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A NATIONAL POLICY ON INFORMATION SYSTEMS AND SERVICES FOR TANZANIA: FORMULATION AND STRATEGY FOR IMPLEMENTATION

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN INFORMATION SCIENCE

BY

DOROTHY ANDREA SEKIMANG'A

JUNE 1992

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

(Signed)

Dorothy Andrea Sekimang'a

June 1992

The thesis has been submitted for examination with my approval as a university advisor.

(Signed)

Prof. A. Neelameghan

June 1992

Dedication

This work is dedicated to my husband Peter, our daughter Narindwa and sons Chambega and Lusiu.

ACKNOWLEDGEMENT

I would like to acknowledge the assistance I received from individuals and institutions, during the preparation of this work. It is not practicable to mention each and every individual who helped me in one way or another. However, my work would be incomplete if I fail to mention a few names whose assistance has been particularly valuable.

First, I would like to thank the International Development Research Centre (IDRC) of Canada for providing the funds which enabled me to pursue this course. Secondly, I am heavily indebted to my supervisor, Prof. A. Neelameghan for his continuous and tireless guidance from the beginning to the end of this work; Ato Getachew Birru, the Dean of SISA, for facilitating my travel to Tanzania for data collection; Mr. E.E. Kaungamno, the Director of Tanzania Library Services Board and Mr. C.S. Ilomo, the Chief Librarian, for their assistance and inspiration while I was collecting data in Tanzania; Ato Solomon Yewondwossen, the Computer Laboratory Supervisor at SISA for all the help rendered whenever needed; and finally, special thanks are due to my husband, Peter for taking care of our children and enduring all the inconveniences caused by my absence from home.

D.A.S

ABSTRACT

The information professionals, decision-makers as well as policy-makers aware of information issues in Africa, are demanding that their governments formulate specific national information policies.

It has been realized in wider circles that coordination, resource sharing and information exchange are futile in the absence of explicit principles and directions articulated in the form of legal policies. Policies are declarations of intent to take action, and they help to resolve confusion over who is responsible, at the national level for taking stock of advances in technological capabilities as well as adverse effects on information systems and services.

In Tanzania attempts have been made to create a coordinated national information network to facilitate planning and decision-making in all sectors of development. However, these attempts have not yet been fruitful because an overall policy to guide such an establishment does not exist.

This work is an attempt to provide a methodology aimed at formulating a national policy on information systems, a premise for a coordinated national information system for Tanzania.

Background information on Tanzania, and description of the existing information infrastructure is followed by a discussion of explicit policy issues, model policy statements and implications and strategies for their implementation. Finally, a step by step methodology for formulating the policy, divided into three phases is given.

It is hoped that this thesis will serve as a groundwork for the process of formulation of a national policy on information for Tanzania, and the document recommends that Tanzania embark on this process as soon as possible.

List of Abbreviations

AGRIS - International Information System for Agricultural Sciences and Technology.

BML - Business Machines Ltd.

CARIS - Current Agricultural Research Information Systems

CARMATEC - Centre for Agricultural Mechanization and Rural Technology

FAO - Food and Agricultural Organization

IBE - International Bureau of Education

ICL - International Computers Ltd.

IDM - Institute of Development Management (Tanzania)

IFM - Institute of Finance Management (Tanzania)

IDRC - International Development Research Centre (Canada)

ISORID - International Information Systems on Research in Documentation

NATIS - National Information System

NBC - National Bank of Commerce (Tanzania)

NCR - National Cash Register

NIMR - National Institute of Medical Research

PADIS - Pan African Documentation and Information System

PC - Personal Computer

POPIN - Population Information Network

SADCC - Southern African Development Coordinating Conference

SUA - Sokoine University of Agriculture (Tanzania)

TANESCO - Tanzania Electrical Supply Company

TANDOC - Tanzania National Documentation Centre

TANRIS - Tanzania Research Information Service

TEMDO - Tanzania Engineering, Manufacturing and Design Organization

TLSB - Tanzania Library Services Board
TIRDO - Tanzania Industrial Research Development Organization
TISCO - Tanzania Industrial Studies and Consulting Institution
UNESCO - United Nations Educational Scientific and Cultural Organization
UNIDO - United Nations Industrial Development Organization

UNDP - United Nations Development Programmes
UPE - Universal Primary Education
USAID - United States Agency for Internanational Development
VITA - Volunteers in Technical Assistance

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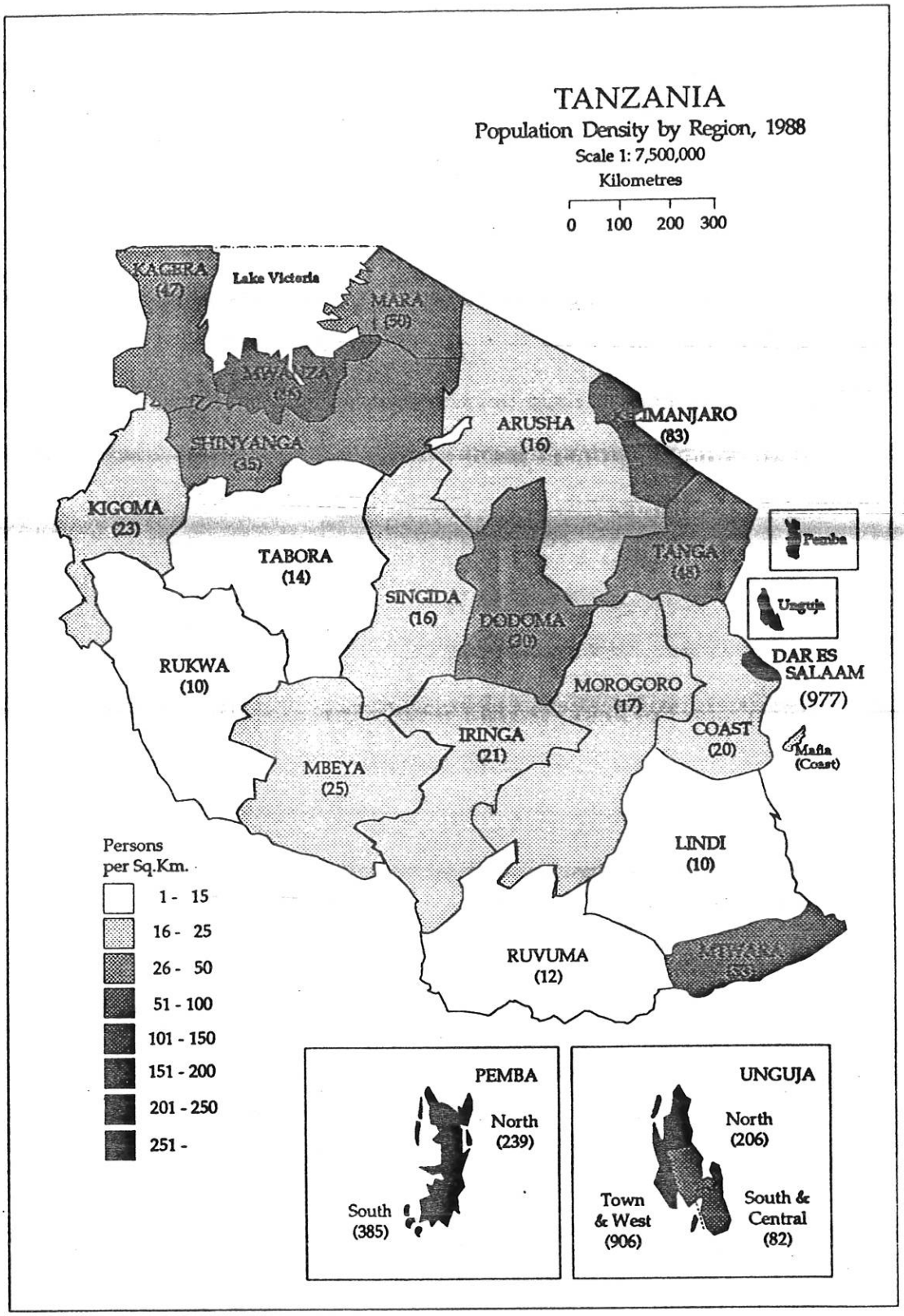
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AFRICA — AFRIQUE
0 200 400 600 800 1000 Mls.
0 400 800 1200 1600 Kms.
ATLANTIC OCEAN
OCÉAN ATLANTIQUE
MEDITERRANEAN SEA
MER MÉDITERRANÉE
ALGER
TUNIS
TUNISIE
RABAT
MAROC
TRIPOLI
CAIRO
EL AAIUN
Western Sahara
ALGERIE
LIBYAN ARAB JAMAHIRIYA
EGYPT
PERSIAN GULF
GOLFE PERSIQUE
RED SEA — MER ROUGE
MAURITANIE
NOUAKCHOTT
DAKAR
SENEGAL
GAMBIA
BANJUL
GUINEA BISSAU
BISSAU
MALI
NIGER
TCHAD
SUDAN
KHARTOUM
BAMAKO
NIAMEY
BURKINA FASO
OUAGADOUGOU
N'DJAMENA
DJIBOUTI
GUINEE
CONAKRY
FREETOWN
SIERRA LEONE
MONROVIA
LIBERIA
BENIN
NIGERIA
CÔTE D'IVOIRE
GHANA
ABIDJAN
ACCRA
LOME
LAGOS
COTONOU
TOGO
ADDIS ABABA
ETHIOPIA
SOMALIA
MOGADISHU
CAMEROUN
REP. CENTRAFRICAINE
BANGUI
MALABO
EQU. GUINEA
YAOUNDE
SAO TOME & PRINCIPE
SAO TOME
LIBREVILLE
GABON
CONGO
ZAIRE
UGANDA
KAMPALA
KENYA
NAIROBI
RWANDA
KIGALI
BURUNDI
BUJUMBURA
BRAZZAVILLE
KINSHASA
UNITED REP. OF TANZANIA
DAR ES SALAAM
INDIAN OCEAN
OCÉAN INDIEN
LUANDA
ANGOLA
COMOROS
MORONI
MALAWI
LILONGWE
ZAMBIA
LUSAKA
HARARE
ZIMBABWE
MOZAMBIQUE
MADAGASCAR
ANTANANARIVO
Namibia
WINDHOEK
BOTSWANA
GABORONE
PRETORIA
MAPUTO
MBABANE
SWAZILAND
MASERU
LESOTHO
SOUTH AFRICA
CAPE VERDE
PRAIA
SEYCHELLES
VICTORIA
KILOMETRES
REUNION
SAINT DENIS
PORT LOUIS
MAURITIUS
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0 100 200 Mls.
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CART-M-61-45-Rev.1985
061-424


TANZANIA
Population Density by Region, 1988
Scale 1: 7,500,000
Kilometres
0 100 200 300
KAGERA (17)
Lake Victoria
MARA (50)
MWANZA (45)
SHINYANGA (35)
KIGOMA (23)
TABORA (14)
RUKWA (10)
ARUSHA (16)
KILIMANJARO (83)
TANGA (45)
Pemba
Unguja
SINGIDA (16)
DODOMA (20)
DAR ES SALAAM (977)
MOROGORO (17)
COAST (20)
Mafia (Coast)
IRINGA (21)
MBEYA (25)
LINDI (10)
RUVUMA (12)
MTWARA (50)
Persons per Sq.Km.
1 - 15
16 - 25
26 - 50
51 - 100
101 - 150
151 - 200
201 - 250
251 -
PEMBA
North (239)
South (385)
UNGUJA
North (206)
Town & West (906)
South & Central (82)

CHAPTER 1

PROBLEM STATEMENT AND JUSTIFICATION

1.1 INFORMATION AND DEVELOPMENT

1.1.0 Any economic, social and political system need information to perform efficiently. Timely access to relevant and reliale information is needed by planners, managers, executives, researchers in government and private sectors, professional practitioners etc. to ensure gainful and efficient decision making. Information is needed for finding out areas which are economically stagnating; comparing and contrasting the performance of different sectors of the economy and identifying the fields which are likely to yield the largest dividends at the quickest pace. The relevance of information to sectoral and project evaluation is also acknowledged in its role in helping planners look afresh at development alternatives. Information has therefore to be harnessed like any other national resource to the task of building a country. As a matter of fact, whereas information may not be an end in itself, it is actually a means to an end in development of all the sectors of the economy.

1.1.1 One of the current major developments in African countries is the realization of the need for information in all aspects of planning and decision making. It is being realized, in the wider perspective that information could make significant contribution in practically every stage of development process.

Many African countries (Governments) therefore, are supporting the establishment of information institutions, libraries, documentation centres, public archives and specialized information and data centres.

1.2 THE TANZANIA SITUATION

1.2.0 Tanzania is among the African countries that support the establishment of information institutions at various levels. At present more than two hundred information units exist in the country and more are being established. The type of information units existing include the public library system which has a network covering all but three of the 20 administrative regions; academic and school libraries; specialized libraries and documentation centres in some institutions, such as, ministries and parastatals to serve the needs of specialized clientele.

The National Archives of Tanzania also maintains a network of archives services with offices in the major Regions of the country. There are also several mass media institutions e.g broadcasting services, national newspapers, party newspapers, Tanzania News Agency, and Tanzania Information Services.
The Bureau of Statistics is another important information institution which collects data on various aspects of development in the country.

1.2.1 Whereas most of these information units have been created within a framework of given legislations, there has been a considerable amount of overlap, inconsistencies and contradictions in both the legislations and the terms of reference of these information units.

There is also no single mechanism/board to coordinate and advise on the creation, legislation and operation of these information units. As a result the overall collection, processing and dissemination of information is done haphazardly resulting in duplication of effort, wasted resources and some unexploited information resources. Furthermore, although information is considered as a vital resource in development, to-date the operations of information services has never been included in the overall development plans of the country and neither has it been treated as a sector like agriculture, industry, energy resources etc. Consequently information activities have often received very low priority especially in budget allocations.

1.2.3 In Tanzania efforts have been made to formulate a network to coordinate the information services and systems and to facilitate resource sharing. In 1985, for example, the Tanzania Library Services Board (TLSB) with the help of UNESCO held a seminar on resource sharing which drew participants from the East and Southern Africa region.

Also in 1989, a workshop for the establishment of a network of libraries, archives and documentation services was conducted in Dar es salaam by TLSB in collaboration with the University of Dar es salaam, with support of the German Foundation for International Development (DSE) and UNESCO. However, despite all these efforts there has not been any significant change in the scope and practise of information services. The information services are still unco-ordinated and a mechanism for coordination has not yet been created. An important question which arises is why all these efforts have not borne fruit. The major question is which should come first: efforts to create a network and a coordinating mechanism, or to establish a legal policy for such an establishment. One view which is now shared by many information professionals especially in the Africa region, where the problems related to information services are rampant, is that a rational and systematic approach to Africa's information problems need to be found urgently; and that the magnitude of the problem requires the framework of a government policy for solution. Therefore, a national policy for information systems and services for Tanzania is, not only essential, but long overdue. But what exactly is involved in the formulation and implementation of an information policy?. This issue will be examined in some detail in the following pages.

1.3 WORKING DEFINITIONS

The definitions which are given below have been taken from the UNESCO/UNISIST guide for formulation of policies for information systems and services (Montviloff, 1990 p.3), unless otherwise stated.

1.3.1 Information

In the Oxford Advanced Learner's Dictionary (Hornby 1989 p.641) the term 'information' is defined thus, "facts told, heard, or discovered (about somebody, something); give, pass on, receive, obtain, seek, find, collect etc information (on/about, somebody/something)". However in a more detailed definition Victor Montviloff (Montviloff, 1990, p.7) says 'information is some meaningful message transmitted from source to users. In this process information may be stored in information products and systems organized for the purpose of providing a memory in numerical, textual,sound and image forms.

Information may also be communicated through interpersonal channels. The source may be documentary, material institutions or people'.

1.3.2 Data are facts, the raw material from which information is created for or by the user. Information once assimilated by an individual becomes personal knowledge. Personal knowledge once incorporated in books, files, software, serves as potential information for others.

1.3.3 Information resources include: data in textual, numerical, image or sound forms, recorded on conventional and non-conventional media; collections, human expertise, information industry etc.

1.3.4 Information services include provision of information and data through systems and networks of different types in the private and public sectors (data banks), data bases; library systems; library services; documentation centres and services; information analysis, consolidation and repackaging centres and services; archives;statistical services etc.

1.3.5 Information systems are composed of sets of information units in computerized or non computerized forms which interact with each other in some consistent pattern.

1.3.6 Information infrastructure consists of information resources, services and systems, supported or not by information and telecommunications facilities necessary for the processing and delivery of information. The traffic within this infrastructure is information itself.

1.3.7 Policy; Generally a policy is a statement of general principle of intent that helps translate program objectives into accomplishments by providing administrative guidelines and implementation. A simple dictionary definition of the word is 'plan of action, statement of ideals etc. proposed or adopted by government or political party, business etc.....principle for the people to live by" (Hornby, 1989, p. 954)

The UNISIST guide for the formulation of National Policies for Information Systems and Services (Montviloff 1990 p.7), defines the term 'policy' as follows: "A policy is a set of principles and strategies which guide a course of action for the achievement of a given goal. Policies may be developed at the organizational or institutional level (micropolicies), or at the national, regional or international level (macropolicies). Policies are embodied in the so called policy instruments. These can be of the following kinds: legal instruments (constitutions, parliamentary acts, laws, regulations, international treaties etc.); professional instruments (codes of conduct, professional ethics etc) and cultural instruments (customs, beliefs, traditions, social values etc.)"

1.3.7.1 National policy on information: A national policy on information would therefore imply a set of principles built on a framework of given legal instruments to guide and coordinate the collection, organization, recording and dissemination of information within the country.

1.3.7.2 Specific features of a national policy on Information

It has already been pointed out that information is a vital component in the planning and decision making process. A realistic information policy for a country must reflect the role that information will play in bringing about rapid national economic, social and political development.

Generally an information policy for Tanzania should be able to bring about the following benefits:

1) To bridge the gaps in the existing information infrastructure;

2) To institutionalize and coordinate various information services;

3) To create a legislative machinery to provide for and promote a coordinated development of information activities;

4) To mobilize financial and material support from local and national leaders to support information services;

5) To establish appropriate information personnel development programmes;

6) To facilitate access to information by all members of Tanzanian society;

7) To promote wider utilization of information in all sectors of national development through information marketing programmes, user education, user sensitization and popularization of information as a national resource;

8) to ensure that information services and resources are organized and managed to serve better priority areas in national development.

1.3.7.3 Rationale and need for a national information policy

There is common agreement that even where the importance of information services are appreciated by high level policy-makers the need for a coherent and systematic national information policy and plan may not be appreciated; and that in the absence of such information policies and plan incorporated or closely geared to the development plans, relevant information may be utilized but in a haphazard manner and that decision making based on such information tends to be ad hoc because it is not backed by all the relevant information that could have been mustered (Akhtar, 1990, p.18).

This strengthens the case for information policies generally, and it is a widely accepted fact that African countries need to establish such policies to enable them overcome fundamental information problems through adequate inputs of information, infrastructural and other relevant requirements that ensure improved performance. Summing up on this assertion, Kisiedu (Akhtar 1990 p.25) had this to say "The objective of national information policies stated broadly is to set up goals, provide the inputs and support mechanism that would make possible the achievement of optimum satisfaction for the information needs of all sectors of the national economy, and to promote use of information services" (Akhtar, 1990, p.25)

This requires the harnessing and harmonization of all existing national information institutions and functions into an integrated system. The scope of a comprehensive information policy covers the following information institutions and functions: libraries, archives, documentation centres, statistical agencies, as well as those relating to the media including radio and television, telecommunications, publishing, mapping and cartography, land use and geological surveys, remote sensing and meteorology etc., that is, the different aspects of the provision of actual various types of services to meet the needs of different user communities.

Whereas the above would be the most comprehensive approach to a national policy on information system and services, there are some disadvantages associated with it. First of all such a broad approach particularly at the early stage of policy formulation may jeopardize the chances of success since the process might degenerate into a form of "bureaucratic wrangles and infighting" as Kisiedu puts it (Akhtar 1990 p. 25). Also the inclusion of more sectors in the information policy may create difficulties in the way of cooperation agreements due to suspicion among participant institutions of more constraints to their autonomy and individual identity. These factors have been instrumental in my opting for a narrower approach at this initial stage in the creation of the national policy on information. However, although a narrower approach mainly taking care of libraries, documentation centres and archives will be adopted, sector oriented polices will also be mentioned to take care of the strategic sectors of the economy.

1.4 SPECIFIC OBJECTIVES OF THE THESIS

This work aims at discussing the actual actions that need to be undertaken in the formulation of national policies on information in Tanzania. It is not a policy document as such. Rather it suggests ways and means for designing a policy framework and to prepare policy statements. The aim is not to advocate the organization of information services and resources as such because so much has already been written and suggested on this matter.

It should be emphasized that the formulation of a national policy on information is, as for any other sector of development, a national issue which requires first of all national recognition of the importance of having such a policy. It is therefore necessary to motivate the information community and decision makers in Tanzania so that they are committed to it.

The target group for this document is, therefore, the information professionals who should be regarded as the key personnel for sensitizing decision makers into accepting the formulation of the policy. The major purpose here is to much the methodology presented in this work with the actual social, cultural, administrative, political and professional needs pertaining to Tanzania today.

Specifically the project was carried out with the following objectives :

To identify, analyze and assess data on the following:

a) The social, economic, political and cultural scenario and development planning trends and orientations in Tanzania;

b) The perceived role and market value of information in development;

CHAPTER 2
METHODOLOGY

2.1 DATA COLLECTION

2.1.0 Data may be collected in different ways e.g. survey through observation, questionnaire or interviews; by examination of records, literature survey, and available statistics. The data collection techniques and the rules for utilizing the data must produce if they are to be useful, information that besides being relevant to the reseach problem is valid, reliable and precise (Wilkinson & Bhandarkar, 1977 p.127)

In the case of this work a combination of the above methods was adopted in order to facilitate fast collection of data in the limited time available for research.

First, a survey was conducted in Tanzania by means of interviews and questionnaires to collect data on the various aspects outlined in 1.3 (a - h) above.

As Tanzania is a vast country and the means of transport especially roads and railways are not the best, it was not practicable in the limited time available to reach each and every information unit scattered all over the country. Mailed questionnaires was the major method used to contact the information units which could not be reached easily. (A sample of the questionnaire used is shown in annex 1.)

One factor which facilitated fast collection of data was the contact with the Tanzania National Documentation Centre (TANDOC) situated at the National Central Library in Dar es salaam. One of the functions of TANDOC is to maintain an inventory of the libraries in Tanzania which has been published as the Directory of Libraries in Tanzania (1985), to be updated after every five years. At the time of collection of data for this work, TANDOC was also in the process of updating the Directory and I was involved in this exercise.

Most of the necessary data on libraries in Tanzania up to 1990 was therefore readily available. For other information institutions not covered in the Directory the methodology used was either on-site visits or mailed questionnaires for the institutions which could not be visited.

Almost all the documentation centres are situated in Dar es salaam, the capital, and they are few in number, therefore all of them could be reached.

Most of the mass media institutions were also visited and discussions were held with the Directors/Heads of these institutions, both on a formal and on an informal basis.

It was not easy to contact some political personalities and national authorities for an interview to establish the value accorded to information in planning and decision making. There were a number of unsuccessful appointments for interview with some political leaders. This was mainly due to the never-ending commitments of these persons on various other national issues.

Nevertheless a good number of prominent decision makers in the Government and parastatal organizations e.g in the Presidential Planning Commission, the Treasury and the Party, were interviewed and the discussions with them were very informative, (The names of all the persons interviewed and their positions appear in annex 3).

The interview method was selected together with the other methods because of the following envisaged advantages:

a) It takes less time for both the interviewer and the interviewee (In this case the national experts from various institutions)

b) It allows a deeper and more precise investigation on the opinions or policy issues involved.

c) It leads to comparable data.

The interview with administrative and political leaders in particular was intended to elicit facts and their perception on:

- Information as a vital resource for planning and decision making;
- the existing policies relating to information;
- major policy issues and policy concepts;
- strategies for adopting a national policy on information;
- establishing procedures for formulating and enforcing the policy;

(The major questions used in the interview appear in annex 2)

One other method used for collecting data for this work was through literature survey and review. As regards the general background of Tanzania including the geographical, political, social, economic and cultural, very useful and up to date documents were obtained from the Tanzania Bureau of Statistics. It was also possible to get up to-date statistics on various planning aspects of the country. An overview of the planning trends and orientations of Tanzania obtained mainly using the publications available with the Bureau and the Presidential Planning Commission library.

Several documents were also consulted to assess the information systems and services pertaining to Tanzania today. Among the most useful books and papers on this subject are written by the two prominent Librarians in the Tanzania Public Library Services - Mr. E. E. Kaungamno, the Director of Library Services since 1971; and Mr. C. S. Ilomo who has been

with Tanzania Library Services since its inauguration in 1963, having held various senior positions in the service (Kaungamno & Ilomo 1979 p.1)

The literature on the existing information related policies was obtained mainly from the local research section of the Central Library and other major libraries e.g the University Library. However, some important documents located in some Government offices were not readily available, these being of restricted circulation.

One of the major sources of information used especially for framing the policy statements and stating strategies for implementation is the UNISIST/UNESCO document; National Information Policies, A Handbook on Formulation, Approval, Implementation and Operation of a National Policy on Information by Victor Montviloff (1990).

As stated in the introductory chapter, a comprehensive information policy would cover a very wide spectrum. Such a comprehensive coverage is beyond the scope of this work because of the limited time available for this research (2 months).

Therefore, the information policy proposed in this work essentially covers libraries, documentation centres and archives. Other information institutions such as mass media institutions are also mentioned because they enhance dissemination of information. A policy to cover all institutions involved in information services per se would call for a longer and more thorough survey. In any case, the policy proposed here should be able to lay the ground work for future comprehensive policies for information systems and services in Tanzania. It is quite flexible and can accomodate expansion and modifications to keep pace with the changing needs of society and the rapid developments in the information field.

CHAPTER 3

BACKGROUND INFORMATION

In order to understand the country's background and therefore be able to suggest a rational information policy, several factors need to be analyzed. These include: geographical and physical environment, population and population density, climate, general economy etc. The UNISIST/UNESCO Guide (Montviloff, 1990, p.105) clearly shows that it is important to study these indicators carefully because they all affect information activities in one way or another. The document outlines most of these indicators and how they affect the generation of information, user needs and patterns, productivity and receptivity with regard to information and information activities. Some of the indicators are mentioned below:

"The environmental indicators are related to physical, economic, social, political and cultural aspects of the country. Arranged from general to specific they include:

Physical Environment

Provides a measure of the geoclimatic conditions, ease of internal and international communication which makes information activities easier or more difficult.

General Economics

Provides a measure of the overall economic resources of a country and therefore support and incentives for information activities. It will also indicate the occupations, industries etc. in which the people may be engaged. In turn, this would indicate the type of information required, and the sectoral information systems to be established.

Administrative Controls

Provides a measure of the institutional, operational and regulatory procedures at the national level which can facilitate or impede the information activities..." (Montviloff, 1990)

All the above mentioned factors plus other detailed facts related to these general indicators, justify a detailed analysis of the background information about Tanzania.

3.1 GEOGRAPHY

The United Republic of Tanzania consists of the area formerly known as Tanganyika and the islands of Zanzibar and Pemba. Tanzania mainland is located in the Eastern Coast of Africa between longitude 29 degrees East and 41 degrees East; Latitude 1 degree South and 12 degrees South.

Tanzania is bordered by Kenya and Uganda in the north; Zaire, Rwanda and Burundi in the west; Zambia Malawi and Mozambique in the south and by the Indian Ocean in the east. Tanzania mainland has a total area of 881,289 sq. km of land and the islands cover an area of 2,450 sq km of land thus making a total area of 883,739 sq km of land. The lakes and rivers (water) cover an area of 61,495 sq km. As such Tanzania has a total area of 945,234 sq. km. (Tanzania in figures 1990 p.2-3). Tanzania is the largest of the East African countries.

3.1.1 Physical features

Tanzania is characterized by mountain ranges, the rift valley, gorges and rivers. The massive and spectacular snow capped Mt Kilimanjaro, the highest peak in Africa rising to 5,700 ft above sea level, is situated in the northern part of Tanzania. Below this peak are the slopes of fertile volcanic soil suitable for cultivating a number of food and cash crops.

Along the cost lies a plain which varies in width from 16 km. to 64 km. Behind it the country rises gradually to the Central plateau which for the most part maintains an altitude of about 1200 meters. Isolated minor mountains exist in various parts of the country but the dominant feature is that of flat plains.

Another spectacular topographical feature is the rift valley. Starting from the south it branches north of lake Nyanza forming the eastern and western arms. The eastern branch is not clearly discernible until it reaches central Tanzania. From there it continues to lakes Manyara and Natron which lie at the bottom of the rift. The western branch and probably the most important is clearly discernible and is responsible for the formation of lakes Tanganyika, Kivu, Edward and Albert. Apart from the lakes associated with the great rift valley a portion of lake Victoria which is 115 metres above sea level lies in the north western part of Tanzania.

3.1.2 Climate

The climate and vegetation of the country vary from place to place. The major determinant factor is the altitude and distance from the sea. The coastal strip is normally warm and hot at times with an average temperature of 78°F. The central plateau climatically varies greatly in parts although it is generally characterized by low humidity and scarce rainfall. On the other hand the slopes of Mount Kilimanjaro and southern highlands sometimes experience frost nights.

Generally the northern and southern highlands get enough rainfall throughout the year and also areas around the lakes. The coastal areas receive rainfall between December and May but there are some periods of drought. The driest part of the country is the central plateau characterized by prolonged dry season.

3.2 PEOPLE

Tanzania consists of three major racial groups namely Africans, forming 98% of the total population; Asians and Europeans. The African population is composed of 126 ethnic groups with different tribal languages and cultures. However despite the diverse cultural traditions, national unity has been facilitated through the use of the national language (Kiswahili) spoken throughout the country.

3.2.1 Population

Tanzania's population has increased steadily after the turn of the century . At around 1919, the African population in the then Tanganyika (Now Tanzania mainland) was a little over 4 million and the non-African population was 16,500 of whom 14,000 were Arabs and Indians. By 1948 the African population and the Arabs had doubled while that of Indian and European had quintupled. The 1957 census showed an increase of only about 15% of the African population while other races had increased by almost 100%. The increase in the non- African population was partly due to liberal immigration policy of that time (East Africa Royal Commission, 1955,p.451).

At independence i.e 1961 Tanzania had a population of about 9 million. A census carried out in 1967 showed that the population had increased to 12.3 million. In 1975 a national demographic survey put the population at 14.9. The annual growth rate was by then 3%. By 1988 the population census report, which is believed to be much more accurate than the previous ones gave the total population of Tanzania as 23.2 million with an annual growth rate of 2.8% (Tanzania 1988 population census Report p.1). At this annual growth rate the population of Tanzania is estimated to to about 25 million at present.

3.3 HISTORY

In the second half of the 19th century nation states of Europe had developed an interest in Africa. The interests were a mixture of acquiring trade concessions, sovereign states, spreading religion and some adventurous expeditions.
Germany and Britain were among the nations interested in acquiring some colonial states in East Africa. This period was therefore characterized by exploration of East African countries mainly done by missionaries and explorers including Rebman, Krapf, Livingstone etc.. The pioneer work by the missionaries and explorers resulted in the scramble for Africa by the European nations during the second half of the 19th century.

In 1885, Karl Peters, a German, formed the German East Africa Company and started operating in East Africa. The indigenous people of Tanzania put up much resistance to this foreign intervention and led to the famous resistance known as "maji maji" rebellion staged by the hehe people of Southern Tanzania and led by their chief Mkwawa. Although the resistance was curbed by the Germans the rebellion presented a symbol of the Tanzanian nationalism that had existed for a long time past.

Before the effects of colonial policies of the Germans could be widely felt, the First World War broke in 1914. As such all attention was diverted from developing the newly acquired colony to the war front. Germany lost to the British in the war and had inevitably to renounce her African colonies including German East Africa (Deustch Ostafrika) which included Tanzania. Although the Germans had no chance of staying for too long in Tanzania (then Tanganyika) their legacy is still evident in terms of buildings, and some railway lines they built during their short-lived rule in the country.

From 1922 - 1945 Britain ruled Tanzania as a Mandate Territory under the League of Nations. In 1946, Tanzania became a Trust Territory under the United Nations which replaced the League of Nations.

In 1954 the first political party, the Tanganyika African National Union (TANU) was formed for the purpose of attaining national independence from the British rule. The party succeeded in popularizing the movement for independence under the leadership of the first President of Tanganyika Dr. Julius K. Nyerere (now retired). On 9th December 1961 the British handed over political power to the citizens by granting political independence. In 1962 Tanganyika became a Republic and in 1964 it merged with Zanzibar to form the United Republic of Tanzania.

3.4 POLITICAL AND ADMINISTRATIVE STRUCTURE

Tanzania is currently ruled by a single political party known as "Chama cha Mapinduzi" (C.C.M). The country is headed by an elected President who is also the Chairman of the ruling party. The Prime Minister acts as the Vice President as well. The President and the Vice President hold office for a period of five years after which they are eligible for re-election. The President cannot hold office for more than 10 years i.e two consecutive terms of five years.

Tanzania is divided into 20 regions and 75 districts. These are both administrative and political divisions. Each Region is administered by a Regional Commissioner who also acts as the Party Chairman in his/her region. Similarly, each District is administered by a District Commissioner and is represented in parliament by elected members of parliament. The term of office for the members of parliament is also 5 years but they are eligible for re-election as long as they qualify to stand for election.

The official language and the lingua-franca of the country is Kiswahili. English is also widely spoken and maintained for international communication, business and diplomatic relations.

3.4.1 The Party

In the 1975 Act to amend the interim constitution of Tanzania (1965), the party supremacy was stipulated. According to the amendment, "all political activity in Tanzania shall be conducted under the auspices of the party and the functions of all organs of the United Republic shall be performed under the auspices of the party" (Interim Constitution of Tanzania, amendment 1975 p.2)

National organs of the Party (C.C.M)

The three main Party organs at the centre are:

- The National Conference
- The National Executive Committee (NEC)
- The Central Committee

The National Conference serves as a sounding board for Government policy and meets once every two years. Its powers are largely confirmatory. The Central Committee resembles the cabinet and is concerned with the day to day administration of the affairs of the party. It is responsible to the National Executive and meets once a month. Of the three main national party organs, the National Executive Committee is the most important. It is the chief executive organ of the party and is directly answerable to the National Conference. The Party in Tanzania is supreme and the Government is a tool, in that the major general policies made by the Party have to be translated by the Government in detail into programs and then implemented.

This state of affairs may soon change because in its session on January 20, 1992, the Party National Executive Committee (NEC) decided with one voice to propose to the coming National Party Conference due in February 1992, that Tanzania should go multiparty. As a result, during its session on 17th February 1992 the Party National Conference unanimously agreed that the constitution of Tanzania should be changed to allow multi-partism in the political system of the country (Tanzania Daily News February 18, 1992 p.1).

3.4.2 Central Administration and Policy making machinery

Any major policy proposal arising from a Minister's initiative or on the suggestions of his staff is normally represented in the form of a memorandum in order to maintain a full backing of the Government as a whole. The drafting of a cabinet memorandum is the responsibility of the Principal Secretary and his staff in a Governnment Ministry. The Minister has to approve the cabinet memorandum before it is forwarded to the cabinet and he/she has to make sure that he/she knows all the points made in it so as to be able to defend it before the Cabinet. The Cabinet is chaired by the President.

The functions of the Cabinet Secretariat include:

1) Accepting memoranda from Ministries and examining their readiness and suitability for placing on the agenda of the cabinet meeting.

2) Preparing agenda after its approval by the President and transmitting it to Ministers in good time at which they are to be considered.

3) Recording decisions of the cabinet in the form of minutes and clearing the minutes with the President.

4) Transmitting to the Ministers and Ministries decisions taken at the cabinet meeting so that action may be taken on them.

5) Follow up to ensure that action is taken on all decisions.

The Cabinet also makes use of the cabinet committees some of which are as follows:
In 1960 the Development Committee was constituted as a committee of the Cabinet (by then known as Council of Ministers) to enable the latter to take broad decisions on the Government spending policy and how to review development expenditure. The Development Committee was reconstituted in June 1961 as Committee of the Cabinet. Each Ministry was required to clear with the Treasury the draft of any memorandum which it intends to submit to the Development Committee. This committee was replaced in 1962 by an inter-Ministerial Economic Development Commission which was presided over by the Prime Minister and later on by the President. The Commission was supreme in defining and implementing economic and social policy. In 1964 the Development Commission was superseded by a new Cabinet Committee, called the Economic Steering Committee whose responsibility was to reconcile the economic and social policies of the Government with its political objectives. The Steering Committee was replaced by the Economic Committee of the Cabinet after the Ministerial reorganization in 1965. There is also another Cabinet Committee - a Legislative Committee created in 1962 to relieve the Cabinet of the necessity of dealing with the technicalities of legislation.

Other industries include textiles, ceramics, wood, leather and food processing. Tanzania also encourages the establishment of small scale industries especially at village level. Their development is supported by the Small Industries Development Organization (SIDO).

Another source of foreign exchange earnings is the tourist industry. One of the major tourist attraction is the wildlife reserves. Tanzania is among the African countries with large wildlife reserves. The bigger and more famous game reserves are situated in the northern part of the country. At the moment Tanzania has 5 major national parks, 14 game reserves and 35 controlled areas which are inhabited by wildlife. Needless to say that Mount Kilimanjaro is also a favourite spot for tourists. Tanzania therefore earns a significant amount of foreign exchange from tourism.

In general, Tanzania's overall economic, social and cultural development is characterized by the following priority areas:

- Agriculture and livestock
- Minerals
- Industry
- Trade and Tourism
- Building and construction
- Telecommunication and transport
- Energy
- Water
- Education
- Health and social welfare
- Information, culture and sport
- Rural development
- Science and technology

The G.D.P and per capita income at current prices are T.Sh.351.3* million and T.Sh. 15,753 respectively.

* 1 US $ = T.Sh.230 (Tanzania in figures, 1990)

The economic system of Tanzania did not change immediately after independence in 1961. Thus the private sector and particularly foreign investment which dominated the country's economy continued for sometime after independence. However in 1967 the famous "Arusha Declaration" was launched, the major thrust of which was to place all the means of production under the Government and to adopt the policy of socialism and self-reliance. Although this policy has not been renounced, during the past five years there have been some significant changes aimed at improvement of the economy and the quality of life. At present the economy can be described as a free market economy characterized by private investment and liberalization of trade. Foreign investors have been assured of favourable economic climate free of nationalizations.

With the analysis of the economy it is also necessary to look at the planning trends in Tanzania.

3.6 OVERALL PLANNING, A HISTORICAL PERSPECTIVE

After independence, Tanzania Government had to establish its own planning machinery as adoption to the colonial plans was totally unacceptable.

In 1964 the first post-independence five-year plan was launched to cover the period of 1964-1969. It was a well documented plan with all the factors of forward projections of well balanced public and private capital expenditure, and also quite comprehensive covering all sectors of the economy. The first five-year plan was also closely guided by the then ruling political party - the Tanganyika National African Union (TANU) providing the plan a favourable political climate.

It is important to note that information services, particularly the library services featured in this plan. With the expected financial aid from Britain, the Tanzania Library Services Board had planned to build 6 regional libraries.

However, some political differences which occured between Tanzania and the British Government during this period stopped all British aid to the country. Nevertheless, 3 libraries were built with aid from Denmark and the establishment of the remaining libraries were carried forward to the next plan.

Generally, the first five-year plan had the following shortcomings:

- heavy reliance on foreign aid for implementation of the plan. It had been assumed that 80% of the capital development expenditure would be obtained from external sources, but this massive aid did not materialize.

- shortage of trained manpower. A manpower survey carried in the country in 1964 showed that there were only six professional economists and four statisticians in the whole of Tanzania. Consequently no sooner had the Government started implementation steps than it ran into serious problems. This necessitated the seeking of outside assistance in the form of the Ross Mission from the United Kingdom, which provided technical assistance and advise; The I.L.O expert, Prof. Turner to advise on wage and employment policy; Prof. Rene Dumont to advise on agricultural development and Mr. Schumacher who provided advise on industrial development (Pratt, 1969, p.11-24)

In order to implement the plan, change in the planning machinery of the Government was felt necessary. In each administrative area (10 by then) a development officer was appointed. The Directorate of Planning was placed under the President's Office and it became the Directorate of Development Planning.

In 1966 the Directorate of Development Planning was moved from the President's Office and became the Ministry of Economic Affairs and Development Planning, responsible for planning and economic policy matters. Apart from the Ministry acting as co-ordinator of plan formulation it provided the secretariat for the Economic Committee of the Cabinet, the major policy making body in economic matters, chaired by the President. The Ministry also used to control the annual development budget.

The other economic organ is the Treasury. This deals with fiscal and monetary policies, external debt management policy and general economic policy. The Treasury has control over revenue matters, recurrent budget and negotiation of external financial agreements.

The Arusha Declaration of 1967 caused a profound impact in the development planning in Tanzania. The Declaration had the following major objectives:

1) Public control of the economy and major means of production to include, financial institutions, large industrial and commercial concerns, agriculture and real estate.

2) Development through self reliance - involving a high degree of domestic mobilization and development geared to utilization of local resources.

3) Rural development - involving the recognition that Tanzania society is predominantly rural.

4) Social equality- emphasizing the need to check the growing economic inequality (based on wide income differentials and increasing private accumulation of capital and to narrow the gap between rural and urban living standards) - implemented through vigorous and salary policies.

5) Rural socialism - the need to create a socialist society through the creation of collective productive activities through "ujamaa" (co-operative production).

Apart from the nationalization of the major means of production in agricultural, industrial, commercial and financial sectors, the Arusha Declaration was also followed by mobilization of people into villages so as to facilitate the provision of essential services such as schools, hospitals, water, better houses, shops, roads and even libraries. The major aim was to consolidate these villages into viable, social, economic and educational units.

Ever since the Arusha Declaration, the overall development in Tanzania has been characterized by several 5-year Economic Development plans. In all the five 5-year development plans there have been some features of library development particularly under the TLSB. Even in the current Union Development Plan (1987/88 - 1991/92) the plan to build libraries in the regions which do not have libraries as yet exists. Also the plan to build a National Library in the new capital of Dodoma has been incorporated in the plan.

However, most of these plans have suffered setbacks caused by various factors including natural factors such as draught but also the declining world market prices of Tanzania's export products as against the escalating prices of the imports e.g Petroleum and Petroleum products and industrial machinery. It has to be noted here that among the reasons for the failure of some of these plans was lack of adequate information and data. The Ujamaa village movement for example failed because proper research was not done prior to the implementation of the move.

Due to some unfavourable economic conditions evident for some years in Tanzania it has become necessary to accept some strategic economic recovery programs offered by the World Bank despite some disadvantages associated with such donations.

The planning machinery has also taken a different shape over the past few years. In 1985 the planning functions were taken away from the Ministry of Economic Affairs and merged with the Treasury to form the Ministry of Finance and Planning. Also in 1988 a Presidential Commission for Planning was established to oversee overall economic and sectoral planning in the country.

Several concluding observations in relation to the general indicators mentioned at the beginning of this chapter are that:

- Tanzania's physical environment allow for relatively easier information activities: Internally there are a good number of communication lines (roads and railways) and since communications and transport are among the priority areas in the current economic development plan, these are likely to improve further. There are also several ports along the coastal areas of Tanzania, something which can facilitate communication both internally and externally.

- Overall economic resources of the country are limited so there is a need to sensitize planners and decision makers about the role of information in overall development of the country so that information is allocated a fair share of the limited resources.

- Planning in Tanzania is decentralized but coodinated by the Planning Commission so it should be easy to plan for a national information system following the same lines.

- In Tanzania the political and administrative structure has been fairly stable and this is favourable for information activities.

- Although there are more than 100 ethnic tribal groups the existence of Kiswahili language as a common language facilitates easy communication of information.

- The sectoral priorities i.e agriculture, industry etc. outlined in this chapter are likely to generate specific information needs.

- Tanzania Government has shown firm support for development of information services, particularly library services e.g by including library development programmes in its national development plans. However, still there is a need for a total approach to development of information systems and services.

- Information is not regarded as a sector in the overall development planning of Tanzania, thus the justification for this attempt to propose, among other things, that information should be treated as a sector and included in the overall development plan of the country.

CHAPTER 4
DEVELOPMENTAL INDICATORS

4.0 EDUCATION SYSTEM.

> " It is assumed that more education and more educated people mean a greater capability to generate and use information as well as more intensive information activities in this area." (Montviloff 1990 p. 146).

4.1 PRIMARY EDUCATION

The policy of Tanzania Government on education in general is to provide basic (primary) education to all its citizens. The objective of the Government was that all children who reach school-going age (the minimum being 7 years), should find a place in a primary school by the year 1978. In 1975 a Government directive was issued to implement this objective by instituting the Universal Primary Education programme (UPE).

On launching UPE program it was clear that although a large percentage of the children might get places in primary schools it was only a very small fraction of the primary school leavers who would be able to get places in secondary schools. So a strategy was adopted to prepare these youths for life in villages in rural areas where they would live for the greater part of their adulthood. Relevant skills are imparted at the primary school level in a variety of ways . First of all there are usually some productive activities, such as, farming and gardening in most of the primary schools in Tanzania. Some of the skills taught in the classrooms include crafts, carpentry, masonry, blacksmithy, domestic science etc.

4.2 SECONDARY EDUCATION

4.2.0 It has not been easy for a primary school leaver to get a place in a secondary school. In 1971, for example, for each place in secondary schools there were 6 primary school leavers competing for it. By 1981 the number had increased to 13, and thereafter the situation grew worse due to implementation of UPE. By 1987 for the same one place there were over 30 pupils competing. At secondary school level the emphasis is on manpower needs of the nation.

Due to some colonial legacy most of the courses in secondary schools have been purely academic in their orientation. However, efforts are being made to correct this. First deliberate moves have been made to emphasize manual work in and outside the classroom. Attitudes towards manual work are monitored and this has helped in getting pupils to take it seriously. Schools have been encouraged and required to engage in productive projects. Depending on the location some have engaged in farming, poultry keeping, fishing, brick making, weaving, construction etc. (Mpogolo, 1985, p.3)

4.2.1 Enrolment

The overall enrolment in secondary schools trebled between the years 1970 and 1978. It increased from 10,393 to 32,772 in 1978 In 1970 the private schools contributed 29% of the total enrolment while by 1988 it had increased to 55% of the total enrolment (Tanzania Educational Statistics 1988, p.8)

4.3 UNIVERSITY EDUCATION

The university or tertiary education in Tanzania is characterized by heavy emphasis on professional and vocational studies. There are two universities in the country i.e the

On graduation from these vocational schools the youngsters should have acquired some employable skills, a broadened outlook, and be able to turn themselves into useful members of society. These youngsters are the ones who run small scale industries and crafts to make a living. Some also become petty traders and even hawkers.

4.5 LITERACY PROGRAMMES AND ADULT EDUCATION

4.5.0 Literacy situation

At independence in 1961, the illiteracy rate in Tanzania was 75%. A Ministry of Community Development and National Culture was formed and charged with the responsibility of mobilizing people for social and economic progress. One of their activities was to organize literacy classes and initiate self help projects for women in villages.

By 1965 there were 7257 literacy classes with a total enrolment of 541,562 adults of whom 206,214 were men and 335,348 women. In addition, there were other follow-up classes of english and arithmetic and 2914 women groups learning apart from reading and writing also cooking, sewing, embroidery, child care ,with a total enrolment of 112,739 (Mpogolo, 1985 p.4). The major aim of the Ministry of Development and Culture which took care of adult education was to eradicate illiteracy in Tanzania completely. However, there was no policy for adult education at national level so the activities were uncoordinated. Also, there was lack of clear financial commitment on the part of the government on this matter. As a result by mid-1969 only 600,000 adults had passed through adult classes in Tanzania.

- To create literacy environment in the rural areas through a network of newspapers, rural libraries, folk development colleges, correspondence education, radio programs, cinema and mass campaigns on specific bottlenecks in the rural areas;

- To provide alternative education for the advancement of primary and secondary school drop outs and adult population;

- To enable adults to broaden their knowledge of the national language and English as their second language;

- To provide political education to the adults;

- To improve knowledge and skills of the adults in the fields of agriculture, handcrafts, home economics, health and water supply;

- to give adults some understanding of the national economy and mathematical skills for their daily activities;

- to increase the knowledge of citizens of Tanzania regarding African history and cultural activities;

-To develop and encourage cooperative schemes in various skills among the adults;

- To help adults develop leadership skills and attitudes;

- To achieve a wider understanding of the world and increase the ability to participate in international activities.

When the first drafts are ready subject coordinators of all post literacy books under the chairmanship of the chief coordinator meet in order to review all books. Emphasis is laid on subject presentation, vocabulary control, illustrations and recommendations for improvement of the manuscript is given when necessary.

A final review of the manuscript is done by all adult education coordinators at various levels before the manuscripts are sent for publication.

4.5.2.2 Design and Coordination

This section is entrusted with the following functions:

a) Planning and coordinating the adult education activities in the country;

b) Preparation of the budget and estimates for running national adult education programmes;

c) Employment and transfer of adult education staff;

d) Evaluation of the national adult education programmes; and

e) Supplying adult education equipment and materials .

4.5.2.3 Workers education

This section is responsible for :

a) Workers education in offices, factories etc. in collaboration with the Department of Workers Education in the Ministry of Labour and Social Welfare;

b) Secondary education for workers and correspondence courses as well;

c) Curricula development for workers education; and

d) The organization of certificate and diploma courses in adult education and compiling statistics of workers in the country.

4.5.2.4 Folk Development Colleges

This section deals with:

a) Planning and coordinating all folk development colleges in the country;

b) staffing the folk development colleges;

c) Budgeting for recurrent and development expenditure for all folk development colleges; and

d) Research and evaluation of folk development colleges.

4.5.2.5 Adult education printing press

The functions of the press are:

- To print literacy and post literacy books, zonal newspapers, visual aids and posters.
- Store and distribute learning and teaching materials to the regions.

4.5.2.6 Adult Education Committees

Tanzania's education has given considerable weightage to adult education. There are Adult Education Committees at various levels created with the purpose of mobilizing popular participation of the party and government leadership and secure greater involvement of the people in the planning and

coordination of adult education activities. The National Adult Education Committee is a sub-committee of the National Advisory Committee on National Education. Members of this committee are drawn from the National Assembly, the workers organizations, women organizations, parents organizations, youth organizations and the Tanzania Institute of Adult Education. The major function of this committee is to advise the Minister for Education on policy matters pertaining to adult education.

At regional and district levels similar committees have been formed with their membership drawn from people with affiliation to the National Committee.

The major functions of the regional and district adult education committees are to draw plans for adult education, enrol and encourage attendance of adults, recruit teachers, make provision for teaching and reading materials. These committees are headed by Regional and District Commissioners who are the top Government administrators in their respective positions. The Regional and District Education Officers serve as secretaries to these committees.

4.6 TECHNIQUES IN POST LITERACY PROGRAMMES

4.6.1 Rural Newspapers

Together with the massive campaigns for the retention of literacy in Tanzania various techniques are used for post literacy programmes. One among such techniques which has not only contributed to the retention of literacy but also to keep the rural community informed of important development issues is through the rural newspaper.

The objectives of the rural newspapers are generally the following:

a) to ensure continuing education for the rural population;

b) To keep the rural population informed of the local, regional and national events;

c) To provide readers with practical information on improving on their health, economic and social conditions;

d) To encourage the habit of reading;

e) To initiate the establishment of decentralized local press and help the rural population to express themselves in press;

f) To ensure participation of the readers in the process of economic and social development;

g) To provide an instrument of dialogue between the administration and the rural development;

h) To contribute to the development of national language, culture and tradition.

The rural newspapers programme in Tanzania started as an experiment in 1968 when the UNDP/UNESCO work-oriented Adult Literacy Project was launched in the lake zone. The project started in 4 districts namely Busega, in Mwanza district, Nansumo in Musoma district, Negezi in Shinyanga District and Ihangiro in Bukoba district. Mimeographed bulletins bearing the names of these divisions e.g Habari za Busega (Busega News); Habari za Nansimo (Nansimo News) etc. were produced and distributed to the respective divisions in 5 thousand copies every month.

This experiment proved to be very successful and Tanzania Government decided to strengthen these activities further. UNESCO agreed to fund a project for development of rural newspapers.

In 1974 a joint programme with NORAD (Norwegian Development Aid Agency) donated funds for a period of 3 years to assist the Government to launch a zonal rural newspaper for the four lake regions which were under World Experimental Functional Literacy Programme. A newspaper called "Elimu haina Mwisho" (Education has no end) was launched in 1974 and 25,000 copies were produced and distributed monthly.

The Ministry of Education has ever since made efforts to see that rural newspapers are established throughout the country. Also in its 16th bi-annual conference (1981) the Party National Conference gave a directive that rural newspapers should be established throughout the country. As a result most of the regions have already established such newspapers through their regional writers workshops.

There are already seven zonal rural newspapers i.e Elimu Haina Mwisho (Education has no end) for the lake zone, Jiendeleze (continue learning) for the eastern zone, Tujielimishe (let us educate ourselves) for the northern zone., Tujifunze (Let us learn) for the southern zone, Nuru yetu (our light) for the southern highlands zone, Elimu yetu (our education) for the central zone and Elimu ni bahari (education is sea) for the western zone.

4.6.1.2 Target Population

The target population for the rural newspapers is basically the rural community. This population is normally not reached by the national newspapers e.g Uhuru and Daily News due to transportation problems. Therefore the rural newspapers are expected to reach every household in more than 8,000 villages in Tanzania. However due to shortage of printing facilities and the fact that Tanzania's rural population consists of 90% of the total population it is not possible to provide all the rural people with these newspapers. Priority is, therefore, given to new literates graduating from the functional literacy classes.

It should be noted that the readership of these rural newspapers was very high because they are written in kiswahili which is widely spoken in the rural areas.

The sale price of these newspapers is fairly low for every peasant to be able to afford. The contents of the newspapers are as follows:

- national and at times international news which are of general interest to the readers;
- news from regions covered by the newspaper on development activities;
- news of general interest and letters to the editor;
- "Do it yourself" whereby articles on how to...e.g keep poultry, make composite manure etc. are discussed.

4.7 OTHER POST LITERACY PROGRAMMES

In addition to the zonal rural newspapers there are rural libraries, radio education, and cinema vans. All these have objectives similar to those of the rural newspapers and have the same target group.

The various educational activities outlined above for the rural population reinforce each other but need coordination and cooperation (Mpogolo 1985, p.23). Rural newspapers write about the rural libraries and reproduce radio topics as well as publishing radio time tables. Rural libraries preserve and lend such written materials for home reading and use them in discussion groups. Radio education reproduces articles from newspapers and/ or prepare programs about the others.

4.8 LIBRARIES AND LITERACY PROGRAMMES

The Tanzania Library Services Board runs a rural library service in order to meet the reading needs of the rural people, particularly the new literates who are graduates of the literacy programmes. During the first five-year development plan (1964 - 1969), the service to the rural population was mainly through book boxes and postal library service. However, after 1969, the services were offered by bookmobile. This was a very effective method because it reached the people directly in the isolated villages and houses.

The bookmobile service proved to be very successful in Tanzania. A large number of readers were attracted by not only the colouful paintings of the vehicles, but also the material provided by the service. It was found that after attaining literacy rural people developed interest in reading. The libraries, in turn, encouraged readership by providing relevant reading materials in swahili language widely spoken in the country.

Generally it can be claimed that the literacy programmes in Tanzania had a significant impact on the rural library service and vice versa. The number of users increased due to the attainment of literacy. On the other hand the literacy programmes benefitted from rural library services because by geting reading materials the new literates would not relapse into illiteracy.

4.9 SCIENCE AND TECHNOLOGY

4.9.0 The vital role of science and technology in the socio-economic development has been highly acknowledged in Tanzania. In 1990 therefore a new Ministry for Science and Technology and Higher Education was created to promote and develop science and technology in Tanzania.

- The National Construction Company (NCC) and the Centre for Material Testing Laboratory to evaluate the building materials and conduct training for building contractors;

- In the health sector research is encouraged on parasitical diseases;

- To develop research on better nutrition and ways of preserving food;

- To develop research on local medicinal herbs;

- To do research on the effects of environmental pollution on health; and

- To use, as far as possible, locally available products to manufacture various drugs which are otherwise imported from abroad.

4.9.2 Tanzania Award for Scientific and Technological Achievement

In order to encourage scientific and technological innovations, strategies for rewarding and helping innovators have been prepared. In 1980 Tanzania established a special fund to be used for awarding individuals and institutions in recognition of their achievements in the application of science and technology to economic development. The award is known as Tanzania Award for Scientific and Technological Achievements (TASTA). The Awards Committee is co-ordinated by the National Commission for Science and Technology.

The major aim here is to promote scientific and technological innovations by Tanzanians using national resources and products. Apart from the encouragement of the use of appropriate technology Tanzania Government has laid strategies for the adoption of the modern high technology so as to keep pace with the developing world.

Preparations are also being made to strengthen the special fund for the development of science and technology. Money for this special fund will be drawn from contributions from parastatals, and private institutions, and a special budget allocation will be made by the Government for this fund. The major aim of this fund is to sponsor training of scientists, engineers, technologists, rewarding innovators and to fund some research projects (Economic Survey 1990 p.94-95).

4.9.3 The National Science and Technology Policy for Tanzania

Since 1985 Tanzania has formulated a national science and Technology Policy and its main objectives are as follows:

a) To protect and enhance Tanzania's political and economic independence;

b) To build up national scientific and technological capabilities aimed at achieving the national goal of socialism and self reliance;

c) To enhance the application of science and technology to socio- economic development in order to improve the standard of living of the populace and meet the basic needs of the masses;

d) To stimulate the generation of scientific and technological knowledge which is to be applied for the development of the nations natural resources as fully as possible and at

reasonable cost in conformity with the country's policies;

e) to inculcate a science and technology tradition and consciousness in the Tanzanian society;

f) To strengthen national science and technology development institutions, including strengthening of high level manpower training, motivation and retention and establishment of new institutions where necessary for research and training of scientific and technological manpower;

g) to provide attractive terms and conditions of service including adequate research facilities and conducive research environment, for good Tanzanian scientists and technologists in order to encourage and induce them to give their best service to the country and at the same time minimize brain drain;

h) To establish an appropriate legal framework - laws, regulations and rules for rationalizing, assessing, monitoring and controlling the choice and importation (or transfer) of technology such that only relevant technology are promoted and/or imported. In this context relevance will be judged on the basis of socio-economic needs of Tanzania and parity with the country's policy of socialism and self reliance;

i) To institutionalize a mechanism for identifying encouraging and evoking potentialities of special talents, aptitudes in science and technology among Tanzanians especially youths, in order to enable the nation to fully benefit from the establishment of a strong foundation for scientific and technological development in the future;

j) To achieve a critical mass in scientific and technological manpower by the year 2000, at least in the key sectors of the Tanzanian economy, particularly in agriculture, industry so as

to enable the country to adopt, adapt and absorb indigenous and foreign technologies;

k) to promote exploitation and rational utilization of natural resources, including energy resources, and the development of industries and transportation systems without undue disturbance of the ecological and social balance;

l) To promote the advancement of women in science and technology, making women innovative and conscious of science and technological uses in their everyday life;

m) Promote specific simple and applicable science and technological innovations that reduce the drudgery of the life of women hence releasing them to more productive and economic ventures;

n) Acquire a national capacity for autonomous decision making technological matters. (National Science and Technological Policy for Tanzania, 1985, p.4-5)

Among the specific science and technology policy statements is a statement on Scientific Information Systems. The objective stated here is " the provision of up to date and efficient scientific information system including libraries, documentation centres, computer systems etc. shall be recognized as vital tools and components in strengthening the nations scientific and technological capacity".

4.9.4 Role of Information in Science and Technology

The role of information in the promotion of science and technology cannot be over-emphasized. Just like in other sectors there is a need to develop information systems supporting the development of science and technology. The

effective utilization of technological advances for socio-economic development entails effective communication between research and development centres and potential users of the technical knowledge and know-how such as enterprises. In this context, support services, such as, information and decision support systems, computer and software, management and consultancy etc. are necessary.

Information and information exchange have also been identified as key elements in international cooperation and technology transfer, something which can lead to world-wide diffusion of scientific and technological know-how. On the other hand it is assumed that the higher the support to scientific and technological research, the more intense will be the generation and use of information.

4.10 OTHER NATIONAL PRIORITIES

National priorities

> "Provides a measure of the relative short term goals through specific inter and intra-sectoral programmes of action which could indicate areas in which specialized type of information is needed (Montviloff, 1990, p.140)".

Priority areas which have already been pointed out are in agriculture, industry, natural resources exploitation and also in the cultural and sectoral services. These are all likely to generate specific patterns of information needs.

The following significant facts should be deduced from this chapter:

a) Due to Tanzanian Government efforts to eradicate illiteracy and to provide basic education to all school age children through the Universal Primary Education campaign:

- A greater percentage of the adult population in Tanzania is literate;

- A greater percentage of school age children find places in primary schools therefore it is most likely that the population of Tanzania is generally literate;

b) Due to the primary school curricula which lays emphasis on practical skills as well as theory, the primary school leavers who do not get places in secondary schools are likely to engage in various crafts e.g small scale industries and petty trades and so there is a need to create special information systems to support these activities;

c) Secondary school leavers are likely to get low cadre employment as a means of meeting some manpower needs in various offices of the Government. Also those who do not get places in employment are likely to engage in some practical skills for their living;

d) The university graduates makes only a small percentage of the population and female graduates are even fewer;

e) Science and technology is among the priority areas in the development plans of Tanzania and there is already a National policy for science and technology.

The implication of all the above mentioned factors is that Tanzanian society in general is in good position to be able to generate information from its various sections. At the same time there is a pressing need to create special information services to support all the sectoral priority areas for development.

It is also assumed that intensive information activities is possible if a mechanism for mobilizing these activities is formulated. Indeed this is what an information policy should be able to achieve.

CHAPTER 5

INFORMATION USERS IN TANZANIA

5.0 USERS

" Provides a measure of the relative number, categories and types of information users and indicates their information needs...

User groups

It is assumed that the larger the number and diversity of user groups the more important and complex the information needs". (Montviloff, 1990, p.144)

In Tanzania information users range from the most sophisticated specialist professional, researcher, politician, administrator, academician, educator to the citizen at large generalist user, all of whom may be involved in one way or another in development related activities in particular sectors e.g agriculture, industry, finance, business etc. Even the illiterate and semi-literate farmers, villagers, and people at the grass roots play significant roles in the development of the country.

A survey carried out in Tanzania on users of information (Kaungamno & Ilomo, 1979, p.114) indicated the following categories of users:

1) The new literates: - These are the graduates of adult literacy classes - arising out of the campaign for eradication of illiteracy which has already been mentioned earlier.

2) The adult students group: - This is the group covering all types of people with varying educational background who wish to improve their general education or study for specific examinations through correspondence courses as well as organized classes run by the Institute of Adult Education;

3) The middle and highly educated group who may include the middle level workers, school and college teachers, academicians including university lecturers, professors etc.;

4) university students;

5) Primary and secondary school students etc.

In order to establish the type of library users and their information needs, Tanzania Library Service which is the largest public library system in Tanzania, conducts periodic user surveys aimed at finding out the following facts:

- Who are the library users
- How much do they use the library and for what purpose
- What do they read
- What influences their choice of books/documents

The readers are also analyzed according to age, sex, race, occupation, language and education (Kaungamno & Ilomo, 1979, p.207).

A general outcome was that a greater percentage of library users were students who formed 47% of the total membership and that libraries were mostly used during or near examination period.

As for adults at least 30% of library users went to the library for the purpose of reading newspapers. But it also showed that manuals such as 'How to do', books e.g how to keep poultry, were very popular.

Whereas user needs vary and the major sectors of the economy are likely to give rise to specific information needs and use patterns, it is also necessary that users are closely studied to determine their specific needs. Information does not only enhance the development of various sectors of the economy but it also enriches individuals, culturally and socially by providing reading materials for entertainment and social development.

The Tanzania National Documentation Centre (TANDOC) publishes case studies in information work in its serial publication Information Requests Handled by TANDOC. These are useful in identifying needs of certain group of users, the type of information resources and networking necessary to respond to these needs. An example of such a case study is presented here.

5.1 CASE STUDIES IN THE USE OF INFORMATION IN SOLVING PROBLEMS

The following is a typical information request from a serious user looking for information to solve a particular problem. This is one among a series of case studies handled in the National Documentation Centre:

Case Study: How to build a methane lamp

Problem:

A letter of 16th August 1983 from a test Engineer in Arusha stated:

> I recently learned about your abstracting and indexing bulletin. We here at (name of institution supplied) often find that we need to do research to solve some of the technical problems that confront us in the villages. I am enclosing a hand-out outlining some of the activities in (District

named). We need information on how to build a methane lamp and want to know if there is any way in which we can avail ourselves of your services.

Solution:

The search through the Documentation collection and the Central Library catalogue, The British Technology Index and Chemical Abstracts did not show much. Contacts were made with the University Library, Tanzania Industrial Studies and Consulting Organization (TISCO), The American Centre library and Tanzania National Scientific Research Council (UTAFITI) but nothing worthwhile showed up.

TANDOC informed the client on 1st September, 1983;

> Following your request for information on how to build a methane lamp we contacted several institutions within the country to help us search for relevant documents. Unfortunately, none had any specific information on methane gas in relation to lamps. (We found information on other practical aspects of methane gas but there was no way of telling whether this information would be useful to you because your query was very briefly worded). We have now contacted several information service organizations abroad, and provided that this

information is available somewhere we should be getting it very soon...

There are two journals currently in our stock which may be of interest to you because they usually include sections devoted to appropriate technology. We are enclosing portions of the two journals Mazingira and The Courier. If you think that the information found in these journals is useful, we can arrange to send you photocopies of contents pages regularly, so that you can send in requests for any articles you want.

Since you are concerned with research you may also want to consider establishing links with the Tanzania National Scientific Research Council (UTAFITI)

The following organizations were contacted on 1st September 1983 for literature on methane lamps:

1) United Nations Industrial Development Organization (UNIDO) - Vienna
2) National Centre for Scientific and Technological Information , Israel
3) Library of Congress office - Nairobi
4) Tropical Products Institute, London (TPI),

5) Bureau of Development Support, Agency for International Development Department of State, Washington D.C.

UNIDO

UNIDO had circulated the request to several organizations all over the world.

On 26th September UNIDO responded:

....Please find attached comments received from the Japan Consulting Institute, we think that this information will be very difficult to find but we are waiting for the answers of other correspondents.

The said comments from Japan Consulting Institute partly read

....we hasten to inform you with regret that we were unable to obtain any documents or data necessary on how to build a methane lamp.

Tropical Products Institute

Response from TPI was dated 27th September, 1983 recommending TANDOC to contact

Bengal Scientific & Technical Works Ltd,
20 Aswan Dutt Road,
Culcutta 29.
India.

This firm manufactures bio-gas appliances and will supply you with up-to-date information and prices. Some of their equipment is detailed in: BIO-GAS plant: Designs and Specifications, a booklet by RAM BUX SINGH, published by the Gobar Gas Research Station, Ajitnal Etawah U.P. India.

Bengal Scientific & Technical Works Ltd.

TANDOC wrote Bengal Scientific and Technical Works on 6th October 1983 and got the following response:

...We are enclosing herein our catalogues for cowdung gas lamp and appliances being manufactured and sold by us. The catalogue was titled Leo Products with a section on lamps.

Bureau for Development support, Aid

This Bureau referred TANDOC's letter to :

- Volunteers in Technical Assistance (VITA)
- The Bio-Energy Council - Washington

Library of Congress - Nairobi replied giving

a) Two references:

1) Operations and Maintenance of Gobar gas plants by John Finally available from: Development and Consulting Services, United Mission to Nepal, Butwal, Nepal.

2) Compost, fertilisers and bio-gas products from human and farms wastes in the peoples Republic of China, 1978. available from IDRC, Nairobi.

b) Advise that TANDOC get in touch with one Dr. Leo Pyle, Department of Chemical Engineering, Imperial College, London, who is Chairman of the Methane Panel of the Intermediate Technology Group.

On 7th October, 1983 Tandoc sent requests to Nepal, IDRC Nairobi and to Dr. Pyle (see (a) (1), (2) & (b) supra)

The Development and Consulting Services Butwal, Nepal. responded shortly afterwards:

We do not make lamps ourselves although we are doing research and development on this product. Posted separately is a list of supplies of lamps for bio-gas (about 60% methane and 40% carbon dioxide).

The following organizations should be able to give you the design of the bio-gas lamps as offered by companies D & E on the attached list:.....We are also sending separately one copy of Operations and Maintenance of Gobar gas plants. We do not know of any other books explaining how to build a methane lamp. The cost of this book plus postage is 1.10 Us $, Bill no 1387 enclosed with the book.

National Research Council of Canada

Among the institutions contacted by UNIDO on behalf of TANDOC was the National Research Council of Canada. Their letter stated:

We enclose herewith a photocopy of chapter II : Gas illumination from the Gas Engineers Handbook. This does not give very much in the way of Design of lamps. However you will note in the list of references on the last page that no 3 deals with performance and design. We do not have this Research Bulletin in our library but we have requested a copy

and when we receive it we shall send it to you if it appears that it will be useful to your client.

UNIDO

Meanwhile an encouraging note from UNIDO came:

We are continuing to collect relevant material and shall send it to you in due course.

Then on 10th December,1988 IDRC sent a document: Bio-gas Technology in the third world: a multidisciplinary review.

The Small Industry Research Institute, Delhi

Another resource contacted by UNIDO - The Small Industry Research Institute in Delhi India sought clarification on the use of the lamp....."I can assist you in collecting and supplying necessary available information/documents, of course on their consideration depending on the efforts and costs involved".

The letter went on to seek clarification on use of the lamp.

VITA

VITA sent in a document entitled Efficient gas appliances copied from Bio- gas Newsletter and the comment;

"....it seems that building a methane lamp is fairly complicated and difficult to locally manufacture...Methane

burners, on the other hand are fairly simple to construct and I think I have included enough information that you should be able to design a satisfactory unit"

Indeed, the client in Arusha had received sufficient information and after getting all the documents forwarded to him he was able to write:

...you are certainly to be commended for the committed and unselfish work you have done in trying to help us solve a problem. (Mwinyimvua, 1983, p.7-9)

There are many more information requests of this type which come to the National Documentation Centre and more or less the same procedure is used to solve them depending on the requests themselves. Some require extensive literature searches and the use of national as well as international information resources.

In order to be able to solve such varying information needs of users, it is necessary that information systems, services and resources are well coordinated. It is also necessary that the national information systems participate actively in international information programmes, so as to obtain information from other countries. Such premises can be found in a national policy on information systems and services.

CHAPTER 6

EXISTING INFORMATION SYSTEMS AND SERVICES (Information Infrastructure)

Indicators on Information resources and services:

> Provides a measure of the relative number, size and capacity of the information infrastructures in the country and indicates the intensity of the economic activities devoted to information (Montviloff, 1990 p.145).

In this chapter, a detailed analysis of data on information infrastructure derived from the literature survey, questionnaire and interview is given.

6.1 INFORMATION GENERATION

In Tanzania information is generated from various sources. The major institutions which generate information include the publishing houses, research institutions and even social and cultural settings can be a source of orally transmitted information.

6.1.1 Publishing industry

The publishing industry in Tanzania is a mixture of Government owned publishing houses, private publishers and others which are owned by institutions, such as, the University, religious institutions etc. The leading publishing houses are, the Tanzania Publishing House, The Government Publisher, The Dar es salaam University Press, the Catholic Mission Publishers.

6.1.1.1 Printers

a) Printpak and National Printing Company

The Printpak and National Printing Company (NPC) are subsidiaries of Tanzania Karatasi Associated Industries - which is a parastatal holding company of printing industries. Each of these employ about 400 people.

These firms have WEB - OFFSET ROTARY Press capable of handling bulk production of literature including books, booklets, magazines, periodicals and newspapers. They also produce exercise books and all types of stationery. Besides, NPC has a specialized unit for production of security prints and business documentation systems. Printpak has recently installed a modern typesetting equipment and has an ink factory which produces about 100 tons a year.

b) Adult Education Press & Rural Press Centre

The Adult Education Press was established in 1970 to print literature and other printed matter of the national literacy campaign and various adult education programs. In 1979 in its efforts to reach the people adult education press envisaged an expansion and extension programs of printing facilities. By 1983 8 rural press centres had been established as zonal branches.

Today the rural printing centres have printing and publishing facilities extended to various parts of the country. The production line include 15 modern and efficiently operated presses and other equipment worth over T.sh.100 million. These capacities are supported by well established distribution network of books and newspapers.

The annual production capacity ranges between 4 - 5 million books of an average of 64 pages, 5 million copies of rural newspapers and miscellaneous printed items amounting to over 3 million impressions. The Adult rural presses are run by about 120 staff who are trained in this work.

c) The National Correspondence Institute Press employs 25 people and is housed in a purpose-built spacious floor within the Institution building. It has been in operation for about 14 years and the major outputs from it are the learning and training materials for distance education. It is well equipped with 3 presses, guillotines, repro-camera plate maker and ancillary equipment.

d) Dar es salaam University Press

This is located on the University campus and is also well equipped with 6 presses and modern bindery equipment. The press has an average production of 5 to 6 million impressions per year.

e) The Government Press

This is actually the oldest printing plant in the country. It employs about 300 people. This press has a large installation of letter press and offset printing presses, good bindery equipment, a modern linefilm via phototypesetter and many graphic art ancillary implements. The press is particularly good for book work involving big volumes and case binding.

f) Other Printing Firms

There are other reasonably big printing companies in Tanzania. The firms are concentrated in Dar es salaam and others in some upcountry towns.

The big privately owned companies in Dar es salaam include Tanzam International Marketing Ltd and Dar es salaam Printers. These firms have varied specialization in commercial printing and book-work. Tanzam International Marketing and Dar es salaam Printers have special exercise book printing machines (Bielomatic).

Tanzania Litho Ltd based in Arusha have colour printers and are specialists in book work. They have 5 presses, line and monotype typesetting equipment, electronic guillotines, perfect binder and combine gather - stitcher as well as other various printing outfits.

6.1.1.2 Problems associated with publishing and printing

Due to the rising costs of paper and printing, publishing industry in Tanzania is stagnating. Manuscripts submitted for publishing take a long time to be published due to the unforeseeable market situation of the books to be published.

6.1.1.3 Book Production

Since independence, Tanzania Government has been trying to devise ways of improving the book situation in the country. Among the strategies which were suggested was to establish a National Book Development Council.

After several unsuccessful attempts to establish such a council a Tanzania delegation to UNESCO General Conference in Belgrade in 1980 held discussion with UNESCO staff on the possibility of UNESCO's technical assistance in this matter. UNESCO responded positively and promised to send a consultant on a one month mission to advise on the formation of the National Book Development Council and a National Book Development Policy.

In 1981, E.E. Kaungamno, Director of Tanzania Library Services presented to the Minister for Information and Culture, a memorandum on a model constitution and organization structure of a typical National Book Development Council as proposed by UNESCO. The Ministry had a keen interest in this and took up the matter seriously by drafting legislation and the possible organizational structure and prepared a memorandum for the need for a National Book Development Council. However up to the late 80's this Council had not yet been established. This delay may be due to the unfavourable economic conditions which had been plaguing Tanzania in the 1980's. Due to this situation had been very cautious in its approach to the creation of new institutions.

A National Book Development Council would be a good premise for encouragement of production of books, authorship and hence generation of information. A good example of an operating National book Council is that of Malaysia which has the following objectives:

- To bring together the different groups concerned in the production and distribution of reading materials with the view to ensuring efficiency and effective cooperation in the provision and use of the reading materials;

- To encourage the formation of professional associations relating to reading materials where these do not exist, and the strengthening of such associations where they already exist;

-To encourage the maintenance of high professional and technical standards in book production and distribution in the country;

-To create by suitable means public interest in books and indiscriminate reading habits among all sections of the community;

-To organize and provide training facilities in all matters relating to reading materials;

- To foster and coordinate research and investigations into problems in the field of reading materials;

- To do whatever is possible towards the attainment of the above or any other objectives that will promote the activities of the Council (Kaungamno & Ilomo 1990 p. 164).

Apart from the attempts to encourage book production through the establishment of the National Book Council the Tanzania Library Services Board (TLSB) Act 1975 also gave TLSB responsibility to "promote library research and book production.....advise the Government and Parastatal Organizations on book production and book policy". In order to fulfil these functions TLSB has since 1977 produced over 40 book titles and two wall maps - one for Africa and another for Tanzania. The books were mainly published for primary schools and adults while the wall maps were for use in secondary schools.

6.1.2 Research and Development

> It is assumed that the higher the support to research the more intense will be the generation and use of information (Montviloff 1990, p.138)

6.1.2.1 Research Institutions

Tanzania has already established some of the basic institutional infrastructure for research and development in a number of sectors of the production system and social welfare. Through various Acts of Parliament, several National Institutes of Research and/or Research Organizations have been formed. Most of these fall under the industrial, agriculture, natural resources and health sectors of the economy (National

Science and Technology Policy for Tanzania 1985 p.35).

However, the majority of these institutions suffer from inadequate financial resources, inadequate training of the technical personnel, inadequate research facilities and weak linkages between agents of research and development on the one hand and potential users of the research findings on the other. There is also very little cooperation between research institutions. These factors have tended to frustrate the scientific and technological aspects of scientific research and development.

To redress this imbalance concerted efforts are required in order to:

i) Strengthen scientific research activities in the country by providing adequate financial base for mobilizing research funds;

ii) Increase the number and quality of scientific personnel through appropriate training programmes and the provision of adequate incentives;

iii) Ensure that scientific resources/research facilities are carefully planned and adequately provided. These resources/research facilities (include libraries, equipment and technical services including maintenance and repair workshops and special support single purpose/multipurpose equipment or instruments). The provision of these resources

and facilities will enhance the development of indigenous capability in science and technology;

iv) Improve the linkage between research and the application of research results by strengthening both the mechanisms for disseminating research information and the extension services related to the promotion and popularization of science and technology. This will facilitate prompt application of scientific research results and subsequently bring about improved productivity in both agriculture and industry.

The importance of generating domestic technology and making the best choice and use of imported technology has been well acknowledged by the establishment of engineering, design and consulting organizations.

> "These organizations bring together the capability to design, install and commission industrial plants, to manage industria enterprises and to market the products effectively. Consulting and engineering organizations are therefore crucial in the unpackaging and adaptation of foreign technologies and providing for domestic skill formation in evaluating and preparation of feasibility studies and ultimate project implementation. Capabilities in design engineering are essential for the translation of know how to

commercial production. This is particularly important in areas relating to agricultural production, agro-industrie metallurgical, chemical, machine tools industrial machinery and capital goods" (National Science and Technological Policy for Tanzania 1985 p.37).

Institutions such as Tanzania Industrial Studies and Consulting Institution (TISCO), The Tanzania Engineering, Manufacturing & Design Organization (TEMDO), the Tanzania Industrial Research and Development Organization (TIRDO), the Centre for Agricultural Mechanization and Rural Technology (CARMATEC), the Institute for Production Innovation(IPI) of the University of Dar es salaam are research and development establishments in the key sectors of Tanzanian economy.

6.1.2.2 Research in Universities

The role of Universities in research cannot be overemphasized. Apart from teaching, the Universities offer opportunities for conducting both applied and basic research. As such the lecturers and students of the Universities apart from other academic activities conduct research in various fields either scientific, cultural or social.

Research is also conducted in other institutions such as Government laboratories and industrial enterprises etc. As such it is necessary for the research institutions to maintain close contacts with Universities in order to take advantage of the many University scientists who have accumulated experience in imparting scientific knowledge and technical know how.

One of the major problems facing most research institutes is that there is very little chance for researchers to publish their research findings in foreign journals. An alternative would be to publish in national journals or the research institutes' own journals. But the reseach institutes do not have in-house journals to publish reseach findings. Therefore research findings are reported most oftens in the annual reports of the respective institutions. The annual reporting system of research in progress is institutionalized but usually there is no cooperation and coordination between research institutes. However,with the establishment of the Tanzania Commission for Science and Technology an up-to-date register of on-going research is kept and clearance of any research to be carried out in the country is provided.

6.2 INFORMATION INSTITUTIONS

> Provides a measure of the relative number, size and capacity of the information infrastructures in the country and indicates the intensity of the economic activities devoted to information (Montviloff, 1990,p.141).

6.2.1 Libraries, Documentation Centres and Archives

Libraries, documentation centres and archives are the traditional information institutions which offer various information services to users.

6.2.1.1 Public Libraries

In Tanzania the move to establish libraries and public library system dates back to pre-independence period. However the most notable contribution towards this move was by a British Librarian, S.W Hockey, who carried out a feasibility study and produced a report in 1960 on the development of library services in East Africa. This report triggered off a new era of public library development in the East African countries.

The Hockey report was a welcome document in Tanzania (then Tanganyika) and it coincided with national independence in 1961. The National Government was quite committed to the development of libraries in the country and to begin with, a legislation on the deposit of books was enacted in 1962. The Deposit of Books Act was followed by the enactment of Tanganyika Library Services Board Act of 1963 which gave the Board the mandate to develop all types of libraries in the country.

Initially priority was given to the establishment of public libraries. This was a deliberate move and the aim was to create a public libraries infrastructure into which other types of libraries would be integrated to form a national library service.

After a close scrutiny of the TLSB act of 1963 it was found that it was inadequate in the view of the social, political, cultural, and economic developments which had taken place after independence. As a result, in 1975 the act was replaced by the Tanzania Library Services Board Act 1975 which is still in force.

The new Act gave the Board wider responsibilities of advisory, executive, operational and coordinatory powers in the fields of libraries, documentation, publishing and training. In essence the TLSB was given powers to coordinate

all types of libraries and create an integrated National Library System. However as we shall see later on, the implementation of these responsibilities was not easy.

Tanzania Library Services Board

At present Tanzania Library Services Board (TLSB) provides services at village, district, regional and national levels. It also provides some specialized and advisory services in other libraries, documentation centres and the book industry.

Objectives of TLSB

The services provided by Tanzania Library Services Board are aimed at fulfilling the following objectives:

1) To provide Tanzanians access to information in all spheres of life and all sectors of the national economy;

2) To meet the reading needs of all people in Tanzania by providing books, periodicals, newspapers and magazines;

3) To control, preserve and stimulate growth of the nations literary output;

4) To put at the disposal of the people of Tanzania, the World's accumulated knowledge for purposes of education, research, socio-economic and cultural development;

5) To develop an integrated library and documentation system in Tanzania which will serve the people better and at a minimum cost;

6) To strengthen and develop the library and information science profession in Tanzania so that it can make effective contribution to the development of society.

Services

Lending Services

Lending services for home reading are offered to the library users at the National Central Library, Regional libraries, District and Village libraries . Members who live far away from the existing service points can use the postal lending service. Bulk loans are offered to institutions, such as, Government institutions, community centres, prisons, industries etc. Small libraries in institutions may also make use of this service.

Reference and reading facilities

All major libraries are stocked with reference information sources to answer quick reference questions. TLSB libraries also provide conducive reading space on their premises.

Service to children

Besides borrowing books for home reading and using reference services, children participate in story telling, film shows, book talks, quizzes and imaginative writing. Standard textbooks are also available for children in these libraries.

Documentation and Information Services

TLSB houses the National Documentation Centre which disseminates information to specialist users in the key sectors of the economy e.g Agriculture, Industry, education, intermediate and appropriate technology etc. This involves question and answer service, referral service, preparation of citations, abstracts, indexes, directories, union lists and subject bibliographies to meet user needs.

Facilities for cultural activities

The central library and its regional branches have facilities for cultural activities such as exhibitions, displays, films, cultural shows etc.

Bibliographic Services

TLSB houses various bibliographic tools for identification and verification of bibliographic elements. Such tools are helpful in book selection, ordering and location of documents etc.

On the basis of the TLSB Act 1975 clause 5 section 2 the Central Library collects, records and provides bibliographic information on the national literary output through the Tanzania National Bibliography which is circulated in the country and abroad.

Promotion of publishing and book industry

The Board encourages Tanzanians to write books through its publishing programme which started in 1977. The Board's staff also keep track of authors in all disciplines and participate in writers workshops organized by the Ministry of Education. The publishing industry is also promoted through the allocation of ISBN & ISSN (International Standard Book Number and International Standard Serial Number respectively) to

local publishers and institutions which produce publications. Such programmes facilitate easy identification of documents as well as enabling the nation to gauge the volume of the literary output and publishing trends in the country.

Advisory Services

Such services include conducting studies for libraries and information centres of individual organizations preparing status and implementation reports and advising Ministries and parastatal organizations on all library matters.

Manpower development and training

The following courses are offered at the elementary and technicians levels:

i) Elementary Library training - a 7-week introductory course.

ii) Certificate course in librarianship - an 18-month course

iii) Government Higher Standard library examination - a 40-days course;

iv) Undergraduate diploma in Library, Archives and Documentation Studies - a two-year course.

Refresher courses for practitioners are also a regular feature in the TLSB training programmes. Individualized training and attachment is offered on request. In order to monitor and rationalize information manpower development programme in the country, basic data is kept on all trained personnel. A registry of librarians, documentalists and archivists is also maintained.

Resources

The provision of services and attainment of objectives is made possible through a well selected collection of about 1 million items. There are over 50 professional librarians and 100 trained library assistants who help readers to exploit the Board's collection. Training for additional staff still continues.

The other type of public libraries which are not under TLSB are the rural libraries under the control of the Department of Adult Education in the Ministry of Education.

6.2.1.2 University Libraries

There are two University Libraries in Tanzania: The Sokoine University of Agriculture Library and the University of Dar es salaam library. The University of Dar es salaam has a main campus library and the Faculty of Medicine Library

which is about 10 km away from the main campus. At the main campus there are also some Departmental Libraries e.g the Law, the Institute of Education Library etc. The University of Dar es salaam has a large collection of Periodicals - 2,400 titles ordered from overseas. It is also a legal depository library for United Nations Publications. It also has a large collection of Tanzanian materials published locally and externally, maps and manuscripts.

The Sokoine University of Agriculture, formally a faculty of Agriculture attached to the University of Dar es salaam has also a large library . The type of materials held in the two University Libraries are mainly for supporting teaching and research programs for both staff and the university students. However these also sometime provide information to foreign scholars and researchers and foreign consultants working in Tanzania. Generally thse academic libraries, just like in other countries support a limited clientele i.e teachers researchers, and students.

6.2.1.3 Libraries of other Educational Institutions

These include those of colleges, training institutes and school libraries. There are training colleges and institutes in the fields of education, commerce, industry, coperatives, wildlife management, finance and administration, agriculture

and the Party. These also support research and teaching programs of their parent institutions. Best among these are the Libraries in the Institute of Finance Management (IFM), Institute of Development Management (IDM), Dar es salaam Technical College, etc.

Most schools have some disorganized collections due the lack of qualified staff to run these libraries. However, efforts are being made within the Ministry of Education to organize school libraries especially with the appointment of a library coordinator.

6.2.1.4 Special Libraries

These include libraries within Ministries, Government Departments and Parastatal Organizations in all sectors of the economy. The most prominent of these are the Ministry of Agriculture Libraries which has more than 30 libraries in its Research Institutions and stations ranging from very small disorganized collections to well organized libraries depending on the availability of qualified staff.

6.2.2 **Archives**

The National Archives of Tanzania was established by an act of Parliament No 33 of 1965 which was amended in 1979.

Among its objectives are to salvage public records,

organize and preserve them. It is also involved in records management which is the general administration and management in the creation, maintenance, use and disposal of records. The National Archives offers advisory services to Government and parastatal organizations on proper opening and closing of records and the operation of registries. The National Archives operates 5 regional centres in rented accommodation in the towns of Arusha, Mwanza, Mbeya, Singida and Bukoba and its headquarters in Dar es salaam.

6.2.3 Documentation Centres

Documentation Centres are relatively new establishments in the country. They are not as widespread as the libraries. Tanzania Library Service houses the National Documentation Centre (TANDOC). Other well known documentation centres include: The Tanzania Research Information Service (TANRIS) which is within the National Commission for Science and Technology; Tanzania Industrial Studies and Consulting Organization (TISCO) and the SADCC industrial documentation centre established in the Ministry of Trade and Industries.

6.2.4 Mass Media

6.2.4.1 Radio and Television

Radio

Radio broadcasts stand the best chance of reaching most of the people in the country. Currently there are two National radio services in Tanzania i.e Radio Tanzania - Dar es salaam and Sauti ya Tanzania (Voice of Tanzania), Zanzibar. These give very comprehensive services in terms of their programme output and geographical coverage of their transmissions using almost a dozen short waves and medium wave transmitters.

The radio broadcasts consist of various educational programmes. There are special literacy support programmes which began in 1974, whose major objectives is to create public awareness and interest in literacy activities. The major programmes which have been developed so far support in-service teacher training, and a general motivational programme which consists of cultural songs.

Apart from the literacy supporting programmes, the radio broadcasts are also a source of local news and international news on various aspects of development - social, cultural, economic and political.

It is estimated that the country has over 2 million radio sets (most of them portable) i.e approximately 1 radio set for every 11 Tanzanians.

Television

Just like video cassettes, television broadcasts can optimize human and material resources. Unlike video cassettes television has added strengths of immediacy and ability to update and supplement instructional material at a great speed and frequency. However in Tanzania a proposal to activate a National Television network on the mainland is yet to be implemented.

6.2.4.2 Newspapers

There are two major national newspapers in Tanzania: The Daily News which is owned by the Government, and Uhuru which is owned by the Party. Daily News is an English Newspaper and Uhuru is in Swahili.

Within the past five years or so many other newspapers, privately owned have mushroomed in the country. Among the most prominent ones are the Business Times, Family Mirror, Michapo, etc. The Organization of Tanzanian Workers publishes a bi-weekly newspaper Mfanyakazi (Worker) produced in swahili.

All these newspapers are printed in Dar es salaam and are circulated in the major regional towns of the country. The newspapers are essentially urban oriented although some villages get belated copies. In the villages there are rural

newspapers which are produced as part of literacy and post literacy campaigns controlled by the Department of Adult Education in the Ministry of Education.

6.3 INFORMATION PERSONNEL- (Human Resources)

> It is assumed that more qualified and larger number of skilled labour force, the better the services. These may include not only personnel working in the institutions, but also training opportunities available and the status of information workers (Montviloff, 1990, p.143).

6.3.1 The situation of information manpower in Tanzania

The situation is far from adequate. A general view is that of many information institutions being run by fewer and, in most cases, unqualified personnel. The general conclusion is that information manpower in Tanzania is inadequate both in quality and in number.

6.3.2 Existing Manpower Training Facilities

Most of the training facilities for librarians, documentalists and archivists are under the Tanzania Library Services Board. The training programmes, both long and short have already been outlined above (See 6.2.1.1 (i) - (iv)).

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Apart from the training programmes offered by TLSB which are conducted locally there are other training facilities offered outside Tanzania:

- Certificate courses for archivists are offered at the Kenya Polytechnic in Nairobi and the University of Legon - Ghana. There are no training programmes of this kind in Tanzania at the moment. Therefore in order to offer such training foreign exchange is needed. (Plans are however under way to establish these training programmes in the country).

- Diploma courses are offered at Makerere University in Uganda and Botswana for Librarians. Diploma courses for Archivists are conducted in Ghana and India.

- Courses for graduate and postgraduate studies in library, information science and archives administration are available overseas e.g U.S.A, U.K, Australia, Canada etc.. Also in some African countries e.g Botswana, Zambia, Ethiopia, Nigeria etc. However, the major problem here is that there is a need for foreign exchange to send trainees to these programmes. An alternative is to secure foreign scholarships for this purpose. The disadvantage with this option is that scholarships are not always readily available and are few in number.

6.3.3 Status of Information Personnel

The conditions of service for information personnel in Tanzania is not homogeneous. Terms usually depend on the parent institution to which an information unit belongs. The status of librarians in the universities for instance, is on a parity with the academic staff. In special libraries the terms and conditions of service depend on the importance given to the library/information unit by the parent institution. Similarly, Tanzania Library Services Board has its own scheme which is different from those of others. This situation has lead to high turnovers of information personnel. Many go for highly paying institutions and so some information institutions remain understaffed while others are well catered for.

The general situation of information manpower resources has been described as "being static for along time now, if not dwindling, the little achievement scored so far will soon be eroded. About 25% of the trained librarians have either secured jobs in other countries, joined other professions which are more paying or have passed away" (Ilomo 1988 p.7).

6.4 USE OF INFORMATION TECHNOLOGY IN INFORMATION HANDLING

The use of Information Technology (IT) in information handling is necessary for efficient management of information systems and services. Tanzania, just like any other developing country cannot ignore the new technologies which has caused a tremendous impact in the overall information scene globally.

Before discussing the use and potentialities of the use of IT in information services in Tanzania it is necessary to get an overview of the informatics scene in the country in general.

The history of informatics development in Tanzania can be traced back to 1965 when the first mainframe was installed in the Treasury for the purpose of providing computing services to all Government Departments. The work load of this computer proved to be beyond its capacity therefore a few other installations were asked to handle the extra computing services. The other installations were with the Tanzania Electrical Supply Company (TANESCO), State Trading Corporation (STC) and the National Bank of Commerce (NBC). Unfortunately, the overall performance of these computers was not good due to inadequate training of operators on the one hand, and lack of proper systems analysis at the initial installation stage. This led to a generalized anti-computer sentiments in the country which resulted in the prohibition on the importation

of all electronic data processing equipment except with the permission of the Minister for Finance in 1974. The outcome of this was a long time of stagnation in the informatics development in Tanzania.

However in the 1980's even with the prevalent ban, proliferation of personal computers for business, office and educational purposes has taken place. An inventory carried out on the computer systems in Tanzania revealed that in 1978 there were only about 5 mainframes and seven minicomputers. Micro computers were non existent at the time. By 1984 the record shows that there were about 13 mainframes, 15 minis and 79 micros in the country. By 1986 the number of micros had increased to 470, 53 minis and 16 mainframes.

6.4.1 Computer Vendors

Presently there are 4 computer vendors in Tanzania, marketing mainframes, minis and micros:

1) The International Computers Ltd. (ICL) which markets ICL machines.

2) National Cash Register (NCR), marketing NCR computers.

3) Computer Corporation of Tanzania Ltd (CCTL) marketing Wang and Osborne Computers.

4) Business Machines Ltd (BML) marketing Apple and Olivetti micros.

Three of these manufacturers offer sales and maintenance services locally. Out of all the mainframes existing 81% are serviced locally while only 49% of the minis are serviced locally. As for micros, only 56% is serviced locally.

6.4.2 Training facilities in Information Technology

The International Computers Limited of Tanzania (ICL) run both short and long courses in IT. The following courses are conducted in their training centre in Dar es salaam:

1) Introduction to computers and MS DOS Operating System:

- part-time 4 weeks
- full-time 2 weeks

The course objectives in this case are the following:

- gain basic understanding of computers and its concepts;
- describe the hardware and software component of a typical computer-based system;
- identify different methods available for input, output, processing and data storage;
- operate computers at a basic level.

At the end of this course, it is expected that participants would be able to operate a PC which uses MS DOS operating system.

2) Programming in Basic: This is also for 4 weeks to enable participants to:

- develop and write programmes in Basic;
- run the programmes and achieve the desired outputs;
- apply this knowledge in their own work environment.

3) Word Processing: Word star, MS Word, & Word Perfect

- Part-time 4 weeks
- Full-time 2 weeks

Objectives : To enable partcipants to:

- be efficient in text handling;
- produce an efficient visual report;
- storing the records for the future use;
- managing the files and documents efficiently.

Other courses are in :

- spreadsheets - Lotus 1 - 3;
- D Base III+;
- System analysis and logical design;
- System design and implementation;
- Programme design techniques.

4) Diploma in Computer Science

The centre also conducts a diploma course in computer science with a duration of 52 weeks (full-time)

On graduation from the diploma course the participant is expected to be able to work as a systems analyst, a programmer or a training executive in any reputable computer organization. The graduate may also be able to pursue further studies in information technology.

Whereas these courses are useful, they are generally too expensive and are mostly business-oriented. Softwares popular in information services such as CDS/ISIS are not covered. As such for information services personnel to acquire the needed skills in IT for application, it is necessary to send them outside the country, and this requires foreign exchange, which Tanzania is normally short of.

6.4.3 Computer Acquisition

The general situation in Tanzania is that of increasing number of computer acquisitions mostly of minis and micro range. There are very few mainframes being acquired. Inspite of this, there are no strategies and policies for informatics, no coordination in use and applications of informatics at the national level (Sheya & Koda, 1987 p.104)

Due to the late development of informatics in Tanzania and lack of a clear policy, it is a very small percentage of information systems which use computers in information handling.

The few information systems which have computers have mostly got them through donations and use them for only one function in their systems. The few known libraries which have computers include: The National Central Library , with one Wang PC used for the National Bibliography database, Sokoine University of Agriculture Library, University of Dar es salaam Library, Board of External Trade Information Centre, Ministry of Agriculture Library and some foreign and international mission libraries e.g the British Council, UNICEF, East and Southern African Management Institute (ESAMI) etc. Some libraries have Computers but they are still not used due to lack of expertise in their operations e.g the Ministry of Agriculture Library.

6.5 PARTICIPATION IN REGIONAL AND INTERNATIONAL INFORMATION SYSTEMS

Tanzania is trying hard to participate in Regional and International information systems. Various information units participate in regional and international information systems in one way or another. The Ministry of Agriculture Library, for example, is supposed to be a participating centre for the Agricultural Information Systems (AGRIS); the Commission for Science and Technology, to CARIS, and the Planning Commission Library to PADIS and POPIN. However, due to some bureaucratic procedures and inadequately trained staff the level of

participation is very low. Most of these information units have contacts with some regional and international information organizations only in a superficial way. They usually do not provide inputs to them but rather receive information and publications on request. The Ministry of Agriculture Library, for example, receives AGRINDEX on a regular basis while Tanzania Library Service is also a depository of publications from FAO, WHO, IBE, UNIDO, ILO, ISORID etc. One of the reasons for this inadequate participation is the lack of adequately trained staff and also lack of a clear policy on this issue.

6.6 EXISTING LEGISLATIONS ON INFORMATION SYSTEMS AND SERVICES

Most of the information systems existing in Tanzania today have been established by acts of parliaments. Among the most conspicuous of these is the Tanzania Library Services Board Act 1975.

This act gave TLSB responsibilities, to establish, equip, manage, control and coordinate all types of libraries in the United Republic of Tanzania. The act did not only give the Board the responsibility of controlling & coordinating the libraries but also documentation services, training of librarians, stimulation on public interest in Tanzania literature promotion and development of indigenous literature and other allied functions in relation to libraries and documentation.

The Act gives the Board several functions among which are the following:

- to promote, establish, equip, manage, maintain and develop libraries in the United Republic;

- to set up, establish, equip, manage, maintain and develop documentation centres and to provide documentation services;

- Plan and coordinate library and documentation services in the United Republic of Tanzania;

- Advise the Government and Parastatal Institutions on all matters relating to library and documentation service etc.

However while the Board was given these sweeping powers, other institutions were being created with similar mandates, e.g in 1976 the Act establishing the Tanzania Industrial Studies and Consulting Organization (TISCO) empowered this organization "to coordinate research in industry carried out within the United Republic and establish a system of Documentation in respect to information relating to industrial research or studies furnished to or otherwise acquired by the organization" (section 5(f)).

Also the Act to establish the National Scientific Research Council (1968) had already conferred the powers to promote the documentation and dissemination of information on all types

of research and may for this purpose publish any newspaper, journal or periodical or do any other act or thing designed to promote interest in science and its achievements" (section 5(c))

In another development, an act to establish the Tanzania Industrial Research and Development Organization,1979 empowered this organization "to establish and operate a system of documentation and dissemination of information on any aspect of applied research carried out by or on behalf of the organization" (section 4(f)).

This duplication of the terms of reference in among some of these organizations has led to confusion and duplication of effort in a number of cases.

The TLSB act has been criticized in various circles. It is claimed that the act gave too much responsibilities to one institution without the necessary resources. The assumption that TLSB was given wide powers over other libraries as a basis for a coordinated National Information System (NATIS) "was not acceptable at national level, where expansion of the educational and other sectors led to the establishment of a variety of libraries and archives which TLSB has no control whatsoever" (Mascarenhas, 1989 p.163).

On the other hand the protagonists say that when the National Assembly passed this act it was well aware of the

sweeping powers and its implications monetary, and administrative. The mere passing of the act is therefore a clear demonstration of the Government's faith in the value of a National Information System. The situation as it is, calls for review of most of these policies.

6.6.1 Information related Policies

The policies which are related to information would include, informatics and import regulations on materials and goods that facilitate information services, Legal Deposit act, Copyright act etc.

6.6.1.1 Informatics

In Tanzania there is no policy on informatics. However there are efforts towards formulation of an informatics policy e.g in 1987 a seminar on Contribution of Informatics to Economic Development was held in Arusha . This seminar drew participants from senior Government and Parastatal Organizations (mainly Principal Secretaries, General Managers and Professors of the University).
Among the recommendations of the seminar were as follows:

1) Formation of a task force on informatics to examine the complexities of informatics and recommend policies and strategies relating to the subject.

2) Urgent measure to be taken by University of Dar es salaam and other relevant authorities to ensure proper training at all levels in informatics field.

3) Restrictions on the acquisitions and importation of computers and electronic data processing in the country be reviewed to facilitate access to technology etc.

6.6.1.2 National Library Policy

In May 1983, Tanzania Library Services Board submitted to the Ministry of Education a National Library Policy document for consideration and possible adoption. The major aims of the policy were:

a) To lay down new principles and pointers on the development of library services in Tanzania;

b) To ensure that civil servants, parastatals employees and general public have access to library facilities and make use of them;

c) To ensure that all public institutions build, develop and efficiently manage their own libraries;

d) To ensure that each public institution is given responsibilities to implement in an effort to expedite overall national library development;

e) To promote resource sharing and cooperation between libraries;

f) Generally to enhance economic and social development by ensuring that officers in government, parastatals and general public get and actually use up-to-date information for decision making and performing their daily work (Kaungamno and Ilomo, 1990, p.156).

In 1985 the Ministry of Education appointed a committee to study and deliberate on the National Library Policy document. The committee was composed of representatives from TLSB, Ministry of Education, University of Dar es salaam, Tanzania Library Association, Tanzania National Scientific Research Council, National Archives, and Tanzania Industrial Research & Development Organization. This Committee discussed the document against major library development concepts like policy mission, cooperation and resource sharing, organizational set-up, responsibilities and coordination, library standards, library manpower, book provision and other library materials, professional associations and financing.

In 1986 the Committee concluded that the proposed national library policy was most appropriate and timely and a final report was submitted to the Ministry of Education for further action. Among the Committee's recommendations were as follows:

a) Formulation of Library Advisory Council which would monitor and coordinate library and documentation services;

b) Public library development should continue to be the responsibility of TLSB;

c) Rural library development should continue to be the responsibility of Department of Adult Education in the Ministry of Education and TLSB;

d) The library coordinator's office in the Ministry of Education should be strengthened to include school and college libraries inspection.

Up to the present this policy document has not been adopted. Instead there has been attempts to establish a national policy on information which covers not only libraries but also archives and documentation centres.

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6.6.1.3 Legal Deposit

Under the TLSB Act 1975 TLSB is entitled to receive two copies of every book or other literary work printed or produced in Tanzania provided it is intended for sale, public distribution or exhibition. The depositor is any person who prints or produces or causes to be produced or printed books or other literary works in Tanzania. Under an act to amend certain written laws (Acts Supplement No1) of 18th February 1977, films are excluded from being deposited with TLSB. The National Audiovisual Library with Audio Visual Institute (AVI) is the depository for films. The problem associated with this law is that it is not widely known so these publications have to be chased around from printers and publishers.

6.6.1.4 Import Regulations for Products related to Information

Product	S.tax	I. Duty	Excise	Total
Photocopy machine	20%	-	-	20%
Computers	30%	20%	-	50%
Television receivers	40%	-	35%	75%
Videos	40%	35%	-	75%
Radios	40%	20%	-	60%
Satellite dishes	30%	40%	-	70%
Telex/fax machines	30%	20%	-	50%
Printing paper	-	25%	-	25%
Printing machine	-	20%	-	20%
Books/journals	-	-	-	free
Book binding equipment	-	20%	-	20%
Telecomms equipment	30%	40%	-	70%

Table: 1

Source: Customms Department Dar es salaam 1990.

6.7 SUMMARY OF THE RESULTS OF THE SURVEY

6.7.1 Literature Survey

The following conclusions can be drawn from the literature survey done on the existing information systems in Tanzania:

- There is duplication in terms of references in the legislations of some information units (see 6.6 above);

- Practically there is no coordinating board or agency for information systems and services. Although TLSB was given this mandate, it has not been completely accepted by other information units as the legal coordinating board;

- Information services operate with different levels of success;

- Information manpower is completely inadequate both in quality and in number;

- Information is used to some extent for development and solving problems. However user sensitization has not yet been carried out effectively;

- Use of information technology in information handling is minimum and there is no policy on informatics in general.

6.7.2 The Interview

A total of 32 persons were interviewed. They represented, planners and decision makers in the Government and parastatal organizations, librarians, archivists, documentalists, academicians, mass media people, scientists, engineers etc. The following is what was deduced generally from the interviews:

- The role of information in national development is acknowledged by planners and decision makers. However, information is not yet given high priority in the overall development planning of the country. Rather, higher priority is given to agriculture because this is the major source of foreign exchange and also self sufficiency in food. As one official put it " how can one read with an empty stomach?..feed the people first and then encourage them to seek knowledge" Such people need to be sensitized to be able to realize that it is through information that better methods of farming can be discovered hence higher yields and consequently better quality of life.

- Decision makers use information in their day to day activities. However, most of them use the information found in the Bureau of Statistics. Libraries, archives, and documentation centres are rarely used by senior officials in the government. These are used mainly when they have papers to write and when the library has the needed material;

- Libraries are mainly used by academics and students and the general public the public libraries; archives are also a popular information centre especially for researchers and academics.

6.7.3 The questionnaire

Over 200 questionnaires were distributed to the various information units existing in the country. More than 80% were returned and revealed the following generally:

- Imbalance in the information units sectorally e.g there are 36 information units related to agriculture while there are only 4 related to health (see tables 4 and 5 appended to this chapter)

- The trained librarians are concentrated in the university libraries while some libraries do not have even one professional and others have only a few to run a country-wide service e.g The two university libraries have more than

20 professionals at post-graduate level and above, while Tanzania Library Services Board which runs a country-wide public library service have just about that number;

- Some libraries are very poorly operated e.g in some there is hardly a catalogue to guide users to the collection;

- There is no significant cooperation such as interloan systems, although this was highly advocated during the 1985 and 1988 seminars for resource-sharing and networking;

All the above factors and many others which are mentioned elsewhere in this work call for a clear policy on information systems and services.

Appendix

PROF. STAFF	PL (20)	SPL (85)	AL (6)	CL (41)	SCL (26)	DC (4)	ARC (6)
None	4	66	-	33	20	-	3
1 -5	15	19	3	8	6	3	3
6 -10	-	-	2	-	-	1	-
11-15	1	-	-	-	-	-	-
16-20	-	-	-	-	-	-	-
20 +	-	-	1	-	-	-	-

Table 2: Distribution of professional staff in libraries, archives and documentation centres.

KEY:

PL = Public libraries

SPL = Special libraries

AL = Academic libraries

CL = College libraries

SCL = School libraries

DC = Documentation centres

ARC = Archives

Table 3:

DISTRIBUTION OF INFORMATION INSTITUTIONS: SECTORAL

Sector	Number of info. institutions
Agriculture and livestock	36
Minerals	2
Industry	6
Trade and tourism	3
Building and construction	2
Telecommunications and transport	4
Energy	4
Water	1
Education (Colleges of education & schools)	73
Health	4
Social welfare	5
Culture and sport	-
Science and technology	3.

CHAPTER 7

NETWORKING

7.0 DEFINITION OF NETWORK

A network is any arrangement or any structure that links a group of individuals or organizations, who have agreed to work together and/or share resources. All groups may already share some resources on an informal, unorganized basis to a certain degree. However, efficient sharing of resources requires coordination. Therefore an organized structure or information networking involves sharing resources to meet the information needs of current and potential users of information from the local to the national level, and for all network participants.

7.1 INFORMATION NETWORK

Basic objectives of an information network is to identify and establish better ways of improving the flow of information among members and member institutions

7.2 RELATIONS

In an information network more than two participants are engaged in common patterns of information exchange through communications that are specific, limited, functional and understood by all member participants e.g people in a number of organizations get together, nominate a coordinator from among themselves and agree on a programme of activities and a system operation that every member contributes according to the rules they have made together.

Clearly networks are created because they can bring benefits to all the participants. Like people, institutions working as a group rather than separately, have a better chance to solve common problems more quickly and effectively.

7.3 NETWORK CHARACTERISTICS

Network members may be individual or organizations located in different places but bound by an agreement to work towards common agreed goals within certain defined limits. Members of a network must negotiate in order to have mutually acceptable agreements and policies in order to make the network operate. In a network a central focus is required to organize the network, to develop and implement norms and standards of service, to provide mechanisms of consultations among

partners, to construct the necessary tools for cooperation e.g in a library, a union catalogue etc.

7.4 FACTORS DETERMINING SUCCESS OF NETWORKS

7.4.1 More than anything else, networks are built up centring around shared ideas which can present potentials for development and motivate concerned individuals who may be dispersed geographically, culturally and professionally but are still induced to join together in a collaborative venture.

7.4.2 A shared idea or common vision of what can be accomplished together may give birth to a network, but will not be sufficient to sustain it. A number of organizational practices indicate the need for a focal point, a lead institution or a catalytic hub. In addition, there is a need for very concrete plans to operationalize the idea of working together to achieve a common objective. This would require a high level of human interaction, personal commitment and group activities.

7.4.3 Networks which address interacting development issues that are of urgent concern and where collaborative efforts would yield concrete benefits to partner institutions, tend to produce more durable relationships. It has been observed that the long-lasting networks invariably focus on follow-up

activities after research work is completed. Such follow-up activities consist of action training, action research, policy developments, dissemination efforts and regular exchange of information. At the same time, it has been pointed out that the more vibrant networks must not rest content merely with sharing of operational expenses and innovative measures taken to raise additional revenues.

7.4.4 Ideally, networks should be financially self-reliant. This is an idea that all networks would like to pursue. However in practice, there has been very little evidence suggesting that such a goal is realizable, although a number of case studies on networks, indicate efforts undertaken by network members for sharing of operational expenses and innovative measures taken to raise additional revenues.

7.4.5 Networks for research and training need to focus on evaluation, not only in terms of the substantive output objectives, but also of the process of networking, the quality of interaction and the intensity of collaboration. Since there is very little practical experience in this regard, it would be important for the networks to acquire a capacity for internal review and self-reflection.

7.4.6 One measure of the effectiveness of research and training programmes undertaken by networks is their relevance to a select constituency in each country. This would usually consist of a central core of opinion leaders and decision makers, within the government as well as outside. Such networks cannot operate in isolation; to succeeded they have to establish multidimensional linkages with other institutions, both formal and informal, vertical as well as horizontal (Ramani & Shams, 1989, p.10)

All the above factors are very relevant to information networking and in the following pages, attempts towards the creation of information network on a legislative basis in Tanzania is discussed.

7.5 NATIS CONCEPT IN TANZANIA

The library, documentation and archives professionals in Tanzania have recognized the need of an action initiated for the development of an integrated and coordinated national system of library, documentation, archives and information centres since the early 70's. The National Information System (NATIS) concept was the outcome of an Intergovernmental Conference on the Planning of Information Service Structure organized jointly by UNESCO, the International Federation for Documentation and the International Council on Archives in

Paris in 1974. The Conference made a number of recommendations relating to formulation and implementations of a national information policy, stimulation of user's needs and establishing a legal basis, planning and financing the information system, development of information manpower, application of information technology, universal bibliographic control and assistance to member states in planning and establishing national information systems. In this conference Tanzania was represented by the Chief Librarian of the University Library, the Director of Library Services Board and an Archivist. The Director of TLSB also attended the International meeting of Directors of National Libraries held in Lousanne, 20 - 21 August 1976, where the role of national libraries in NATIS was discussed and a policy statement issued. The attendance at these meetings and many others gave the TLSB Director significant experience and in 1975 at the request of UNESCO, he prepared a "Review of the Development of Library and Documentation Services in Anglo-phone Countries of Africa since the Kampala meeting of 1970". This paper acted as a working document at the UNESCO conference held in Kinshasa - Zaire (Ilomo - Occasional paper no 7, p.54).

7.5.1 TLSB Act 1975 and the NATIS concept

It has been advocated widely that the TLSB Act 1975 compare favourably with the NATIS objectives as enumerated in the 1974 Conference (See 7.5 above). As pointed out elsewhere in this work the functions of the Board are not only related to the promotion of library services but are also related to documentation services, training of librarians, promotion of literacy campaigns, stimulation of public interest in Tanzanian literature and allied functions in relation to libraries, documentation and information services.

Whereas the TLSB Act 1975 conferred the functions which are in conformity with a NATIS agency to TLSB, the implementation of NATIS in Tanzania has been confronted with various problems. Some of the problems include lack of adequate trained manpower, and also the reluctance of other information units e.g the University Library to accept TLSB as the NATIS agency. Since the early 80's therefore, the information professionals in the country have recognized the need to take a different approach in the attempt to create a coordinated national information system in the country.

7.6 INFORMATION NETWORKING ATTEMPTS IN TANZANIA

7.6.1 In 1985, Tanzania Library Services Board, in collaboration with UNESCO organized a Conference on Resource Sharing in the Southern and Central Africa Region in Dar es salaam. The Conference drew together for discussions, senior library and information personnel from Southern and Central Africa. The theme of the Conference was resource-sharing. However, the issue of formulation of information policy was also discussed. This issue of information policy arose again during a Workshop on Training of Library, Documentation and Archives personnel, held in Dar es salaam in 1988. The workshop recommended to the government among other things, the need for a national information policy to facilitate the coordination of libraries, archives and documentation centres. The Workshop further recommended the need to find ways of serving the information users more effectively. With a view to get things moving, the workshop recommended that the government be asked to set up a high powered national adhoc committee with the following terms of reference:

a) To lay down grounds for preparing a National Information Policy with special emphasis on bringing libraries, archives and documentation centres together.

b) To work out strategies for implementing training programmes for undergraduate and postgraduate diplomas;

c) To find mechanism for resource-sharing between various information units in the country;

d) To find ways of serving users of information much more effectively especially those in the rural areas. These recommendations were forwarded to the Minister for Education for necessary action.

7.6.2 In 1989, February, a National Seminar on the Establishment of a National Information and Documentation Network in Tanzania was held in Dar es salaam. Participants were drawn from Tanzanian libraries, archives, documentation centres, mass media and computer experts. Other Tanzanian participants included officials from the Ministry of Education, Finance and Planning, Economic Affairs, The Treasury, Ministry of Labour and Manpower Development, The National Commission for Science and Technology and the Central Bank. External participants came from Kenya, Uganda, Somalia, Zimbabwe, United Kingdom, Jamaica and UNECA - PADIS. The key resource person came from Jamaica's National Council on Libraries, Archives and Documentation Services (NACOLADS). The objectives of the seminar were:

1) To assist in the formulation of a National Information Policy embracing archives, libraries and documentation centres;

2) To help in the setting up and improvement of the National Information System;

3) To make preparation for the establishment of a National Information and Documentation Network in Tanzania;

4) To impress upon administrators and financiers on the importance of information in decision making and planning process;

5) To assist in determining types and kinds of personnel training needs required by information, library and archives professions in Tanzania;

6) To attempt to bring together archives, libraries and documentation centres so as to ensure efficient resource-sharing of information in the country.

The Jamaican experience of NACOLADS was considered as a suitable example, applicable to the Tanzanian situation.

However one conspicuous gap in the proceedings of this seminar was the absence of a paper on information policy. Although a number of papers mentioned about the need for an

information policy, none of them tackled on the exact methodology for the formulation of a national policy. That is why this work is considered a worthwhile effort towards the formulation of a National Policy on Information Systems and Services, because it concentrates on the methodology of formulating such a policy.

CHAPTER 8

EXISTING PROBLEMS AND POLICY ISSUES

8.1 POLICY ISSUES ON THE ROLE OF INFORMATION IN NATIONAL DEVELOPMENT

8.1.1 Problem

The service economies are gradually gaining ground on the national resource and manufacturing economies. In particular, the concept of information services as a national resource indispensable to all national development programmes and activities is slowly emerging.There is increasing evidence of the impact the application of information has on the productivity of the various development sectors. The national authorities give increasing attention to the relation between information resources and services and the economic growth and social development. Indeed in Tanzania there is evidence that the national authorities i.e party and political leaders support the development and coordination of information services in the country. Therefore several policy issues need to be considered and carefully analyzed:

8.1.2 Policy issues in this case call for the necessity for the following actions:

8.1.2.1 To accelerate the emergence of the concept of information as a national development resource on a par with other resources;

8.1.2.2 To accelerate the acceptance of this concept by the national leading administrators within the information profession as well as among the Government decision makers;

8.1.2.3 Define the appropriate role of government in the development and use of national information resources and services. This involves formulation of plans, guidelines, implementation strategies, monitoring and control of activities. These are to be done in line with the national political and social philosophies and government structure

8.2 POLICY ISSUES ON THE DEVELOPMENT OF NATIONAL INFORMATION RESOURCES

8.2.1 Problem

The national development efforts generate a growing volume of indigenous bibliographical and non-bibliographical information and data. The necessity of capturing and recording this into an organized national pool of information is increasingly recognized. Nevertheless, the domestic

information products in terms of coverage, presentation and ease of use, remain inadequate, in quality and timeliness. They are not responding to the expectations of the users.

8.2.2 Policy issues here require the necessity to:

8.2.2.1 Encourage and support the domestic information industry (e.g activities of publishers, database producers, information and information products distributers, information and library services, software producers, data banks etc.) which employs many types of professionals, involves large investments, produces goods and services that have a cost, price and value and in general constitute an important part of the gross national product;

8.2.2.2 Subsidize research and development in the information field e.g by giving financial and material support;

8.2.2.3 Encourage the generation of various types of information: bibliographical, numerical and statistical data, audio-visual etc. This can be implemented by promoting research activities and supporting publishing and printing houses;

8.2.2.4 Organize the recording, publishing and distribution of local scientific and technological research in various areas of development;

8.2.2.5 Support the efforts to improve the quality of domestic information and information carriers such as journals, reports etc..

8.3 POLICY ISSUES ON THE DEVELOPMENT OF NATIONAL INFORMATION SYSTEMS AND SERVICES

8.3.1 Problem

The resources in specialized information and professional knowledge being generated in the country or tapped from abroad should be organized and made available for planning, decision making and problem solving purposes. Information services and systems need to be developed to best serve the economic growth of the country through national research, education and industrial and agricultural development. The optimal application of information technologies in modernizing and improving the traditionally manual services is vital not only for the upgrading of the national services and systems but also in keeping the country from lagging behind the other countries in world service economies.

8.3.2 Policy issues in this case call for the following actions:

8.3.2.1 To encourage the creation, development and improvement of all types of information storing, handling and disseminating infrastructures such as specialized libraries, documentation centres, referral centres and databases;

8.3.2.2 To encourage the establishment of "information brokers" services and other types of information processing and repackaging services such as clearing-houses, selective dissemination of information service, current awareness service, literature search, translations etc.

8.3.2.3 Encourage the implementation of plans and programmes aiming at developing domestic resource sharing potentials, i.e national norms and standards, national specialization networks, national cataloguing systems, national information and document exchange programmes such as interlibrary loans, cooperative storage exchange of materials etc.

8.3.3.4 Encourage the setting up of communications facilities, such as E- mail, telefax, telecommunications etc. to facilitate the inflow of information from foreign sources as well as within the country

8.3.3.5 Give attention to the compatibility of system to facilitate information exchange e.g the application of norms and standards in information handling and telecommunications;

8.3.3.6 Invest in computer and communication technologies for the modernization and more efficient management of information systems and services;

8.3.3.7 Review matters related to the importation of information equipment i.e tariffs, import duty, sales tax, excise etc. and the pricing of data transmission, and transborder data flow.

8.4 POLICY ISSUES ON ORGANIZATION OF INFORMATION ACTIVITIES

8.4.1 Problem

The quality of information services and information and documentation delivery mechanisms is measured by their performance in meeting the specific information needs of a full range of industrial, commercial, scientific, technical, and social activities and by the cost-effectiveness of their operations. Information makes money when it is well managed. Unfortunately these services, when they exist they are dispersed in various institutions often concentrated in a few major urban areas, not cooperating with each other and managed with different degrees of success. Their information resources

management, promotion and marketing activities are often insufficiently developed to ensure their efficiency.

8.4.2 Policy issues here lie in the necessity to do the following:

8.4.2.1 Organize the information resources and services so as to ensure comprehensiveness of coverage, operational feasibility, compatibility and system interconnections among the various services;

8.4.2.2 Ensure the harmonization of the development of the different national information services;

8.4,2,3 Promote information resource sharing principles and modalities including cost sharing (within a national and inter-sectoral level)

8.4.2.4 Allocate adequate national funds for information resource management and promotional activities.

8.5 POLICY ISSUES ON ACCESS TO INFORMATION

8.5.1 Problem

There are many obstacles to the flow of and access to information - legislative, administrative, financial, political and technical. Foreign and even domestic information

and information sources are often difficult to reach because these obstacles cannot be easily overcome. Measures and procedures currently in force are felt unsatisfactory by users because in most cases they aim at restricting rather than facilitating the access; in addition, although accurately formulated they are seldomly enforced in practice.

8.5.2 Policy issues here relate to:

8.5.2.1 Having a clear picture of when, where and what constitutes an obstacle to the access to information in the country and to adopting appropriate principles, criteria and administrative procedures for their removal;

8.5.2.2 Enforcing the application of these principles and procedures by providing guidance for concrete actions (e.g national registration and deposit; national import/export regulations in trading information etc.)

8.5.2.3 Treating information as a value added commodity and determining the degree of access to it according to its cost and especially the type of users seeking it (i.e some information could be given away to national enterprises, but sold abroad)

8.5.2.4 Encouraging at the institutional level, the application of management principles, which facilitate the flow of information within the individual corporations (e.g associations, companies, societies) and among themselves.

8.6 POLICY ISSUES ON DEVELOPMENT OF INFORMATION MANPOWER

8.6.1 Problem

The utility of national information resources and services is based on the presence of qualified personnel manipulating it at all stages (acquisition, processing, distribution), and all levels (para-professional, professional and administrative). There is an urgent requirement for accelerated training of information workers both in number and quality. Nevertheless, the physical and financial resources for such plans and programmes are limited in comparison to this requirement and career development opportunities in the information field do not receive all support they deserve from national authorities.

8.6.2 Policy issues here call for the following actions:

8.6.2.1 Recognize the importance for the country's future economic and social development to promote the information manpower training programmes and facilities.

8.6.2.2 Maintain a good knowledge of national information manpower requirements (number, qualifications etc) in the various categories in the context of a rapidly changing society;

8.6.2.3 encourage the institutionalization, of educational programmes in the field of information;

8.6.2.4 Maintain status and salary scales for the different categories of information workers on a par with those of other comparable professional and technical services in the country.

8.7 POLICY ISSUES ON THE USE OF INFORMATION

8.7.1 Problem

A significant proportion of the information resources and services is usually under-utilized. Among the reasons for this under-utilization is lack of appropriateness of some of the resources and services available. Users' unawareness of the existing information potentials, and users' inability to use information systems. These factors lead to an ineffective utilization of information sources available in various sectors of society.

8.7.2 Policy issues in this case include the necessity to:

8.7.2.1 Encourage the growth of information resources and services most appropriate to the needs of users in the priority areas of national development;

8.7.2.2 Raise the awareness about the availability of relevant information resources and services and about their potential;

8.7.2.3 Raise the perception of people regarding the marketing value and utility of information resources and services on their success in problem solving and changes that may follow;

8.7.2.4 Assist people in enhancing their propensity and ability to seek information and apply it to problem solving processes in all economic and social development activities;

8.7.2.5 Investigate the use of value added processes for the evaluation of user satisfaction.

8.8 POLICY ISSUES DEALING WITH PARTICIPATION IN INTERNATIONAL INFORMATION PROGRAMMES AND SERVICES

8.8.1 Problem

National development cannot depend only on domestic information resources and services; it also relies heavily on information brought from abroad. A country or a business, which wishes to derive optimal benefits from information resources and services, needs to collaborate in and contribute to international exchange and resource-sharing programmes.

This calls for its active participation in intergovernmental and multinational cooperation schemes in all relevant areas (i.e science, technology, economics, trade, communications etc.). The United Nations, its specialized agencies and similar international bodies, have much to offer for the promotion of such cooperation and should be better utilized.

8.8.2 Policy issues concern the necessity to:

8.8.2.1 Raise the national awareness about the existing international programmes and the possibility they offer

8.8.2.2 Stimulate a more active participation of nationals in such international programmes through bi-lateral and multi-lateral arrangements;

8.8.2.3 Encourage the dissemination of information and experiences from abroad within the country;

8.8.2.4 Adhere to international agreements, conventions and other policies governing the transborder and information data-flow.

All these problems and issues call for formulation of a national policy on information systems and services. This is actually required in order to ensure the harmonious implementation and operation of information resources, services and systems e.g timely access to relevant information to varying needs of users throughout the society, coordination and compatibility of the overall national information system, better complementarity and compatibility between the various legislations concerning the provision of information, better responsiveness to the implications of new information developments and more effective participation in regional and international information systems and networks.

The fundamental premise of an overall national policy on information systems and services is that any economic, social and political system performs more efficiently if a mechanism is provided which will ensure that decision makers, planners, managers, executives, researchers in the government and private sectors and professional practitioners have timely access to up-to-date relevant and reliable data and information.

CHAPTER 9

POLICY STATEMENTS AND STRATEGIES FOR IMPLEMENTATION

(The policy statements and the implications for implementation presented in this chapter are applicable to the Tanzanian situation. They have been adapted with minor changes from National Information Policies, A handbook on Formulation, Approval and Operation of a National Policy on Information by V. Montviloff, and A National policy on Information Systems and Services for Uganda; A proposal. by A. Neelameghan, 1989 (restricted document)

For the purpose of this chapter, the following working definitions are used:

Information systems and services - A generic term denoting data and information sources in textual, factual, numerical and graphic forms, recorded in conventional or in non-conventional media and handled in conventional ways or through the application of informatics technologies. The term also covers systems, services and information products of libraries, documentation and information centres, data bases and data banks, referral and information clearing centres, information analysis, consolidation and repackaging activities, decision support and management information

programmes and other specialized information facilities.

Goal- A long range objective or an overall ultimate desideratum sought. The statement of a goal is an enduring statement of an encompassing purpose toward which action will be directed.

Policy - A statement of principles and commitment to a generic course of action with a view to attaining a given goal.

Strategy - A predetermined course of action, usually selected from a number of options. A strategy is formulated through planning that takes into account the political, legal and administrative realities.

Plan of Action - Scheduling of a set of programme actions, indicating priorities, targets and budgetary implications for a given period, such as five years.

Programme - A schedule set of specific activities or tasks to be carried out within a period, such as, a year, with clear indication of budget, responsibilities and technical implementation details.

9.1 NATIONAL INFORMATION POLICY OBJECTIVES

9.1.0 The objectives of the National Policy on Information Systems and Services will be the following:

a) To see that information is recognized as a national resource by the national authorities that is, the policy and decision makers and also by all sections of the society;

b) To make sure that the use of information contributes significantly to national development and to the improvement of the quality of life of the citizens by promoting the emergence and creation of an informed society; and

c) More specifically attain full and effective utilization of information and data as well as specialized and professional knowledge and expertise in all areas of human endeavour, generated and/or available within the country and elsewhere in the world, in making gainful decisions and in problem solving at all levels and in all sections of the society.

9.1.1 Implications and Strategies for Implementation of the Policy

9.1.1.1 To prepare and implement medium and long term programmes of action for developing a comprehensive national information system based on existing infrastructure,

coordinating the various subsystems and specialized systems and services, identifying and correcting deficiencies, filling-in gaps and interacting productively with regional, international information systems and programmes.

9.1.1.2 To develop systems, structures and procedures for the provision of relevant, reliable and timely information and data at reasonable cost to decision makers, development planning team, executives and administrators, researchers, engineers, technicians, other professionals and para-professionals, extension workers, farmers, entrepreneurs, the business community and all those contributing in diverse ways to the achievement of Tanzania's development objectives.

9.1.1.3 To ensure continuous support to the components of the national information system including human, financial and other infrastructural resources, administrative and institutional arrangements through public and other forms of financing and collaboration.

9.1.1.4 To ensure cohesiveness and sustained growth of the national information system and its components in conformity with the country's development objectives and its political, social and cultural characteristics and government structure and the adaptation of the national information system as these evolve through time.

9.2 POLICY ON COORDINATION OF INFORMATION SYSTEMS AND SERVICES

It shall be the policy of the Government and the Ruling Party of Tanzania to establish a national mechanism for the national policy on information systems and services, placed as high as possible in the Government structure with a view to ensuring effective implementation of the national policy. Coordinating and harmonizing the information systems and services, projects and programmes in Tanzania so as to minimize duplication of effort and wastage of resources in the development and operation of the national information system and to maximize benefits of the services provided by the information systems to the people at all levels in the country. The mechanism may be termed the "National Information Policy and Coordinating Board or Council"

9.2.1 Implications and strategies for implementation

9.2.1.1 Creation of a National Information Policy and Coordinating Body;

9.2.1.2 Translating the elements of the National policy on Information Systems and Services into medium term plan of action and then to its implementation through yearly programmes;

9.2.1.3 Assigning of responsibilities to different institutions and organizations constituting the national information system;

9.2.1.4 Coordinating, promoting and monitoring of the developments in the national information systems; ensuring the harmonization of the components and their activities; assigning the performance of the components, correcting deficiencies and filling in the gaps;

9.2.1.5 Formulating and implementing appropriate legislative, regulatory and administrative procedures and measures conducive to the sustained growth of the national information system.

STRUCTURE AND FUNCTIONS OF NATIONAL INFORMATION POLICY AND COORDINATING BODY. (These are presented in the appendix to this chapter).

9.3 POLICY ON INFORMATION FOR NATIONAL DEVELOPMENT

It shall be the policy of the Government and the ruling Party of Tanzania to treat information and data, the specialized knowledge and expertise as well as the related information industry in the country as resources essential to socio-economic development plans and programmes.

9.3.1 Implications and strategies for implementation:

9.3.1.1 Ensuring that the National Information Policy is incorporated as an integral part of the national development policy and that the national information resources or system planning is made an integral part of the national development plans and strategies so that the available information, data and services remain relevant to the development planning needs.

9.3.1.2 Instituting appropriate programmes and activities at national and institutional levels to demonstrate to, and sensitize decision makers and planning staff in the national leadership with a view to accelerating emergence and acceptance of the concept that data and information are essential national development resources and that a healthy information industry can make significant contributions to the national economic growth and to the national product.

9.3.1.3 Adopting appropriate methods and procedures so as to ensure that within the broader context of the political philosophy and government structure of the country, the government and its component institutional structures have important roles in and can make significant contributions to the national information infrastructure development, including the formulation of informatics policies and system plans and their implementation, monitoring, coordination, and provision of support.

9.3.1.4 Supporting measures and programmes to identify high level technical staff in government ministries, departments, bureaux and other corporate entities that liaise with and assist decision makers, policy makers and top-level executives and to orient them to the information and data sources pertinent to their areas of activity, to effective methods of assessing and utilizing the information and data sources, services and products, and to ensure that the national/sectoral information sources and services are effectively linked and made easily accessible and conveniently usable to such officials.

9.3.1.5 To give priority consideration to the inclusion of an information component with a separate budget in line with all sectoral and/or national and sub-national development plans and programmes so as to contribute to the achievement of the overall objectives of the national information policy.

9.4 POLICY ON PROVISION OF ACCESS TO INFORMATION

It shall be the policy of the Government and the Ruling Party of Tanzania to support the organization and management of the public information sources in ways such as would ensure easy access, effective distribution and utilization by all categories of users in all locations of pertinent information and data, through the development of information networks, resource sharing programmes, information services and document

delivery services appropriate to different user groups and their information and data needs, and the adoption of appropriate techniques and strategies of resource management with a view to achieving high quality and cost-effective information and data services.

9.4.1 Implications and strategies for implementation:

9.4.1.1 Formulation of criteria, guidelines and administrative procedures for the allocation of public funds and other resources for the planning, development and management of information systems and information resources in the country;

9.4.1.2 Endorsing the fundamental principle of freedom of access to information and information sources bearing in mind the necessary constraints on such freedom in relation to such considerations as national security, personal and/or corporate privacy, social and cultural morals, propriety rights and administrative efficiency;

9.4.1.3 Formulating criteria for and allocating responsibilities among institutions in the country for building information resources, data bases and data banks and for the provision of a range of information services nation-wide in selected areas of specialization and priority;

9.4.1.4 Implementing legislation and adopting administrative procedures for the national registration/disposition of all data and information sources and materials generated in the country whatever be the recording medium;

9.4.1.5 Formulating and implementing criteria for determining priorities on the import of foreign information sources, including databases of relevance to national development needs;

9.4.1.6 Establishing and implementing procedures for monitoring non-traditional transborder flow of problem-solving information/data, technology and knowledge - for example, via consultants, import of goods and services, training of nationals abroad, multilateral and bilateral agreements, through multinational companies and regional, international and other organizations and agencies in the country, etc. and adopt effective means of institutionalizing the systematic flow and access to such information in the country;

9.4.1.7 Encouraging the formulation and adoption of resource sharing principles, modalities, tools and cost sharing within sectors and at national and international levels.

9.4.1.8 Supporting activities and programmes designed to improve the quality and strengthen the resources and services

of libraries, documentation and information facilities, data centres, information analysis centres, clearing houses, archives, and other institutions so as to secure wider and easier access and dissemination of information and data to all categories of users.

9.4.1.9 Supporting projects and programmes for the creation, updating and maintenance of information tools and products that facilitate the identification, selection and location of information and data sources and materials in the country, including databases, information and data systems and services, on-going projects, software packages used, specialized equipment, teaching aids, compilations of profiles of institutions, agencies and specialized personnel/experts, contractual arrangements and technology transfer agreements, directories, inventories, and to institute administrative and other measures that would facilitate the collection, recording, exchange and processing of such information from all the appropriate institutions, agencies, programmes and projects.

9.5 POLICY ON INDIGENOUS INFORMATION AND INFORMATION PRODUCTS

With the view to maximizing the utilization of the national potential and capacity for social, economic and cultural development, the policy of the Government and the

Ruling Party of Tanzania shall be to intensify and strengthen the indigenous generation of scientific, technical socio-economic and educational data, information and material and to widen the range, scope, types and coverage and to improve the quality of, information sources, services and products that contain and carry such data and information whether in documentary or other forms.

9.5.1 Implications and Strategies for Implementation

9.5.1.1 Stimulating, promoting and supporting the generation, recording, publication, protection, preservation and dissemination of the nation's scholarly, creative and professional output and their bibliographical control and documentation through implementation of appropriate legislation and administrative measures.

9.5.1.2 Supporting programmes and measures in the public and private sectors for upgrading and improving the quality of information and data generated and of the primary, secondary and tertiary documents and other recording media including electronic forms and data bases that carry such data and information.

9.5.1.3 Providing support to indigenous publishing industry in particular and other components of the information and

informatics industry of the country - the components to be supported being selected through appropriate and agreed upon criteria that are in conformity with the overall national information policy.

9.5.1.4 Providing resources to appropriate institutions and, through legislation and/or administrative measures, facilitating prepublication documentation (for example, cataloguing-in-publication, keywords, abstracts etc.) of all information carrying materials produced in the country and ensure their coverage in national and sectoral data bases and bibliographic tools in the country and abroad.

9.4.1.5 Providing support to appropriate institutions and programmes in the country through legislative and administrative measures to facilitate the improvement of the collection, validation, organization, computerization and timely dissemination of numerical and statistical data needed for preparing decision support information products guiding development programmes and activities.

9.6 POLICY ON PROMOTION OF EFFECTIVE USE OF INFORMATION

With a view to maximizing the effective use of information and information sources by all sectors of the society, the national policy of the Government and the Ruling Party of

Tanzania shall be to raise the perception of the people regarding the value and utility of information and data in all areas, their activities and to continuously strive to increase the propensity and ability of the people to apply this resource in problem solving, to keep themselves continuously updated and well informed in their respective areas of interest and to improve the quality of life in general.

9.6.1 Implications and strategies for implementation

9.6.1.1 Encouraging, stimulating and supporting institutions, organizations and programmes in the country to adopt appropriate measures and contributing resources to study and analyze periodically the information and data needs and information-seeking behaviour as well as attitudes towards information use of persons falling within their respective areas of concern; and instituting sensitization, orientation and educational programmes to orient the perception and attitudes of users where necessary and to assist them in enhancing their ability to use information and information sources effectively.

9.6.1.2 Coordinating/harmonizing this aspect of the national policy on information systems and services with the relevant elements of the national education policies and plans as a whole and within the different disciplines/sections of the

technical and professional education (for example, engineering/technical education, training of managers, executives, researchers and extension personnel)

9.6.1.3 Encouraging and supporting national and institutional efforts in user sensitization, user orientation and user education.

9.6.1.4 Supporting measures that stimulate the effective use of data and information especially by decision makers and their support staff as well as people at the "grass roots" through the use of specialized information products and services and communication methods and media.

9.7 POLICY ON INFORMATION TECHNOLOGIES

It shall be the policy of the Government and the Ruling Party of Tanzania to support experimentation and to stimulate the optimal utilization of emerging information technologies for data and information handling with a view to improving the quality, comprehensiveness and management of information systems and services in the country, facilitating access to, delivery and utilization of data and information, and to ensuring adequate consideration and resolution of problems that may arise as a result of the application of such technologies.

9.7.1 Implications and strategies for Implementation

9.7.1.1 Periodical reviewing of policy issues and strategies regarding the application of telecommunications technology, computer technology, audio-visual materials and equipment, reprography, printing and other related charges so as to facilitate access to and exchange of information.

9.7.1.2 Examining, as needed, all aspects of the application of information technology, such as, franchise for the provision of commercial communication services, issues relating to cost, pricing and related economies of data and facsimile transmission, matters relating to the introduction of videotex, copyright legislation for machine-readable and related matters of confidentiality, corporate and individual privacy, etc. and recommending appropriate action. In this context, such other issues as freedom of access to information, sovereignty and conflicts, intellectual property and business laws, trade in information services and activities of transnational corporations need to be taken into consideration. It is important to prevent the erosion of the country's laws and policies (and thus national sovereignty) by information and communication technologies and transborder data flow. Also, it is important to determine the extent of economic and political vulnerability consequent on the country's heavy reliance on external information and

information services, and to take steps to reduce it, if necessary.

9.7.1.3 Formulating and implementing criteria for supporting experiments for the testing, application and adoptation of information technology for improving the information systems and services in the country.

9.7.1.4 Information technology or informatics has become an important and decisive issue in inter-country interactions and cooperation. Another significant aspect is the need to take into account the private sector including transnational corporations involved in the production of hardware and software as well as the expertise available

9.7.1.5 In some countries, there is a separate policy relating to each of the areas/library/documentation, informatics and telecommunications, while other countries are attempting to formulate comprehensive policies integrating all these domains. It should be noted that the government ministry/department/bureau concerned with libraries/documentation, informatics and telecommunications is in most of the countries distinct. And since several of the facets and influencing factors are equally applicable to library and documentation activities as well as informatics, one may find elements of policy common to both domains but

enumerated in separate sets of policy statements. It will help implementation of information systems and services if at the policy formulation stage the relevant functions, interests, etc. of the different departments/parties concerned with libraries/documentation, information technology, telecommunications, trade, customs and taxation, etc. are taken into account.

9.7.1.6 With the increasingly global nature of electronic information networks, sovereignty can be viewed no longer as simply a matter of physical borders and political allegiances, but also as including consideration of access to, control over and a degree of reliance on information sources.

9.8 POLICY ON INFORMATION MANPOWER DEVELOPMENT

9.9.1 It shall be the policy of the Government and the Ruling Party of Tanzania to promote and support the development of personnel adequate in quality and in number for the efficient and effective management, operation and development of the information resources, systems and services in the country.

9.8.1 Implications and Strategies for Implementation

9.8.1.1 Formulating and implementing a national information personnel policy that is in harmony with the national policy

on information systems and services and with the national education policies.

9.8.1.2 Instituting measures to recognize in the public sector the technical and professional character and level of knowledge, and skills required to manage modern information systems and services including libraries and archives.

9.8.1.3 Supporting measures to establish job classification schemes, pay plans and status for the information professionals stipulating the types and levels of responsibility, qualifications necessary, and salary range for each job category, with the view to attracting and retaining for the information management functions well qualified, competent and motivated professionals.

9.8.1.4 Instituting necessary measures including technical assistance programmes for increasing opportunities for the education and training for professional, technical and supporting staff and for improving their career prospects in the country.

9.8.1.5 Periodically assessing the curricula and training facilities available in the country for the different categories of information personnel, providing support for their updating and modernization and the training of teachers

in information science, documentation and archives administration; and instituting in selected institutions of higher education and universities, appropriate graduate and post graduate programmes in information studies.

9.8.1.6 Encouraging and supporting the establishment and development of national professional associations in the fields of library, documentation, information science and archives administration with wider participation of professionals from both the public and private sectors.

9.9 POLICY ON INTERNATIONAL INFORMATION ACTIVITIES

It shall be the policy of the Government and the Ruling Party of Tanzania to interact with and participate in global, international and regional information systems, programmes and activities that are conducive to the development of the national information systems and services.

9.9.1 Implications and Strategies for Implementation

9.9.1.1 Factors affecting national policy in relation to regional and international cooperation in the field of information systems and services include:

- National socio-cultural, political and economic characteristics and considerations;

- Information technology and telematics developments;

- Emerging international and regional cooperation and coordination programmes;

- Role of international governmental and non-governmental organizations;

- Orientation and emphasis in international and regional relations and their respective information support.

9.9.1.2 Encouraging the active participation of specialists and institutions, in both the public and private sectors in the country, in appropriate regional and international meetings where useful exchange of information and experience on recent developments in information systems and technologies, documentation, libraries, and archives could take place

9.9.1.3 Encouraging and supporting as may be necessary inputting of data and information generated/published in the country into relevant regional and international information systems and networks.

9.9.1.4 Ensuring that relevant international standards, norms, procedures, tools and guidelines (e.g those developed by UNESCO, ISO) are made available and applied widely in the information systems and services in the country.

9.9.1.5 Encouraging and supporting the utilization of scientific, technical and economic knowledge emanating from other countries with a positive attitude to acceptance and use of such information and knowledge.

9.9.1.6 Pursuing cooperative activities with other countries, including joint research projects, academic exchange and training programmes in information systems and services

9.9.1.7 Supporting the country's participation in intergovernmental agreements that facilitate information flow.

APPENDIX TO CHAPTER 9.

STRUCTURE AND FUNCTIONS OF NATIONAL INFORMATION POLICY AND COORDINATING BODY.

1. Coverage

The National Information Policy and Coordinating Body will be concerned with the development of the national information system of the country and, therefore, will cover all matters related to information and data in textual, factual, numerical and graphical forms, recorded in conventional and non-conventional media; information and data banks, data bases, library systems and services, documentation centres and services, information clearing facilities, referral centres and services, information analysis, consolidation and repackaging centres and services; the information industry; and information and data handling in both conventional ways as well as through the applications of modern technology.

2. Position in the Government Structure

The National Information Policy and Coordinating Body shall be placed as high as possible in the Government Structure. In Tanzania, it is suggested that it be in the Office of the Prime Minister.

3. Structure

The national information policy and coordinating body will have the following major functions:

- Policy making and decision function entrusted to an Inter-Ministerial Group;

- An executive function, entrusted to an Executive Directorate;

- An advisory function, entrusted to a National Advisory Committee.

The Inter-Ministerial Group, under the Chairmanship of the head of the office under whose authority it is placed, (that is, the Prime Minister), will mainly be concerned with matters of policy and decisions thereof, on all matters concerning information and data. It should be composed of Ministerial level representations from the relevant sectors, services and political entities such as, education, science and technology, industry, economics and planning, communications, mass media, manpower, statistics and culture. It shall meet at least twice a year to review the activities of the National Information Policy and Coordinating Body, consider new policy proposals, the budget and programmes of the Body, establish priorities and deal with major policy issues concerning the development of the national information system.

4. Functions

4.1 Elaborating the national policy on information systems and services and preparing revisions when necessary and formulating strategies for the implementation of the policy component

4.2 Ensuring that the national policy on information systems and services and the national information system plan are supportive of and integrated or incorporated in the national development plans and programmes;

4.3 Translating the national policy on information systems and services into action plans, by formulating a national plan to be implemented through yearly programmes/activities for developing the various components of the national information system, in collaboration with appropriate institutions and organizations.

4.4 Coordinating, promoting and monitoring information activities, systems and services, programmes and projects in the country in collaboration with appropriate organizations within and outside the country.

4.5 Assigning responsibility to different organizations and institutions in the country regarding the building-up and sharing of information resources, creation of data bases,

The Executive Directorate, constituting the executive arm of the National Information Policy and Coordinating Body, shall be headed by an executive Director, supported by competent professional staff and appropriate administrative and secretarial staff. The Directorate will consider and implement projects, programmes and activities relating to system development and networking, education and training of professionals and users, norms and standards; and in general implement, in cooperation with appropriate organizations, the plan of action and yearly programmes for the development of the national information system.

The National Advisory Committee (NAC), a technical body shall have 12 - 15 persons who are experts in different areas of data and information handling, and representatives of information user groups, academic and professional organizations and the information industry. The NAC shall advise and assist the Executive Director in ensuring the effective implementation of the policies and decisions of the Inter-Ministerial Group regarding the development and management of the information systems and services and activities in Tanzania.

developing information manpower, setting up and interconnecting information and data systems and services etc.;

4.6 Promoting and supporting appropriate sectoral information systems, specialized sub-networks and services;

4.7 Formulating legislative and administrative procedures as may be necessary to secure resource inputs - human, financial and other infrastructures - for development and operation of the national information system;

4.8 Formulating and implementing regulatory, legislative and administrative mechanisms relating to information provision, accessibility and flow, to cooperative arrangements and resource-sharing and to the information industry;

4.9 Formulating and implementing guidelines, criteria, norms and standards for the development and for assessing the performance of the components of the national information system; and implementing measures for the correction of deficiencies and for continuous improvement of the research results for application in operational activities.

4.10 Supporting research and development in information handling, informatics, norms and standards, library science, documentation, archives management, and training of informatics specialists and users, and dissemination of the

research results for application in operational activities.

4.11 Supporting cooperative and collaborative operations and programmes with regional and international information systems and agencies so as to enrich the national information activities on the one hand and providing inputs (information, data, expertise) to the regional and international systems, services, programmes and activities on the other.

5. Budget

5.1 The National Information Policy and Coordinating Body should be allocated adequate funds. Apart from maintaining the Executive Directorate and convening of the meetings of the Inter-Ministerial Group and of the NAC, the major items of expenditure in the Boady's programme would be support given to sectoral information systems, development, systems interconnection and networking, education and training of information specialists and users, and research and development projects in the information field.

As said at the beginning of this chapter, the policy statements and strategies for implementation outlined in this chapter are applicable to the Tanzanian situation. The following chapter therefore, outlines the steps that should be taken in the actual formulation of a national policy on information systems and services.

CHAPTER 10

FORMULATION OF NATIONAL POLICY ON INFORMATION SYSTEMS AND SERVICES FOR TANZANIA : MAJOR PHASES

10.0 The preceding two chapters presented a set of policy issues and model statements on national policy on information systems and services for Tanzania, and their implications and strategies for implementation. These may form the basis for national consultations and essential concensus on a national policy which may be legislated by the Government. This chapter outlines steps towards national consultation and obtaining official approval for the national policy on information.

PHASE I:

10.1 ORGANIZATION OF A NATIONAL CONSULTATION

Objective

The objective of organizing a national consultation is to expand the groundwork for the formulation of a national policy statement on information. It is used in particular to discuss at the national level the policy issues selected and presented by the ad hoc working group i.e in the background and main documents as discussed in chapter 8 and 9 above. The specific objectives of the national consultation is to :

- Make the national authorities aware of the need and advantages of having a national policy for the guidance of the development of information resources and services and to acquaint them with the issues involved;

- Achieve a national consensus regarding the most relevant themes or elements to be included in a national policy and the major implications for their implementation with particular reference to the country's social, economic, cultural and political context;

- Set up a national operation follow-up mechanism to ensure the endorsement of the policy statement;

- Identify a general strategy to facilitate and enforce the implementation of the policy;

The expected output is therefore:

- A general national policy on information statement, or list of declarations that will constitute such a statement;

- A selective list of major issues which need to be covered by the policy and steps for their implementation, including regional and international implications of the policy;

- A proposal for a policy-making mechanism for the coordination and development of activities related to information resources and services;

- Appropriate procedures and format for presenting a national policy on information to the national authorities for approval.

The national consultation can be carried out by either holding a national consultative meeting, through a series of individual personal interviews or by a questionnaire.

10.1.1 The National Consultation Meeting

This method has an advantage of giving opportunity for interactive discussion among the participants and an in-depth study of the matter. It also gives the participants a sense of first hand involvement in the project and ensures their commitment to actions that may follow.

10.1.2 Participants

It is assumed that the larger the number of high ranked participants attending the meeting, the more important its results will be. As such the national consultation meeting should involve high-ranking officials particularly:

1) Managers of the main national information and library services and systems i.e from libraries, documentation centres,archives etc.; informatics and telecommunication systems.

2) Government authorities e.g from planning, finance, justice ministry, ministry of agriculture, education, health etc.

3) From private sector e.g managers of information services in corporations, enterprises, commercial agencies, banks, publishing, broadcasting, etc.

4) From information user groups and information industry e.g planners, policy makers, researchers, professionals e.g engineers, physicians, teachers, extension workers etc.

5) Foreign experts with experience in formulation of the policies in other countries.

10.1.3 Work Plan

The work plan for the preparation of the national meeting needs to be prepared as soon as the decision of formulating a national policy on information is taken. It basically provides a schedule for all events that should take place prior to the meeting and possibly shortly after. It should include information on:

- The institution of the ad hoc working group of a task force (who should be its members, how many and their mandate)

- Planning the preparation of the working documents for the meeting (how many, what should be their content, who should be entrusted to draft them);

- Preliminary selection of the date and duration of the meeting;

- Professional groups and institutions to be invited to nominate participants;

- Selection of the organization to be responsible for convening the national consultation meeting (which institution will provide leadership in the organization of the meeting; which international, multilateral or bilateral agency from which technical or financial assistance is needed - the discussion of tasks etc)

- Selection of the venue for the meeting

- Scheduling of preparatory meetings to review the above

- Scheduling of follow-up actions immediately after the meeting to ensure the implementation of its results (who should be in charge, during what period, for what purpose)

10.1.4 Tentative Programme

The meeting may last for 3 days or even a week. In any case the agenda should focus on examining the issues one by one and the discussion on the setting up of the follow-up group. The review of the policy issues may be carried out in

small working groups after more general matters have been presented (e.g goal, concept, scope of the policy)

10.1.5 Time for the meeting

It is assumed that the earlier the date of the consultation in the financial year, the easier will be the implementation of the policy during the following financial year. It is also assumed that the closer (but not too close) the date of the consultation to the drafting period of new national development plan, the easier will be the incorporation of its outcome in the plan (Montviloff, 1990,p.57)

Figure 3. below show the steps to be taken in phase I.

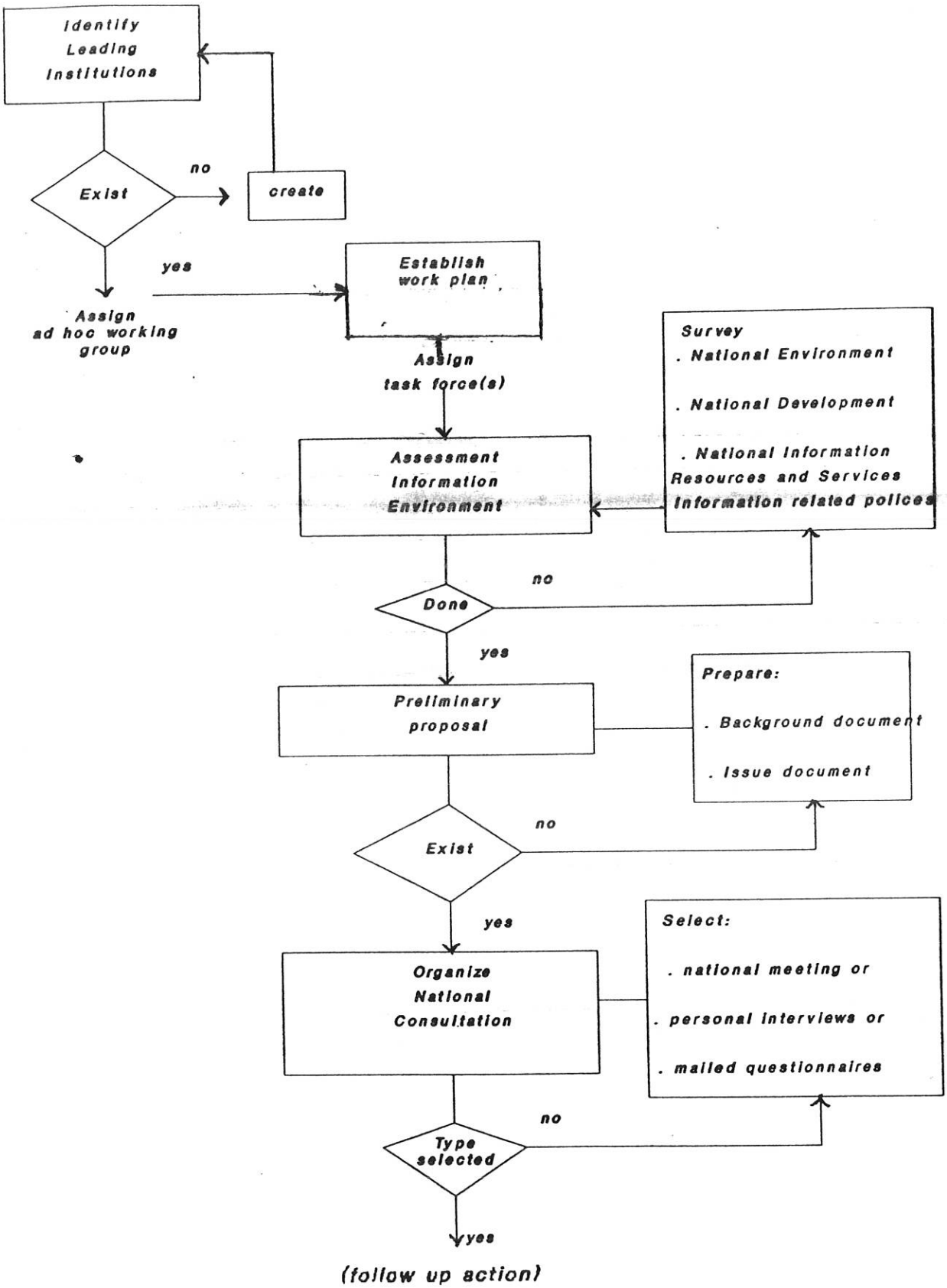


Fig. 3 : Phase I - Formulation of a National Policy on Information

PHASE II

10.2 OFFICIAL APPROVAL OF A NATIONAL POLICY ON INFORMATION

10.2.1 The setting up of a plan of action for the development and management of information resources and services depend on the acceptance of an information policy. The draft proposal formulated in phase I need to be presented to, discussed and approved by the appropriate national authorities and later embodied into a national legislative text. In this phase, three major tasks need to be performed:

a) Preparation of the final version of the information policy proposal;

b) The submission of the proposal to the appropriate national authorities;

c) The formal inclusion of the proposed policy into a text which could serve as a legal authority for the development of information resources and services.

Before a national policy on information is adopted it has to pass through several levels of authority:

First, it needs to be accepted by professionals concerned; secondly, it has to be accepted by users; thirdly, it needs to be supported by information managers; and finally it needs to be accepted and approved by policy makers.

10.2.2 Preparation of the final version

The ad hoc working group and its task force for convening the national consultation could also be assigned the preparation of the final version of the results of this consultation.

It is important that all those entrusted with the finalization of the results of the consultation, be fully recognized by the others as the best representatives and follow-up group.

It should be remembered that the final version of the policy proposal serves as a basis for drafting the formal text legalizing the development of information resources, systems and services in the country. It should therefore be clear and persuasive to legislators and be neatly reproduced.
(An example of the outline of final version of the proposal is shown in appendix to this chapter)

10.2.3 Submission of the final proposal

The principal purpose of submitting this proposal to the authority is to secure their support and possible assistance in presenting the proposal for official approval. In practice it means circulating the proposal document to institutions/individuals in public and private sectors for

their comments; selecting the most suitable government body (e.g a Ministry, National Institute, National Council etc) for introducing the proposal to the government and channelling the proposal through the appropriate legislative bodies. Here two things play an important role - time factor and human factor: As regards time, it is necessary to pick up the period which is the most favourable for the endorsement of new policies by the government e.g at the time of preparing new national plan or the time for revision or changing the constitution or when a new government is formed. For Tanzania this is a very good time (1992) for preparing the policy because in a few years time, an election will be held based on a new constitution.

The human factor plays a role here also in that, any policy is made easier if it is endorsed beforehand by senior government officials. That's why the national consultation should involve senior officials.

Whereas identification of a leading agency in this matter may be difficult, it is always appropriate to select any agency which is concerned with development of national information resources. A consensus on this has to be reached by information professionals. However, some of the agencies normally identified in most countries involved in this process are national documentation centres and national public library service board. In the case of Tanzania it may be necessary to select the Tanzania Library Services Board.

Before presenting the proposal, it is necessary to make sure that it is in a format required to presenting it to legislators. Help may be required in this case from officers experienced in presenting such texts to the government.

10.2.4 Integration of the information policy into the development policy

The objectives here are the following:

- To link the national information strategy to the overall development policy of the country;

- To define the place of information resources and services (in public institutions of different sectors of development and private corporations) in the national development activities;

- To provide official guidance to government agencies and private corporations for the planning and management of information resources and services;

- To ensure that the need for developing information resources is taken into account in all policy-making and planning processes;

- To establish a basis for any future reviewing of the policy according to the changing circumstances;

- To highlight the influence of other interrelated policies on the information policy.

The expected outcome is the acceptance of the strategic significance of information services and their managerial

implications for businesses and national economies and the endorsement of an information policy by policy makers can be taken as a reasonable guarantee of commitment and of getting resources.

10.2.4.1 The form of policy

There is no unique form to be used in presenting the policy. The policy may come as a constitutional law, common law, statutory control, enacted statutes, national agreement, guidelines, decree or any other form. The policy may also be an integral part of a wider sectoral policy or it may stand as a policy on its own right. It is however necessary that the policy is incorporated in such a way that it allows for future amendments.

The integration of an information policy into the decision making and problem-solving for development is at this stage, in the hands of the government. The government will decide whether to accept it and if yes, what prominence to give it. All this will depend on how best the arguments in support of the policy have been presented. The following factors particularly determine its acceptability:

- The proof of the need for it;
- the proof of its degree of priority in the context of other priorities;
- the description of the resource requirements for it;

- the level of support for it from different institutions;

The following will enhance the degree of importance given to it:

- Whether the proposal covers only one specific field or has also an impact on other fields of interest;

- Whether the proposal aims at encompassing the other existing policies or be any part of them;

- Whether the proposal concerns national interests or only of one given sector;

Figure 4 below show the steps to be taken in phase II.

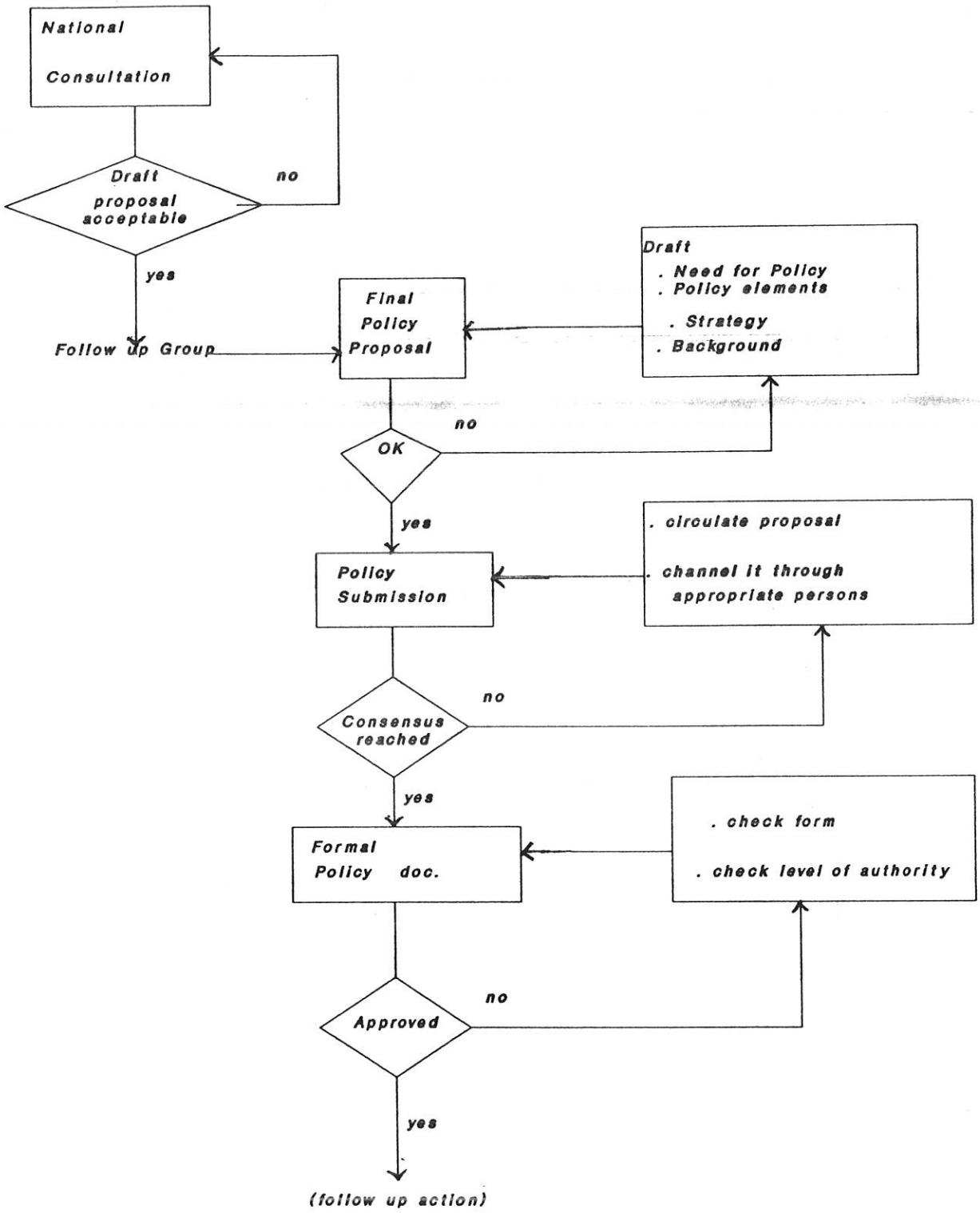


Fig. 4 : Phase II - Official Approval of a National Policy on Information

PHASE III

10.3 IMPLEMENTATION OF A NATIONAL POLICY ON INFORMATION

10.3.0 The implementation of a national policy on information is perhaps the most important phase in the information policy-making process. After the policy makers have provided general trends and objectives, these need to be translated into programmes by senior managers in the field of information and implemented by information professionals in the form of projects. The implementation process starts with the creation of a group which later becomes the core of the permanent policy-making mechanism.

10.3.1 Establishment of a Coordinating Mechanism

The development of national information resources and services consists of a simultaneous operation of a large number and variety of broadly dispersed information programmes and activities. Their planning and harmonization usually necessitates the setting up of a coordination procedure which will facilitate and stimulate voluntary cooperation i.e a permanent National Information Coordination Mechanism. (A chart on National Information Coordinating Mechanism is appended to this chapter). The coverage, structure and functions of coordinating mechanism are discussed in details in the appendix to chapter 9.

10.3.2 Development of a Plan of Action

10.3.2.0 Drafting the plan of action aims at the following:

- the assignment of priority areas in accordance with the national development plans
- the design of programmes in response to these priority areas
- the selection of projects making up the programmes
- the estimation of resources and costs for the implementation and operation of these priorities.

The plan of action is expected to implement the strategies derived from the policies for the development of national information resources and services as an integral part of the national development plan. Its main purpose is to provide consistency and cost benefit advantages in the implementation of the policy and operation of the plan.

10.3.2.1 Content

A plan of action for the development of national information services normally covers 3 major domains of information activities:

- the information activities in the public sector;
- the information activities in the private sector;
- the information activities in the international environment.

It should be noted that planning as in the case of information policy-making is a continuous process which cannot be finalized in a given period of time - one plan of action initiates another plan, because changes are brought about as a result of the earlier plan.

The planning process takes place at local (corporations, institutions) and national (government) levels of management, and interacts with decisions taken at the international level (transborder). It usually follows the same pattern in the selection of priority areas, selection of programmes, selection of projects and cost estimates.

Selection of Priority Areas

These vary according to the policy issues (see chap.8) e.g information priority areas in profit-making corporations may be different from priority areas of public sectors whose purpose is to serve the population or priorities of international agencies whose purpose is to promote exchange of information.

Selection of Programmes

Each priority area needs to be translated into programmes as already discussed above (see chap. 8 and 9)

Selection of Projects

Each programme is normally composed of several projects which themselves may include numerous activities. The choice of these projects and their proper preparation will determine the quality of the information programme and subsequently the impact of the information policy itself.

Resource and Cost-estimates

Each project proposal for information activities should be accompanied with estimated expenditure and income where applicable. The costing procedures should follow the guidelines provided by the government

10.3.3 Financial Aspects of the Implementation

Planning for the provision of financial resources must start as early as the planning for policy formulation. Financial support is usually allocated on the basis of how convincing funding requests are in terms of both political and financial returns.

Success in raising the funds for implementation of the policy depend on a number of factors:

- Awareness of the relationships between national development plan and national budget and budget circle.
- Ability to justify the value of information in national development

- Knowledge and techniques for assessing the impact of information services on users (usually bearing on a pilot project)

- Communication skills in proposing the funding.

Funds are usually needed for capital investment i.e in information infrastructure and technology; and for recurrent costs to ensure sustained operation of programme or service. The funds have to be reviewed regularly during the life of the programme.

10.3.4 Sources of Funds

These may be the government, private sector enterprises, private sector non-profit making institutions and revenue from information products and services.

Foreign Funding Sources

These are based on the bilateral agreements with foreign national aid agencies e.g USAID, IDRC, etc.; or multilateral agreements with inter-governmental organizations e.g UN agencies, Regional Development Banks, SADCC etc; or contracts with international non-governmental organizations and in a few cases joint ventures.

The follow-up group set up after the national consultation should examine studying the financing possibilities as early as possible, in particular by raising its knowledge of the relationship between the national development plan, the

national budget and the possible source of funding; and its ability to effectively present the information requests for the implementation and operation of the policy.

First the possibility of getting funds from national sources should be investigated. If national funding potential is insufficient to complete the information plan of action then external donors should be approached to complement the resources. This will require an investigation of potential donors, their financing regulations and procedures and their readiness to support the requests.

The project proposal should meet two basic conditions: first they must be well prepared and secondly they must be given high priority by the organization of government seeking the funds. In addition to what has already been discussed, the project has a better chance of succeeding if:

- It attracts the donors with investment perspectives. The proposal should not stop at describing needs but should also provide solutions and show what tangible results funding will bring.

- Its requirements parallel information funders' priorities; appeals based on importance of information alone are likely to have little impact; information programmes should be associated with important capital development projects (i.e illiteracy, major agricultural projects..) which help the funds to achieve their goals or self interest.

- It indicates support from the constituency (i.e users); what people want is more critical in fund raising than what the information community want.

- It asks for specific amounts because specificity is more effective in fund raising.

10.3.5 Operation and Evaluation of Information Policy Objectives:

Information policy-making is a continuous process which can never be considered as finished. The national policy on information in force is a legal instrument which needs frequent reviewing to make sure that it is in conformity with the ever-changing information environment. This calls for evaluation from time to time which may result in adjustments through appropriate amendments, additions and deletions. Evaluation can be done by professionals by matching the outcome of projects with the objectives and offer suggestions for change where necessary. The evaluation can be done periodically by producing reports.

Figure 5. below show the steps to be taken in phase III.

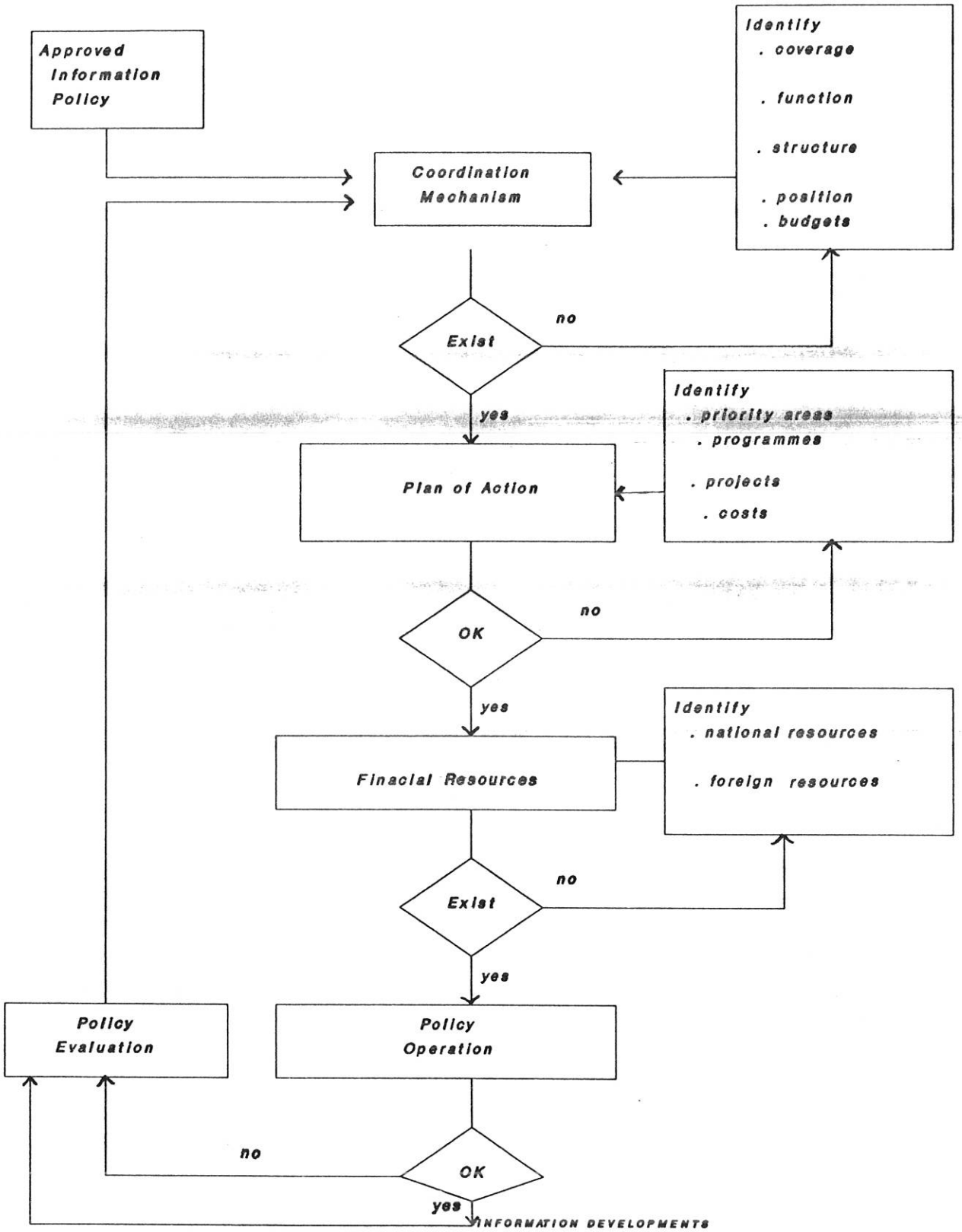


Fig. 6: Phase III Implementation of a National Policy on Inf

APPENDIX TO CHAPTER 10 (See 10.2.2)

EXAMPLE : FINAL PROPOSAL FOR A NATIONAL POLICY ON INFORMATION

INTRODUCTION

(The objectives of the document, how it was prepared and by whom)

DEFINITIONS (1 page)

(The description of main terms e.g information, infrastructure ...etc.)

NEED FOR A NATIONAL POLICY ON INFORMATION (1 page)

(Elements to be extracted from the introduction [in this work, chapter 1 - 2] and the basis of the information collected in the background document,[in this work chapter 3 - 6])

SUGGESTED ELEMENTS FOR A NATIONAL POLICY ON INFORMATION

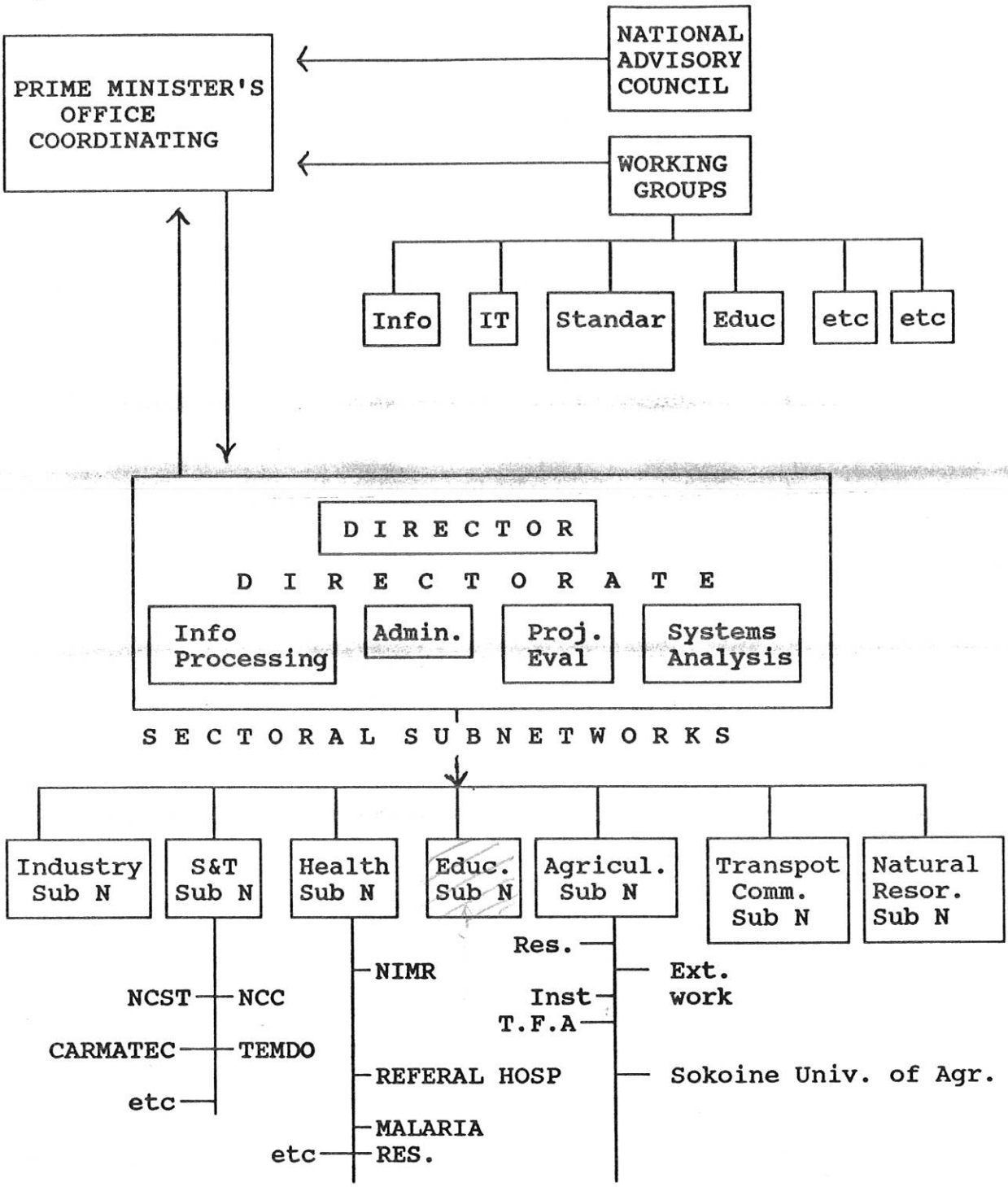
(approximately 15 pages)

(Basically a short version of the document describing the policy; includes statements for each issue with first steps for their implementation [see chapter 8 - 9).

SUGGESTED STRATEGY FOR THE IMPLEMENTATION AND THE OPERATION OF THE NATIONAL POLICY ON INFORMATION (2 - 4 pages)

(Proposed plan for action for achieving a practical national policy on information [see chapter 10]. Background documentation on national information resources and services (optional in an annex).

Fig. 6 NATIONAL INFORMATION COORDINATING CHART



S & T = Science and Technology
T.F.A. = Tanzania Farmers Association
NCST = National Commission for Science and Technology
NCC = National Construction Council
NIMR = National Institute for Medical Research

CHAPTER 11

CONCLUSIONS AND RECOMMENDATIONS

11.1 GENERAL CONCLUSIONS

This work has attempted to highlight the existing information infrastructure in Tanzania with the purpose of pointing out general strengths and weaknesses. An attempt has also been made to show the existing legislations and duplications in the terms of references and the existing gaps in some of them. An analysis of the country's background including the political, administrative and policy making machinery has also been made. Several conclusions may be drawn on the basis of this work:

1) The various information systems and services in the country are not coordinated and operate with varying degrees of success;

2) There is a severe shortage of trained professional manpower in the field of information;

3) The legislations formulating the information systems are in some cases not forceful and there is duplication of terms of references in some institutions;

4) As already pointed out, information is not regarded as a sector in the development plans of Tanzania.

11.2 ACTION PLAN

These factors and many others already pointed out elsewhere in this work, call for a plan of action to be drawn immediately to focus on the following :

a) Setting up and strengthening appropriate information systems to generate information products and services for decision makers, planners and executives in government ministries, departments and bureaux;

b) The integrated and coordinated development of subsystems and trans-sectoral systems of the national information system that have been identified as priority areas in national development plan so as to minimize overlapping and duplication of efforts;

c) The application of information technology for improving and enhancing the effectiveness and efficiency of the information services wherever possible;

d) Information manpower development especially personnel trained in modern methods of information handling and training of trainers and information system managers;

e) User sensitization and enhancing the capacity of users at all levels, to access information sources and to apply information for problem solving, decision making etc.

Enhancing the propensity of children in schools to seek and use information for problem solving purposes is of particular importance;

f) The domestic book industry, the book production, publishing, marketing and distribution activities;

g) Enhancing the capacity of information systems and services to capture, process, organize and disseminate indigenous information;

h) Strengthening the National Archives through legislative measures and programmes for the collection, conservation and protection of public records;

i) Introducing community information services in public libraries, in rural and semi-urban areas in particular, in collaboration with the mass media and other agencies concerned with public service, social welfare, adult literacy, extension work etc;

j) Adoption of appropriate norms and standards in documentation and information handling so as to enhance the compatibility among information systems and services and facilitate system interconnection, exchange of information, resource sharing etc.;

k) Encouraging national information system to participate in, input to and utilize appropriate international and regional information systems, services and programmes.

11.3 EXPERIENCES OF OTHER COUNTRIES

In trying to formulate and implement national policies on information systems and services, there are factors which should serve as lessons from experiences of other countries in similar contexts.

The programmes and activities of UNESCO especially of the General Information Programme (PGI) for assisting Member States in developing their national policy on information systems and services and its implementation, have achieved satisfactory results in some countries but ran into some difficulties in others.

Some lessons learned include the following;

1) Inappropriate designation or placement of the national coordinating mechanism in the government structure may result in limiting the possibility of achieving overall coordination;

2) Absence of a formal overall national policy on information systems and services, limits the commitment and involvement of the government in the development of the national information system;

3) Low priority assigned to information matters in general and the absence of a national plan of action and commitment of public funds and resources to such programme actions are not conducive to efficient national information systems development;

4) Weak cooperation among government agencies and ministries and a tendency among them in some cases to resist coordination;

5) Misunderstanding of functions of the national coordination mechanism;

6) Inadequate budget of the coordinating mechanism, constraining its support for substantial information infrastructure development activities;

7) Inadequate staffing of the national coordination mechanism;

8) Cooperation based solely on goodwill, without an institutionalized mechanism for coordination, have not proved to be effective in most cases;

9) Coordination is difficult when effective ways and means to secure cooperation from all parties concerned do not exist or are not applied. Imposed coordination without clearly understood incentives has not proved to be effective in the long run;

10) Coordinating mechanisms that have given technical and financial support to other components of the national information systems for human resource development, research and development etc.- have generally been more successful than those who have tended to centralize these activities;

11) Coordinating and policy-making becomes much more complex and complicated when the government department in which the function is placed is also entrusted with running an information service;

12) Information for decision-making being inter-disciplinary and inter-sectoral, its gathering and channelling to top management appear to be easier where conditions are created for effective horizontal cooperation among ministries and government agencies by a coordinating mechanism;

13) The trend is to place the coordinating mechanism in a government department responsible for policy-making, such as the Prime Minister's Office, since the choice of a Ministry or structure which does not have any authority over the other ministries or structures limits the efficiency of the coordinating mechanism;

14) Successful examples of policy implementation show that the presence of documentation, library and information development of sound, stable national information systems as well as an information conscious society.

15) National efforts which have placed initial heavy stress on the hardware aspect of the national information system neglecting other important aspects, such as, manpower development, user needs, information resources development, ignoring the emerging trends in information processing and communication, miss the advantages to be gained by the applications of informatics technologies especially in providing fast access to a wider range of data and information, even those in remote locations.

16) Successful examples show that the coordinating mechanism must be staffed with dynamic, motivated, well-trained specialists who are given the necessary status, responsibilities and salaries to secure continuity and stability of the operations.

Based on all these lessons to be learned from other countries, and the experiences preceding the preparation of this work as a whole, it is recommended that Tanzania should embark on the formulation of an overall national policy on information systems and services, following the procedures which have already been discussed in this work.

ANNEX 1

SURVEY OF LIBRARIES IN TANZANIA

QUESTIONNAIRE

OFFICIAL NAME OF ORGANIZATION:

ADDRESS:

TELEPHONE: TELEX:

DATE ESTABLISHED:

NAME OF HEAD OF ORGANIZATION:

DESIGNATION:

ACTIVITIES OF ORGANIZATION:

STAFF ESTABLISHMENT OF ORGANIZATION:

ADDMINISTRATIVE:

PROFESSIONAL:

SUPPORT:

NAME OF HEAD OF LIBRARY:

QUALIFICATIONS:

OTHER LIBRARY STAFF: NUMBER: QUALIFICATIONS:

LIBRARIANS:

LIBRARY OFFICERS:

LIBRARY ASSISTANTS:

LIBRARY ATTENDANTS:

SUBJECT SPECIALIZATION:

LIBRARY HOLDINGS:

BOOKS: LINEAR METRES OF SHELVES:

CURRENT JOURNALS:

CURRENT NEWSPAPERS:

AUDIO VISUAL EQUIPMENT:

COMPUTERS: TYPE: SOFTWARES:

DATA BASES:

TYPE OF CATALOGUE:

CLASSIFICATION SCHEME:

SPECIAL COLLECTIONS:

EQUIPMENT:

PHOTOCOPIERS:

DUPLICATORS:

MICROFILM READERS:

LIBRARY EXPENDITURE (ANNUAL):

FOR STAFF:

FOR PUBLICATIONS:

TOTAL:

LOANS PER YEAR:

INSIDE LIBRARY:

OUTSIDE LIBRARY:

SERVICES:

SDI:

CAS:

DOCUMENT DELIVERY:

OTHER (Specify):

ACCESSIBILITY:

OPENING HOURS:

CONTACT PERSON:

ANNEX 2

INTERVIEW GUIDELINE

Person's status

Place of work

How often he/she uses information for decision-making

Where information is sought

Information usually found/not found

Information found and useful/not useful

Where information found

Overall view on the usefulness of information in planning and decision-making

Opinion on existing national information policies

The perceived major policy issues in the country

Strategies considered necessary for setting up a rapid formulation and adoption of a national policy on information in the the country.

ANNEX 3

NAMES OF PERSONS INTERVIEWED AND THEIR DESIGNATIONS/POSITIONS

1. Abdalla Ngororo - Director, Tanzania Information Services (Maelezo)
2. S. Mwaffisi - Principal, Tanzania School of Journalism
3. B. Musalika - Instructor, Tanzania School of Journalism
4. G. Mahizza - Director of Planning, The Presidential Commission for Planning
5. E. E. Kaungamno, Director - Tanzania Library Services Board
6. C.S. Ilomo, Chief Librarian - Tanzania Library Services Board
7. T.E. Mlaki, Director of Documentation, Tanzania National Commission for Science and Technology
8. S.E. Kazimzuri, Librarian - Presidential Planning Commission Library
9. S. Nyambele, Librarian, Ministry of Agriculture Library
10. S.S. Mbwana, Chief Librarian - Sokoine University of Agriculture
11. E. Lema, General Manager - Tanzania Publishing House
12. Seif Ismailjee, Director - International Computer Ltd (ICL), Tanzania
13. Joe Pereira, Training Manager - ICL, Tanzania
14. Patrick Michael, Head - Computer Services, Treasury
15. E. Chiduo - National Bureau of Statistics

16. E.A.Mwinyimvua, Head - School of Library, Archives and Documentation Studies - Bagamoyo, Tanzania
17. P.C. Sekimang'a, Archivist - Tanzania National Archives
18. T.Kameka - National Institute for Correspondence
19. Charles Irigo - Audio Visual Institute
20. Dr. J.B. Newa, Director - University of Dar es salaam Library
21. Gordian Mukiza, Programme Coordinator (NEIDA) - Tanzania National UNESCO Commission
22. J. Kalugula - Institute of Carriculum Development
23. E.L.A. Lukwaro, Acting Head - Tanzania National Documentation Centre
24. E.M. Dallota, Head - Reader Services Division, TLSB
25. Rodrick Moshi Library Officer In Charge - Rural Adult Education Libraries
26. Gladness Mziray - Member of the National Executive Committee
27. M. Minja, Documentalist - Tanzania Industrial Research and Development Organization
28. N. Ntabaye, Documentalist - Tanzania Industrial Studies and Consulting Institution
29. Margaret Kasembe, Training Officer - TLSB

BIBLIOGRAPHY

1. Abidi, S.A.H and Hutteman, L. (eds) 1990. Development of a National Information and Documentation Network for Uganda. Papers of the seminar held in Kampala 1 - 9 March 1990. Bonn and Kampala.

2. Akhtar, Shahid (ed), 1990. National Information and Informatics Policies in Africa. Report and Proceedings of a Regional Seminar held in Addis Ababa, Ethiopia 25 November - 1 December, 1988. Ottawa: IDRC.

3. Atherton, Pauline 1975. A handbook for information systems and services. Paris : UNESCO

4. Barry, L. Y (ed) 1975. Tanzania in maps. London: University of London Press.

5. Borne, C 1975. Planning for a national research information centre (a report for the United Republic of Tanzania Paris: UNESCO

6. Cronin, Blaise 1981. The marketing of library and library and information services. A reader in Aslib Reader Series. London: Aslib.

7. Gray, John 1988. National information policies; problems and progress. London: Mansell Publishing Ltd.

8. Hornby, A. S 1989. Oxford advanced learners dictionary of current English. Fourth edition. Oxford University Press.

9. Huttemann, Lutz (ed) 1988. Management of information and documentation network in Zambia. Papers of the workshop held in Lusaka, 15 - 24 February 1988. Bonn and Lusaka.

10. Huttemann L. and Inganji F. (eds) 1986. Use of computers in information handling, a training workshop 21 April - 2 May 1986, Nairobi, Kenya. Bonn and Addis Ababa.

11. Ilomo, C. S 1988. Current library training situation in Tanzania. In: National workshop on training of information, library and archives personnel in Tanzania. Dar es salaam 4-6 May 1988.

12. Ilomo C. S 1976. Library development in Tanzania mainland. Dar es salaam: Tanzania Library Services

13. Ilomo C. S (n.d). Problems involved in developing a national information system for development. Occasional paper no. 7 . Dar es salaam: Tanzania Library Services Board.

14. Inganji F. 1988. Building science and technology information system in developing countries. Addis Ababa:PADIS.

15. Jamhuri ya Muungano wa Tanzania 1991. Hali ya uchumi wa taifa katika mwaka 1990. (Tanzania Economic Survey 1990). Tume ya mipango. Dar es salaam: Government Printer.

16. Jamhuri ya Muungano wa Tanzania 1989. Mpango wa pili wa maendeleo wa miaka mitano 1988/89 - 1992/93. Kitabu cha pili - programu za mipango (Tanzania, second union 5-year economic development plan 1988/89 - 1992/93. Programmes). Dar es salaam: Government Printer.

17. Jamhuri ya Muungano wa Tanzania 1989. Mpango wa pili wa muungano wa maendeleo wa miaka mitano 1988/89 - 1992/93.kitabu cha kwanza, shabaha na malengo. (Tanzania second union 5-year economic development plan: objectives) Dar es salaam: Government Printer.

18. Kamwela, N. A 1986. The policy and practice of adult literacy. Dar es salaam: Dar es salaam publishers and sales agency.

19. Kaungamno E. E 1975. The functions and activities of Tanzania Library Services within the NATIS concept. UNESCO Bulletin for Libraries 29 (5): 243.

20. Kaungamno E. E and Ilomo C.S. 1979. Books build nations vol.1. Library services in West and East Africa, with a foreword by Mwl. J.K. Nyerere. Dar es salaam and Nairobi: TLS/Transafrica.

21. Kaungamno E. E and Ilomo C. S 1979. Books build nations vol.2.Library Services in Tanzania. Dar es salaam and Nairobi: TLS/Transafrica.

22. Kaungamno E.E and Ilomo C.S 1989. Libraries: Vital factors in development. Tanzania Library Services Board Silver Jubilee(1964-1989). Dar es salaam: Education Services Centre Ltd.

23. Keya, S. O et al, 1989. Guidelines for the formulation of research project proposals. Nairobi: IDRC.

24. Kisiedu, C. 1990. "National information policies, plans and systems in sub-saharan Africa". In: Report and proceedings of the regional seminar on information and informatics policies in Africa, Addis Ababa 25 Nov. - 1 Dec. 1988. edited by S. Akhtar, Ottawa:IDRC.

25. Mascarenhas O. C 1989. Coordination of networks. In: Establishment of a national information and documentation network in Tanzania. Papers of the seminar held in Dar es salaam 16-24 Feb. 1989. Edited by O.C. Mascarenhas and Lutz Huttemann. Bonn and Dar es salaam.

26. Mlaki, T. E 1981. Bibliographic control of the current national literature of Tanzania. MLS thesis. Loughborough University of Technology. Loughborough UK.

27. Mlolwa N. and Sawe D. 1988. Policy-makers and planners' views on information/informatics policies in Tanzania. In: National information and informatics policies in Africa. Report and proceedings of the seminar held in Addis Ababa 25 Nov.- 1 Dec. 1988. Edited by S. Akhtar. Ottawa: IDRC.

28. Montviloff, Victor 1990. National information policies. A handbook on the formulation, approval, implementation and operations of a national policy on information. G.I.P and UNISIST/UNESCO: Paris.

29. Mpogolo, Z. J 1985. Post literacy in Tanzania. Dar es salaam: African Publishers.

30. Mwinyimvua E. A 1983. Case studies in information work. Information requests handled by TANDOC. Dar es salaam: Tanzania National Documentation Centre.

31. Mwinyimvua, E. A and Habi R. J. M 1989. "Cooperative development of manpower for a national information and documentation in Tanzania". In: Establishment of a national information and documentation network in Tanzania. Papers of the seminar held in Dar es salaam 16 - 24 Feb. 1989.

32. Mwinyimvua E. A (ed) (1984) 1990. Directory of Libraries in Tanzania. Dar es salaam : Tanzania National Documentation Centre.

33. Multi-party system confirmed 1992. In: Tanzania Daily News, Thursday, February 20, 1992.

34. Neelameghan, A. 1989. a national policy on information systems and services for Uganda. a proposal. Kampala : Uganda. (Restricted)

35. Neelameghan, A. 1992. Information for small enterprises. Bangalore: Institute of Information studies.

36. Pratt, C. 1973. The administration of economic planning in a newly independent state: The Tanzania experience. In : socialism in Tanzania, edited by I. Shivji.

37. Ramani, K. V. and Khalid, S. 1989. Networking. Development of research and training networks in a changing world. Malaysia: APDC.

38. Samaha, E. 1978. A study on the application of scientific and technological information in development. Field study in Tanzania. Paris: UNESCO.

39. Sekimang'a, D. A. 1990. List of practising librarians, documentalists and archivists in Tanzania. Dar es salaam: Tanzania National Documentation Centre.

40. Sheya, M. S. and Koda, G. R. 1987. "The state of informatics in Tanzania. Policy issues and strategies". In: Official report on the seminar on the contribution of informatics to economic development held in Arusha, Tanzania, 10-12 Aug. 1987.

41. Tanzania in figures 1990. Dar es salaam: National Bureau of Statistics.

42. Tanzania Government, 1990. Tanzania education and training statistics 1988. Dar es salaam: Tanzania Bureau of Statistics.

43. Tanzania Library Services Board 1972. National policies of Tanzania. Dar es salaam : The Board.

44. Tanzania Government 1979. An act to establish the Tanzania Industrial Research Development Organization. Dar es salaam : the Government Printer.

45. Tanzania Government 1968. An Act to establish Tanzania Industrial, Studies and Consulting Organization. Dar es salaam: The Government Printer.

46. Tanzania Government 1976. An Act to establish the Tanzania Scientific Research Organization. Dar es salaam: The Government Printer.

47. "Time for multi-party system. Mwinyi calls for endorsement of the NEC proposal". In: Tanzania Daily News, Wednesday,Feb. 19, 1992.

48. Tordoff, W.1967. Government and politics in Tanzania. Nairobi, East African Publishing House.

49. United Republic of Tanzania, 1990. National agricultural and livestock research masterplan. Dar es salaam: Ministry of Agriculture (Restricted document).

50. United Republic of Tanzania, 1985. Basic education statistics in Tanzania (1980-1984). Dar es salaam: Ministry of Education.

51. United Republic of Tanzania, 1985. The National Science and Technology Policy for Tanzania. Dar es salaam: Ministry of Planning and Economic Affairs.

52. United Republic of Tanzania, 1988. Seminar on the contribution of informatics to economic development held in Arusha,10-12 Aug. 1987. Official report. Dar es salaam: Ministry of Finance, Economic Affairs and Planning.

53. United Republic of Tanzania, 1968. An Act to establish the Tanzania National Scientific Research Council. Dar es salaam : The Government Printer.

54. United Republic of Tanzania, 1988. Population census: Preliminary report. Dar es salaam: National Bureau of Statistics.

55. "Watanzania wanapenda kusoma lakini.." (Tanzanians like to read but.. In: Uhuru Newspaper, Oct.1, 1991) Uhuru. Jumanne, Oktoba 1, 1991.

56. Wesley-Tanascovic, I. 1985. Guidelines on national information policy.(scope,formulation and implementation). Paris: UNESCO.

57. Wilkinson, T. S. and Bhandarkar, P. L. 1977. Methodology and techniques of social research. Delhi: Himalaya Publishing House.

58. Wosawo, D. 1973. The establishment of a science policy organization (A report for the United Republic of Tanzania). Paris: UNESCO.

59. Zell, H. 1975. Publishing in Africa in the seventies. Problems and prospects. In: Acquisitions from the third world edited by D.Clarile. London: Mansell.