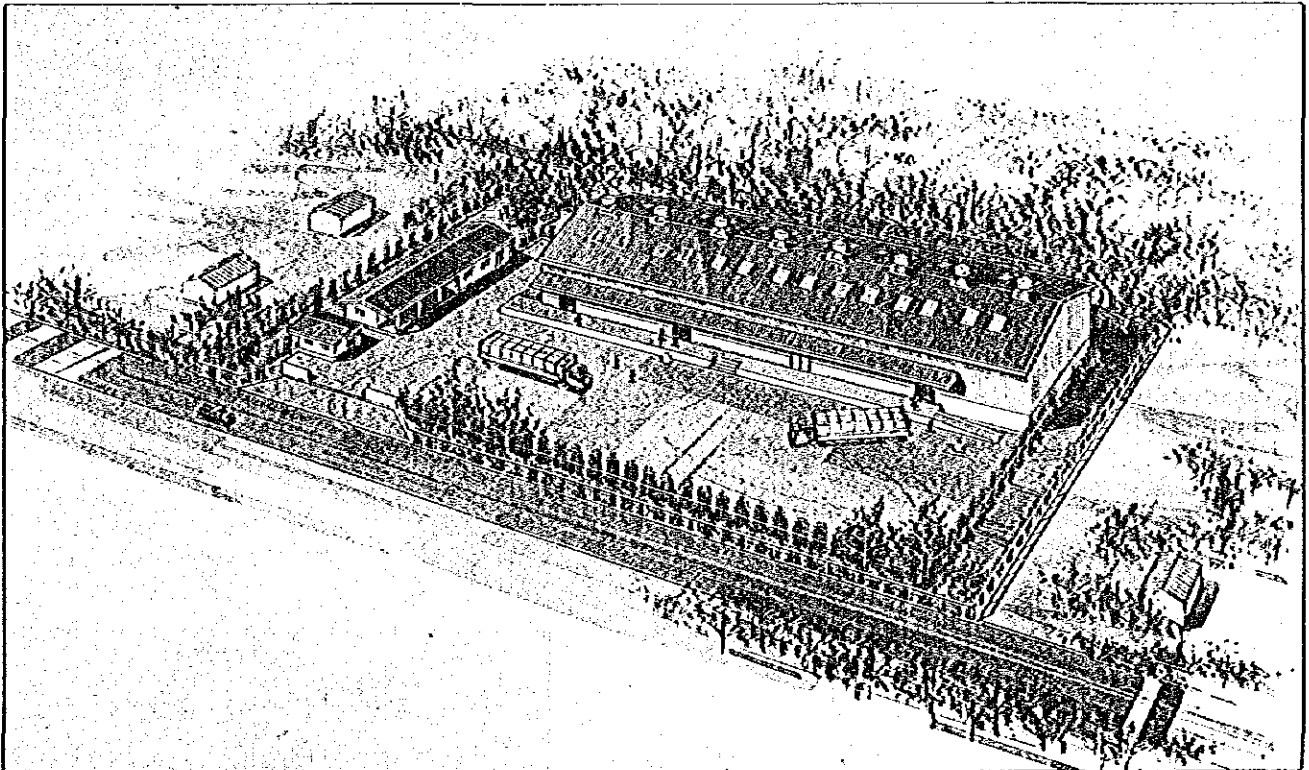


IFWAGI

PERSPECTIVE VIEW OF PROPOSED GODOWNS

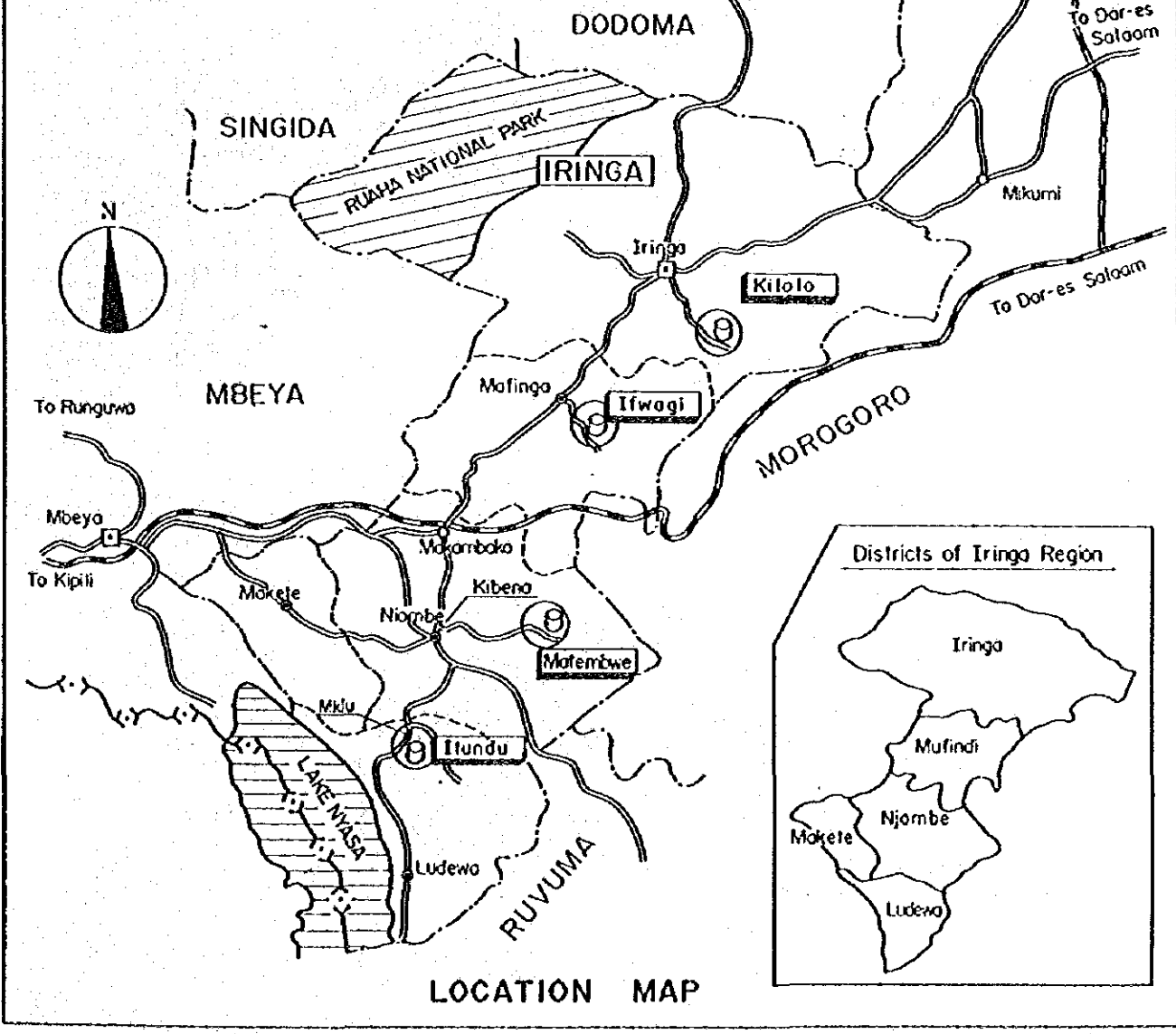
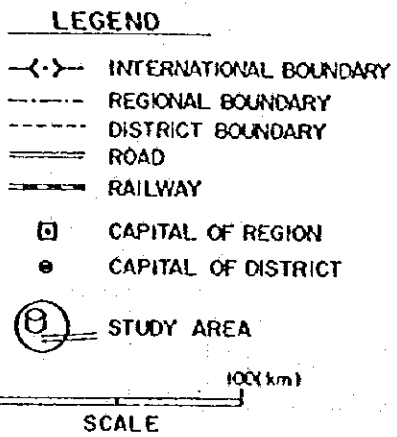


MATEMBWE



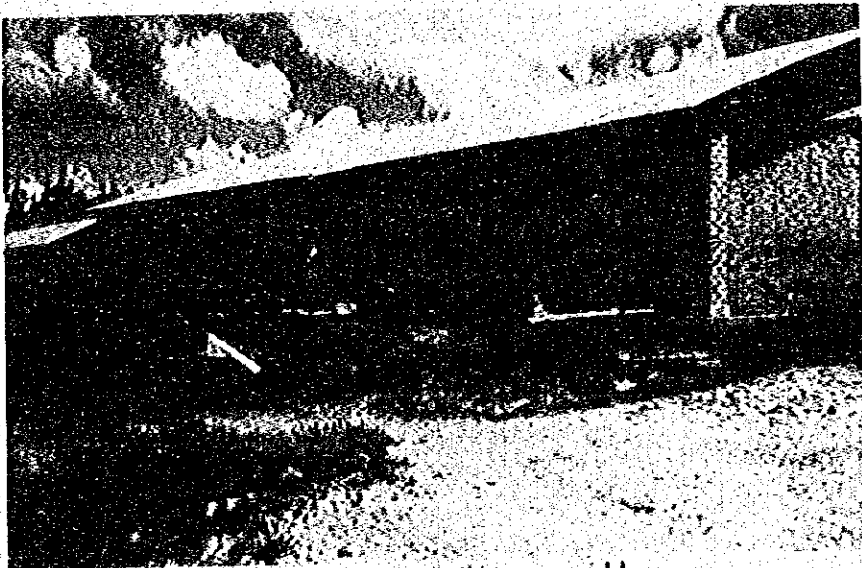
ITUNDU

PERSPECTIVE VIEW OF PROPOSED GODOWNS





Maize stocked outdoors at Hundu village



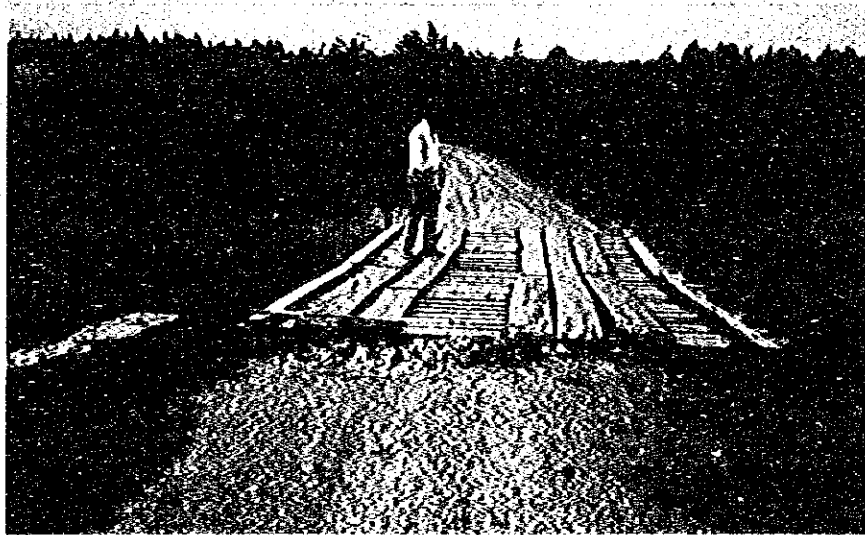
Primary Society's godown of Kitowo village



Primary Society's godown of Kilo village



Road to be improved with cross drain(Iringa Kilolo)



Wooden bridge to be reconstructed(Kibena Matembwe)



Road to be improved with drainage facilities(Mkiu-Uundu)

SUMMARY

SUMMARY

Tanzania economy is almost entirely dependent on the agricultural sector. Agricultural production and its related activities account for about 40 percent of GDP, and employ more than 90 percent of the labour force. Tanzania has given high priority to the development of the agricultural sector. Despite the efforts made by the Government, Tanzania is still facing great difficulties in reaching food self-sufficiency. To overcome these difficulties, the Tanzania Government worked out an integrated National Food Strategy in 1983 in which major emphasis was put on the improvement of transport and storage infrastructure to facilitate the marketing and storage of food grain and agricultural inputs. In this context the Government of Tanzania has formulated the Project for Improvement of Agricultural Storage and Transportation System in Iringa Region, and has requested the Government of Japan for a grant aid for the implementation of the Project.

In response to the request from the Government of Tanzania, the Government of Japan agreed to conduct a basic design study to examine the viability of the Project and to work out a specific basic design. Accordingly, a JICA Basic Design Study Team was dispatched from March 31 to May 4, 1988. The study team surveyed and investigated the project area to grasp the present conditions and constraints, collected data required for the basic design study and had a series of discussions with the officials concerned of the Government of Tanzania, and a Minutes of Discussions was signed by both sides on April 9th, 1988.

Main works for which the Government of Tanzania requested Japan's grant aid in relation to the Project are as follows:

- a) Construction of the agricultural multipurpose godowns and its related facilities,
- b) Feeder roads improvement from the trunk road (asphalt pavement road) to the proposed godown construction sites, and
- c) Provision of transportation and road maintenance equipments.

The project aims at the improvement of food security as well as the promotion of agricultural development through the construction of agricultural multipurpose godowns and the improvement of feeder roads connecting godowns with the trunk roads. The main concept of the proposed development is to reduce to the minimum post-harvest losses of grain by providing adequate storage as well as by securing the smooth transportation of grain, to increase agricultural productivity by means of the timely distribution of an adequate amount of

fertilizer and farm inputs, to give farmers incentives to cultivate lands presently under-utilized, thereby increasing farm production, and to improve and stabilize public welfare by ensuring transportation of consumer goods to rural areas.

Assessments of the adequacy of the Project and the contents of the request from the Government of Tanzania have been based on the present conditions of the national agricultural development plan in general and in Iringa Region in particular. The results confirm the necessities in transportation improvement, storage facilities equipment, feeder road improvement, and increase in carrying capacity. It was established that the implementation of the Agricultural Storage and Transportation System Improvement Project will not overlap the assistance program of other donor countries.

The outline of the Project for Agricultural Storage and Transportation System Improvement in Iringa Region is as follows:

1) Agricultural Multipurpose Transit Godown

Item/Site	Kilolo	Ifwagi	Matembwe	Itundu	Total
1. Storage Capacity (ton)	2,700	1,700	2,200	2,200	8,800
2. Storage (m ²) (one story, steel struct.)	1,501.5	955.5	1,092.0	1,092.0	4,641
3. Office Bldg. (m ²) (one story, masonry struct.)	136.5	136.5	136.5	136.5	546.0
4. Guardhouse (m ²) (one story, masonry struct.)	24	24	24	24	96
5. Equipment for Transport. (7 ton class cargo truck)	3	2	2	2	9
6. Equipment for Control					
- Cart	17	12	14	18	61
- Slat conveyor	3	2	2	3	10
- Weighing scale (1,000 kg)	5	3	4	5	17
- Grain moisture meter	14	7	7	15	43
- Grain fumigation kit	2	1	2	2	7
- Fire extinguisher	10	6	8	8	32

2) Feeder Road Improvement

a) Improvement of feeder roads from the trunk road to the proposed godown construction sites.

- Road type : Morrum metalled road
- Effective width : 4.0 m
- Total length : about 72.0 km

b) Equipment for road maintenance

- Bulldozer : 1 unit of 17 ton-class capacity
- Motor grader : 1 unit of 9 ton-class capacity
- Tippers : 2 units of 7 ton-class capacity
- Backhoe : 1 unit of 0.4 m³-class capacity

The outline of the proposed construction sites and feeder roads is described below.

- Kilolo site

The proposed construction site for the godown is located about 4 km north of Kilolo village which is about 31 km from Iringa town, the capital of Iringa Region. The elevation at the site is about 1,920 m above sea level, the same elevation as the road nearby. The site with an area of approximately 7,300 m² (50 m by 160 m) is owned by village. The feeder road is the regional non-paved road with 3.5 - 6.0 m in width. Its length is approximately 31.0 km from Iringa town to the proposed site.

- Ifwagi site

The proposed construction site for the godown is located on the north of Ifwagi village which is about 23 km away from Mafinga town, the capital of Mufindi District. The elevation of the site is approximately 1,850 m above sea level with the village owned area of approximately 32,000 m² (200 m by 160 m). The site faces the district road on its western side. The feeder road is the regional non-paved road with 3.5 - 6.0 m in width. Its length is approximately 22.5 km from Mafinga town to the proposed site.

- Matembwe site

The proposed construction site for the godown is located about 2 km west of Matembwe village which is about 60 km away from Njombe town, the capital of Njombe District. The site is elevated at approximately 1,600 m above sea level, almost the same elevation as the surrounding area. The site is owned by the village and has an area of approximately 3,900 m² (47 m by 88 m). The feeder road is the regional non-paved road with 3.5 - 6.0 m in width. The length from Kibena town to the proposed site is approximately 54.0 km.

- Itundu site

The proposed construction site for the godown is located on a hill top at an elevation of about 1,700 m above sea level and is about 3 km east of Itundu village which is located about 90 km southwest of Njombe town. The site has an area of approximately 3,600 m² (40 m by 90 m). The feeder road is the national and rural non-paved road with 4.0 - 4.5 m in width. The length from Mkiu to the proposed site is approximately 11.5 km.

Each proposed construction site with its area and ground conditions, is suitable for the construction of storage facilities. The right to these sites is presently held by each village and no problem is expected in acquiring the right.

The executing agency of the Project is the Iringa Regional Development Director's office (the RDD's office). The RDD's office will also act as a coordinating body to other relevant organizations.

After the implementation of the Project, cooperative unions such as IMUCU and NJOLUMA will be responsible for the management and maintenance of the proposed godowns and related facilities through their branch offices in the district, under the control of the RDD's office.

RDD will be primarily responsible for maintenance of the improved feeder roads. Equipment for road maintenance will be operated by the civil department of the RDD's office.

The implementation period to complete the Project will be sixteen and a half (16.5) months, after signing the Exchange of Notes (E/N), which will cover all preliminary work, detailed design, preparation of tender documents, tendering, approval of tenders, contracts, etc. Construction works to be undertaken by the Japanese side will be: construction of buildings

including the agricultural multipurpose godowns, administration offices, guard houses, procurement of the grain quality control equipment, and also improvement of the road including feeder roads, road structures, and procurement of the equipment for road maintenance. Those to be made by the Tanzania side will be: land preparation of the construction site, installation of gates and fences, etc.

Direct project benefits expected by the implementation of the Project are the reduction of post-harvest losses in the project area. Presently, the losses are multifariously caused by shortage of storage, poor road and transportation facilities, lack of equipment for grain quality control. Expected indirect benefits will be the reinforcement of agricultural cooperatives, improvement of food security as effects of the pilot project, inducement to farmer for production increase, improvement of living conditions and stabilization of social welfare conditions, etc.

As the executing agency of the Project, has so far no experience on implementation of Japan's grant aid projects, the RDD's office has made preparation for undertaking the project receiving cooperation of the RDD's office in Kilimanjaro Region, and Ministry of Agriculture and Livestock Development, etc., which are both familiar with Japan's grant aid system. Furthermore, IMUCU and NJOLUMA as management organization, already have various functions as a marketing agency of farm products including control of storage, transport facilities, etc. in the rural areas. Therefore no problem will arise for the management of the Project.

Taking into consideration the expected direct and indirect benefits mentioned above; it is concluded that the Project for Improvement of Agricultural Storage and Transportation System in Iringa Region is commendatory and appropriate for Japan's Grant Aid Program. In order to realize a smooth implementation of the Project and adequate operation and maintenance after implementation of the Project, it is recommended to strengthen the organization staff for operation and maintenance of the godowns, especially in the field of grain quality control with fumigation. Presently, no well trained staff for this purpose is available in IMUCU and NJOLUMA. Staff should be trained at institutions such as NMC.

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ABBREVIATIONS

AISCO	:	Agricultural and Industrial Supplies Corporation
ATC	:	Air Tanzania Corporation
CRDB	:	Cooperative and Rural Development Bank
DADO	:	District Agricultural Development Office
DED	:	District Executive Director
EC	:	European Community
EEC	:	European Economic Community
E/N	:	Exchange of Notes
EL	:	Elevation
FAO	:	Food and Agriculture Organization of the United Nations
F/S	:	Feasibility Study
GDP	:	Gross Domestic Product
HYV	:	High Yielding Variety
IDA	:	International Development Association
IMF	:	International Monetary Fund
IMUCU	:	Iringa-Mufindi Cooperative Union
IRADEP	:	Iringa Region Agricultural Development Program
JICA	:	Japan International Cooperation Agency
JIS	:	Japan Industrial Standards
LV	:	Local Variety
MOA	:	Ministry of Agriculture and Livestock Development
MOCW	:	Ministry of Communication and Works
MOP	:	Ministry of Finance, Economic Affairs and Planning
NJOLUMA	:	Njombe-Ludewa-Makete Cooperative Union
NBC	:	National Bank of Commerce
NMC	:	National Milling Corporation
OECF	:	Overseas Economic Cooperation Fund
O&M	:	Operation and Maintenance
RADO	:	Regional Agriculture Development Officer
RDD	:	Regional Development Director
SAP	:	Structural Adjustment Program
TANESCO	:	Tanzania Electric Supply Company Limited
TAZARA	:	Tanzania Zambia Railway Authority
TFA	:	Tanganyika Farmers Association
TFC	:	Tanzania Fertilizer Company
TPTC	:	Tanzania Posts and Telecommunications Corporation
TRC	:	Tanzania Railway Corporation
TRM	:	Trunk Road Maintenance
USDA	:	United States Department of Agriculture
VCU	:	Vuasu Cooperative Union

UNITS OF MEASUREMENT

1. Length and Height

mm	:	millimeter
cm	:	centimeter
m	:	meter
km	:	kilometer

2. Area

cm ²	:	square centimeter
m ²	:	square meter
ha	:	hectare
km ²	:	square kilometer

3. Volume

cm ³ , cc	:	cubic centimeter (= ml)
ml	:	milliliter (= cc)
l	:	liter (= 1,000 ml)
m ³	:	cubic meter

4. Weight

mg	:	milligram
g	:	gram
kg	:	kilogram
t	:	ton (= 1,000 kg)

5. Time

S, sec	:	second
min	:	minute
hr	:	hour

6. Electrical Measurements

V	:	volt
kV	:	kilo volt
Hz	:	hertz
kWh	:	kilo Watt hour
MVA	:	Mega Volt Ampere

7. Other Measure

%	:	percent
HP, PS	:	horse power
°C	:	degree centigrade
ppm	:	parts per million
Nos	:	number(s)
μΩ	:	micron ohm
°S	:	south latitude
°E	:	east longitude

8. Currencies

US\$:	US Dollar
Tsh.	:	Tanzanian shilling
Yen	:	Japanese Yen

CHAPTER 1

CHAPTER 1 INTRODUCTION

As one of the grain producing area in Tanzania, the Iringa Region has insufficient capacity in storage godowns and the bad condition of rural roads cause congestion in the transport of grain which is instrumental in heavy post-harvest loss. Improvement efforts for self-sufficiency in food, one of the most important goals of the economic development plans in the United Republic of Tanzania (hereinafter referred to as "Tanzania"), are hampered by the above difficulties. The Government of Tanzania, in the light of the aforesaid condition, has formulated "The Project for Improvement of Agricultural Storage and Transportation System in Iringa Region", and requested the Government of Japan to extend a grant aid for the execution of the Project.

In response to this request, the Government of Japan entrusted the Japan International Cooperation Agency (JICA) with conducting the basic study for the Project, and JICA dispatched a study team for the Project headed by Mr. K. Ishii, Senior Officer for Storage Technique, Food Agency, Ministry of Agriculture, Forestry and Fisheries, to Tanzania from March 31 to May 4, 1988.

During its stay in Tanzania, the study team held meetings with Tanzanian authorities to confirm the background and the details of the request and the executing organization of the Project, operation and maintenance system after the completion of the Project, and investigated construction sites and road portions to be rehabilitated. The team made a field reconnaissance in and around the project area to grasp the present condition, and had discussions with the concerned officials of the Government of Tanzania on fundamental items. Through the field investigation and discussions, the study team prepared a minutes of discussion on the confirmed matters with the Government of Tanzania, and exchanged the minutes signed by the representatives of both sides. The minutes of discussion, members of the study team, itinerary of the study team, and list of personnel contacted are given in ANNEX-1.

The study team clarified the background, objectives and situation of the Project, and after coming back to Japan analysed the viability as a grant aid program on such items as the significance, content and effect. Based on the above, the team conducted the analysis and formulation of basic design, project costs estimation, implementation schedule, operation and maintenance plan and project evaluation. This report represents the results of the aforesaid basic design study of both field survey and analyses in Japan.

CHAPTER 2

CHAPTER 2 BACKGROUND OF THE PROJECT

2.1 General Conditions in Tanzania

2.1.1 National Land and Population

Tanzania is a nation established in 1965 through the combination of Tanganyika and Zanzibar which gained independence in 1961 and 1964 respectively. Tanzania is located between lat. 1° and 11°45'S, and between long. 29°20' and 40°38'E, and covers 945,000 km². Most of its territory is covered with savanna and dry-savanna, with some tropical rain forests and coastal mangrove forests. The climate is cool around Mt. Kilimanjaro in the north and around the Lake Nyasa in the west.

The climate can be divided into two seasons; a dry season from June to October and a rainy season from November to May. In Tanzania most parts suffer from flood or drought because of insufficient or irregular rainfall. The mean temperature is influenced by altitude, and ranges from around 26°C on the coastal plains to under 20°C above 1,200 m.

In 1986 the total population of Tanzania was 21.9 million, and the annual growth rate is 3.4%. The population density is 22.4 persons/km². The Government of Tanzania predicts that the total population will be 34.8 million in 2,000, with an increase by 1.6 times of that in 1986. As for the educational system, it takes 6 years for elementary school, 6 years for junior high school, and 3 years for university. The literacy rate was as high as 79% in 1980 and since then the Government has put much stress on education.

2.1.2 National Economic Trends

The Gross Domestic Product (GDP) in 1986 amounted to Tsh.131,300 million (US\$7,200 million) in total and Tsh.6,000 (US\$332) per person. The export value in 1986 amounted to US\$770 million. Tanzania's economy is based on agriculture with emphasis on such crops as coffee, cloves, cotton, cashew nuts, tobacco and tea. The agricultural sector provided 39% of GDP in 1985, and the export value of products of the above six crops amounted to 84% of the total export value in 1985. Both GDP and agricultural products were growing steadily at rates of 5.4% and 3.4% during the period of 1968-1972 when economic difficulties intervened. Economic growth was depressed from the late 70s due to the sudden rise of oil prices. The situation deteriorated further due to the worldwide recession, bad export conditions and droughts in the early 1980s. The economic situation became stagnant as may be

seen from the average growth rate of GDP during the period of 1980-1982 which was 1.1%. To cope with the decline, the Government of Tanzania announced a three year Structural Adjustment Program (SAP) in 1982 to launch an economic recovery. As a result of this Program, GDP climbed from Tsh.23,600 million in 1983 to Tsh.25,500 million in 1986 at 1976 constant prices with an annual growth rate of 2.6%. The growth rate of per capita GDP, however, was negative due to the increase in population. The principal economic indices are tabled below.

Item	1982	1983	1984	1985	1986
Population (million)	19.2	19.8	20.5	21.2	21.9
GDP (million Tsh.)	52,546	61,008	76,264	99,330	131,346
GDP (million Tsh., 1976 price)	24,104	23,472	23,930	24,561	25,486
GDP per capita (Tsh.)	2,737	3,081	3,720	4,685	5,998
GDP per capita (Tsh., 1976 price)	1,255	1,185	1,167	1,159	1,164
Export (million Tsh.)	3,767	4,573	5,125	4,994	11,391
Import (million Tsh.)	10,239	10,478	12,960	17,470	34,329
Balance (million Tsh.)	-6,472	-5,905	-7,856	-12,476	-22,938
Inflation Rate (%)	28.9	27.1	36.0	33.3	32.5

Source: The Economic Survey 1986

The inflation rate, which was 10% in 1970s, became 36% in 1984. Wages declined sharply compared with those of 1980, while the nominal wage was raised by 25% in 1981 and 35% in 1984.

Tanzania's national budget has shown deficits since 1980 thus the development budget has been severely constrained. Such policies as subsidy curtailment to semi-government enterprises, partial charge of the cost of junior high school education to individuals, and the introduction of development tax on people over 18 years old, have been introduced. Since SAP the Government has also been promoting reduction of imports and the maximum use of domestic materials, restraining new investment and giving priority to rehabilitation and ongoing projects.

Measures such as SAP to activate the economy and increase production, have already had some effects, but not yet enough. Foreign exchange insufficiency continues to seriously restrain the nation from reconstructing the economy and growing property.

2.1.3 National Development Plans

The Government of Tanzania has had five (5) National Development Plans since independence in 1961;

i)	First	3-year Plan	(1961-1964)
ii)	First	5-year Plan	(1964-1969)
iii)	Second	5-year Plan	(1969-1974)
iv)	Third	5-year Plan	(1976-1981)
v)	Fourth	5-year Plan	(1981-1986)

The fundamental purpose of the economic development plans up to the 1970s, was that the growth rate during the objective period should be over 6% per annum, based on the principle of promotion of increased industrialization and agricultural production. In practice, however, the growth rates during the First, Second and Third 5-year Plans were only 5%, 4.8%, and 0.4%, respectively.

The Fourth 5-year Plan was suspended, and a National Economic Survival Program (NESP) was introduced in 1981. During the period 1982-1984, the Government further adopted the Structural Adjustment Program (SAP) with the objectives of; i) increasing production, especially agricultural production, ii) recovery of financial deficit and restriction of money supply, iii) promotion of exports and iv) equalization of income distribution. However, the achievement of these objectives has so far been limited. The subsequent Economic Recovery Program (ERP) was launched in 1986 for the period 1986-1990. In the ERP, the target annual growth rate of GDP was set at 4.5% on average to be attained in the following manner:

- i) Increased production of food crops and export crops through incentives to production, improvement of the marketing system and increased supply of agricultural inputs
- ii) Rehabilitation of social infrastructures
- iii) Provision of foreign exchange to priority sectors
- iv) Improvement of terms of national and international finance

The ERP lays stress on; i) stabilization of farm gate prices, ii) promotion of free trade, iii) establishment of a financial policy for inflation control and effective resource distribution and iv) system reform for the purpose of rationalization of the public sector.

The above is the trend of the economic development plans in Tanzania, and is characterized by the change of basic policy from socialistic line to liberalistic one. The economy liberation has been gradually promoted since SAP, with devaluation in 1984 recommended by IMF, study on controlled economy, reformation of corporation and trade liberation. Liberalism of economy, which was launched during the economic crisis of the early 1980s, is considered to continue.

2.2 Outline of Related Development Plans

2.2.1 Agriculture

Eight (8) percent of the territory of Tanzania, or 6.2 million ha, is agricultural land. About 85% of the population live in rural areas, and agriculture employs nearly 90% of the economically active population.

As mentioned earlier, the amount of agricultural products such as coffee, cloves, cotton, cashew nuts, tobacco and tea, corresponded to 84% of total exports, coffee corresponding to 41% in 1985. These export crops, however, have a tendency to decrease in quantity. Sisal, which used to be the main export product, now corresponds to only 2-3% of total exports.

Regarding grain crops, maize production declined to 1,360,000 tons because of drought in 1983, and 230,000 tons of maize had to be imported. The maize production recovered to 2,000,000 tons in 1985. The government of Tanzania is promoting the agricultural development plan which aims at establishment of self-sufficiency in food. Export crops such as coffee has partly been stimulated to be converted to food crops under this plan, and the production of grain crops such as maize and millet is increasing. The production of principal grain in Tanzania is shown below.

Crop	(Unit: 1,000 tons)			
	1982	1983	1984	1985
Maize	1,549	1,363	1,939	2,093
Paddy	379	409	511	427
Wheat	86	71	72	83
Millet	373	206	267	300
Sorghum	480	793	492	724
Pulse	322	355	355	358

Tanzania National Food Policy, however, pointed out that the improvement of self-sufficiency in food has been hampered by much crop losses before and after harvest, faulty transportation roads in rural area and inferior farming practices.

The National Milling Corporation (NMC) had been in charge of the marketing of food crops such as maize, paddy and pulse, with administrative problems such as that the products had to be always purchased at fixed price and that the selling price at NMC had to be settled lower than the price including necessary cost. Accordingly, the organization has now been reformed in such a way that the Cooperative Union handles agricultural products instead of NMC in 1984.

2.2.2 Agricultural Development Plans

(1) Administration

The administration system of Tanzania consists of two (2) Offices and sixteen (16) Ministries under the President as shown Fig. 1. The Ministry of Finance, Economic Affairs and Planning is responsible for foreign economic cooperation.

The Ministry of Agriculture and Livestock Development, and the Ministry of Local Government and Cooperatives are directly concerned with agricultural development. The former is responsible for agricultural research and extension, and agricultural development schemes; the latter is responsible for promoting the development of village communities and the Cooperative Union/Cooperative Society.

All the development activities of the Region are under the responsibility of the Regional Development Director's office (the RDD's office), which is organized under the Office of the Prime Minister. The RDD's office consists of four (4) executive divisions and twelve (12) divisions under the control of RDD as shown in Fig. 2. The RDD's office is responsible for the District Executive Director's offices (DED's offices) which are located in each district. Agricultural administration is undertaken by the Ministry of Agriculture and Livestock Development though in the name of the RDD's office. The organization of the DED's office at district level is similar to that of the RDD's office.

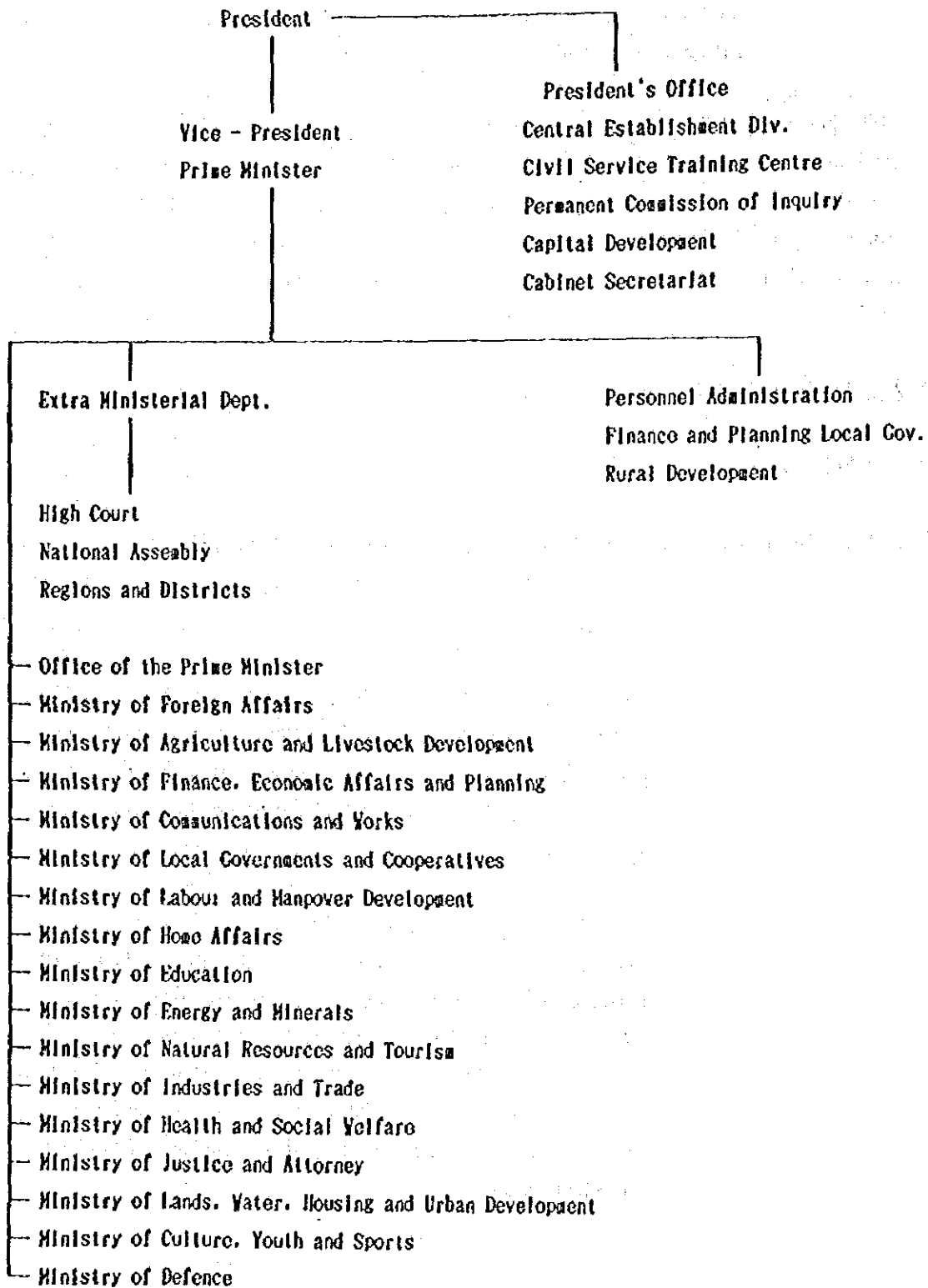


FIG.-1 ADMINISTRATION MAP OF THE GOVERNMENT OF TANZANIA

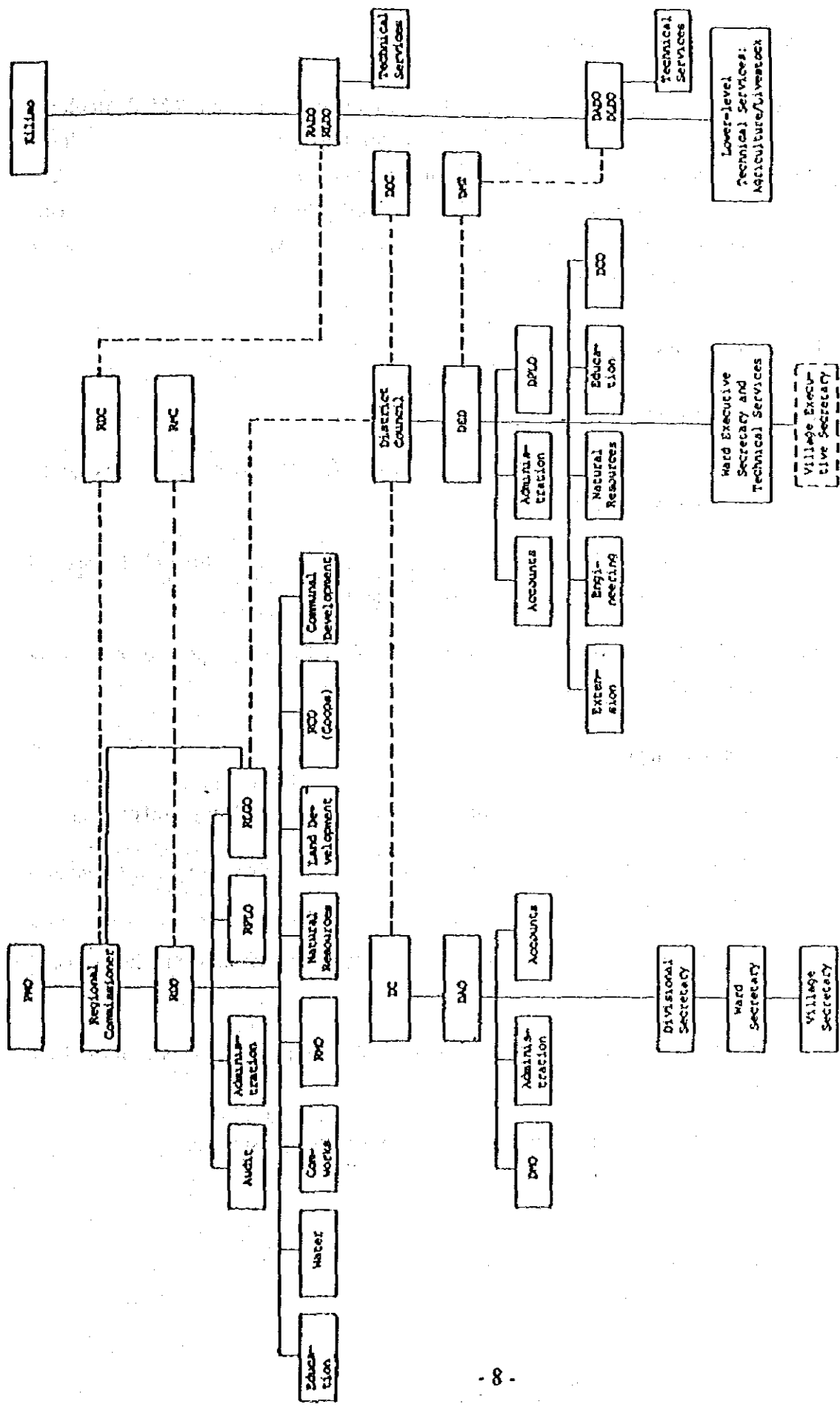


FIG.- 2 ORGANIZATION MAP OF REGIONAL DEVELOPMENT DIRECTORS OFFICE IN IRINGA REGION

(2) Agricultural Development Plans

The Government of Tanzania currently has two policy documents "The Agricultural Policy of Tanzania" and "Tanzania National Food Strategy", which set out agricultural strategies to attain independence of national economy through self-sufficiency in food. The "Tanzania National Food Strategy" provides a comprehensive prescription covering production, processing and marketing for the three target terms; short-term (1980-1985), medium-term (1985-1990) and long-term (1990-2000).

The main goals are as follows:

Goals for the short-term plan

- i) Improvement of the transport and storage facilities for the smooth conveyance of food crops and farm inputs,**
- ii) Timely supply of the proper amounts of fertilizers, agricultural chemicals and farm implements for small-scale farmers, and**
- iii) Rationalization of the prevailing price policy for the purpose of promoting effective and economic food production.**

Goals for the medium-term plan

- i) Agricultural research and multiplication of improved seeds for food crops,**
- ii) Upgrading of technique through provision of acceptable packages of techniques for each crop and area,**
- iii) Improvement of existing small-scale irrigation systems and the maintenance of irrigation facilities in the rural areas,**
- iv) Strengthening of agricultural extension and training services, as well as of the agricultural credit system, and**
- v) Taking measures for prevention of pre- and post-harvest losses.**

Goals for the long-term plan

- i) Expansion of irrigation systems**

(3) Foreign Aid

Foreign aid to Tanzania in recent years is summarized below.

Year	DAC Countries	International Organizations	OPEC Countries	Total
1977	257.4	75.9	6.9	340.2
1978	332.6	90.8	1.0	424.4
1979	457.4	127.4	3.6	588.4
1980	523.4	127.5	7.4	658.3
1981	484.8	173.2	43.9	701.9
1982	483.7	187.5	11.3	682.5
1983	427.8	149.6	43.4	620.8
1984	407.4	140.4	11.1	558.9

Source: OECD, Geographical Distribution of Financial Flows to Developing Countries, 1981 & 1986.

The total amount of foreign aid for Tanzania was growing steadily up to 1981, almost doubling compared with 1977, but it declined to US\$558.9 million in 1984, since countries of the west, mainly West Germany, restrained aid until stand-by credit was agreed with IMF.

Scandinavian countries including Sweden are important donor countries, and constantly account for over 20% of the total amount of aid. Bilateral aid provided a high percentage of between 60% and 70% throughout the period from 1977 to 1984. Of the international organizations, International Development Association (IDA) and EEC are the main donors. As for the form of the aid, grants provides the largest amount, of around 70% from 1981 to 1984, since Tanzania is one of the least-developed countries and was very badly influenced by the oil crisis. Of the total amount of technical aid, US\$216 million, agriculture, forestry and fishery amount to 28%, industry 14% and sanitation 12%. Main recent aid objects concerning agricultural development are as follows:

	Name of Study	Donor	Year Commenced
1	Small-scale paddy cultivation development project	AfDB	1982
2	Irrigation development project for paddy cultivation in Morogoro Region	AfDB	1982
3	Paddy cultivation development project in Dakawa	AfDB	1983
4	Water supply project for Iringa, Mbeya and Ruvuma	Denmark	1983
5	Pest control project	Denmark	1983
6	Iringa development project	EEC	1983
7	Nordic project	DANIDA (Denmark)	1984