



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

## FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)

UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

Distr.  
RESTRICTED  
UNIDO/IS/R.21  
28 February 1986  
ENGLISH

152

NATIONAL COUNTERPART REPORT  
ON THE INDUSTRIAL AND TECHNOLOGICAL  
INFORMATION SYSTEMS IN TANZANIA\*

Prepared by

Winifred N.A. Nyonyi\*\*

\* The views expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been reproduced without formal editing.

\*\* Tanzania Industrial Research and Development Organization, Dar es Salaam, Tanzania.

## TABLE OF CONTENTS

	PAGE
CONTENTS	i
ACKNOWLEDGEMENTS	iii
EXECUTIVE SUMMARY	1
1. INTRODUCTION	5
2. INFORMATION SYSTEMS	7
2.1. DISCUSSION	7
2.1.2. List of Established and potential Information Systems and services	
2.2. Existing & potential information services & networks	23
2.2.1. The Tanzania Library Services	
2.2.2. The Health Information Services	
2.2.3. The Tanzania Literature Services	
2.2.4. The Tanzania National Research Information Service	
3. USERS OF INDUSTRIAL AND STATISTICS INFORMATION	28
3.1. Government ministries & departments	28
3.2. Medium Scale Industries	34
3.3. Consulting Organizations	37
3.4. R&D personnel	38
3.5. Small Scale Industries	39
4. INFORMATION NEEDS & SERVICES REQUIRED	41
4.1. Information needs	41
4.2. Information Services required	42
4.2.1. Consultancy	
4.2.2. Technical Inquiry Service	
4.2.3. Industrial seminars	
4.2.4. Extension Services	
4.2.5. SDI	
4.2.6. Audio-visual aids	
4.2.7. Translation Services	
4.2.8. Publications	

	PAGE
5. MANPOWER REQUIREMENTS AND TRAINING NEEDS	49
5.1. Present status	49
5.2. Available training facilities	51
5.3. Professionals in specialized Information systems	53
5.4. Manpower requirements	57
5.5. Training needs recommended	58
References	60
Annexes	
Annex I	62
Annex II	64
Annex III	66
Annex IV Acronyms	70

#### ACKNOWLEDGEMENTS

The author wishes to acknowledge the co-operation received from all persons who in one way or another contributed to the initiation and completion of this project. A special vote of gratitude goes to the Director General of TIRDO, Mr. C.L. Tarimu for permitting me to proceed with the project; the UNIDO-TIRDO project personnel for their sustained interest in the progress of the project and to my colleagues at TANDOC, TIRDO, TISCO and TANRIS for their invaluable discussions. The services of Ms F. Swai, Information Department Secretary deserve special mention for bringing the report into a presentable form.

## EXECUTIVE SUMMARY

The purpose of this project was to assist Tanzania, both in the establishment of INTIB national focal point and in strengthening national information systems and services by formulating answers to the following questions:

1. What are the existing and potential national information systems, services and networks?
2. Who are the existing and potential users of industrial and statistics information?
3. What is the nature of the information needs and services required by INTIB users?
4. What are the manpower requirements and training needs for the national information systems?

Despite time constraints, answers to these questions have been compiled using available documentation, structured questionnaire and interviews in addition to personal experiences and knowledge of the author.

Based on this approach; the findings are summarized as follows:

1. There are about 40 specialized libraries or information units whose thrust is to provide for the technical information needs of users in a given sector. Many of the services are geared to the institutional personnel and some of these centres are restricted even where the centre's collection is the only one of its kind. There are few nation-wide information services. Even

at institutional level, many services do not stretch beyond document loan, reference and photocopy as the data in chapter 2 presents. The reason is founded both in the professional level of the worker and the circumstances of the working environment. Some very technical systems are manned by undergraduates whose understanding even for mere scientific concepts is extremely limited.

Elaborate Library and information dissemination services exist for the public sector through the National Central Library and the National Documentation centre respectively. Research information service exists for all sectors while the agricultural research and training institutions possess a specialized nation wide service based at the Sokoine University of Agriculture. In the health sector, services exist and efforts to institutionalize a network are in the pipeline. The focal point is the medical library at Muhimbili whose first specialized medical information worker is being trained at the School of Library and Information management, in Los Angeles.

2. Industrial and Statistics information are used invariably. At Government level, the various Ministries and Departments need to plan, formulate policies and make decisions, especially during contract

negotiations. Sources of such information have been foreign consultancy firms, international organizations and technology owners.

Those agents involved in industrial promotion and establishments, such as the Ministry of Industries and Trade, the national, regional and product development corporations, compose a specialized group of users. Their needs are highly consultative in nature. The Small Industries Development Organization (SIDO) belongs to this category of users. Research and Development personnel, industries, prospective entrepreneurs and extension agents make the bulk of active users of industrial information.

3. All the information needs are in search for techniques, technology or its evaluation to suit a particular set of conditions or a given environment. To this end a high degree of information consultancy is required as a priority complemented by other means of supplying problem oriented solutions or current awareness services. Industrial seminars could enhance co-operation among enterprises by strengthening communication channels.

4. The manpower situation in the specialized centres (Table 4) reflects that less than 30% of positions here as opposed to 75% (UNESCO Standards) are held by post-



graduate professionals. Of this 30%, a very small fraction is composed of qualified information specialists; by profession or experience. There is therefore the need to upgrade many of the librarians to postgraduate level. In order to strengthen the services of the industrial sector, some training which the information specialists consider relevant has been recommended for a reasonable number of staff.

## CHAPTER 1

### INTRODUCTION

#### 1.1. TERMS OF REFERENCE

In response to UNIDO's Job Description RP/RAF/85/621/17-02, (Annex 1) the period from July 1<sup>st</sup> to 31<sup>st</sup> August 1985 was devoted by the author to perform preparatory work on the possibilities of establishing a local INTIB focal point as well as in strengthening national information systems and services. The terms of reference were as follows:

To identify in the home country, at national level the followings:

1. Existing and potential information systems, services and networks;
2. Identification of existing and potential users of Industrial and statistics information;
3. Identification of the nature of information needs and services required by INTIB users;
4. Assessment of manpower requirements and training needs for the national information systems; and
5. Preparation of schedule of the UNIDO experts field mission in the country.

#### 1.2. SCOPE AND LIMITATIONS

In the time schedule provided for this assignment, it was not useful to survey all the existing and potential information systems in all sectors, therefore the author limited the survey to information systems which were deemed of relevance to

industrial promotion and development but with services at a national level. As no training facility exists in the country for production of qualified librarians, even at the diploma level there is clearly a shortage of qualified professionals in the field. Manpower requirements and training needs have been considered for all those specialized information systems whose resources could be mobilized to support the industrial information network. Estimates here have been kept within the limits of the national manpower development plans.

### 1.3. METHODOLOGY

Relevant documentation concerning the project was reviewed prior to questionnaire development. The questionnaires were to update the known information and gather additional facts as required by the terms of reference. A total of 5 Government ministries, 42 libraries cum information centres including one potential library school, and, 50 industrial enterprises and miscellaneous institutions engaged in consultancy, investment or provision of technical services were selected for the survey. Two separate questionnaires were used, one for the information centres, the other for potential information users. Time did not allow for pre-testing of these instruments but this was not considered a handicap as background information and communications about the target institutions were available at the disposal of the mission. A small proportion of the institutions was visited and interviews held to discuss required issues. (see Annex 2).

## CHAPTER 2

### 2.0. EXISTING NATIONAL AND POTENTIAL INFORMATION SYSTEMS & SERVICES

#### 2.1. DISCUSSION

The large number of information systems that provide documentation services in Tanzania is a clear reflection of the potential attached to the role of information in strengthening the daily activities of those institutions which established them. For despite the fact that the Library Development Policy has yet to be formalised, and that the National Information Policy is still unformulated, of the hundreds of collections of library units, there are not less than fifty well established information systems whose services target clients all over the nation. These include one national public library which operates fifteen regional and three district level library units. There is one comprehensive research library at the University of Dar es Salaam with autonomous branches at the Sokoine University of Agriculture in Morogoro, and at the Faculty of Medicine Library. Muhimbili which is also focal point designate as the national medical library. There are some forty technical library cum information centers providing specialized information services to the clients of those institutions in accordance to their acts of establishment.

Furthermore about twenty five small units cater for the needs of the agricultural sector fifteen meet the needs of the medical, ten for community development, five for theology and over fifty are found in the various educational establishments. Many of

these operate nothing in the name of information service beyond document loans and reference, while practically all lack adequately trained manpower to establish information services. For the majority, facilities such as microfilm and microfiche readers, modern photocopiers, stencil scanners, overhead projectors etc. complemented by equipment service centres are limited or non-existent.

For purposes of this report, the national public service library together with its incumbent national documentation center (TANDOC), the research library, and the technical libraries cum information centers are considered. This has been done to streamline between centers which are highly specialized but serve only a limited clientele e.g. institutional staff in a given industry, from those whose thrust is to provide for the information needs of identified users all over the republic, hence the national significance. Documentation centers under formation such as that of the Metal Engineering Industries Development Association have not been audited. For each of the centers identified, a full description of the information service includes the following salient points:

- a serial number;
- name of the Parent Organization and acronym;
- name in full of the information service if any;
- address;
- manpower available, and its qualification;
- activities of the Organization;
- subject coverage;
- services provided;
- classification tool;
- information products (a measure of information dissemination through publications);
- special features (focal points of existing and potential networks, status in the nation);

2.1.2. ESTABLISHED AND POTENTIAL INFORMATION SYSTEMS & SERVICES

- 001 AIR TANZANIA CORPORATION (ATC), Technical Library  
P.O. Box 543, Dar es Salaam,
- Available manpower: Professional -, Para Professionals 1  
Activities: Operation and maintenance of ATC  
aircraft fleet  
Subjects Covered: Aeronautical engineering, and  
Air transport operations  
Classification Tool: L.C.  
Services: Reference searches, Reprographic and  
document loans  
Information Products: Twiga News (0)  
Special Feature: The only information system dedicated  
to the operations of air transport.
- 002 ARUSHA INTERNATIONAL CONFERENCE CENTRE (AICC), Library  
P.O. Box 3081, Arusha,
- Available Manpower: Professionals -, Para professionals 3  
Activities: Facilities and services for holding of  
International & national conferences,  
meetings, seminars and the like  
Subjects Covered: Social Sciences and Law  
Classification Tool: UDC  
Services: Reference and document loans  
Information Products: None  
Special Feature: The only system established to cater  
for the needs of conferences & seminars  
at international levels.
- 003 AUDIO - VISUAL INSTITUTE (AVI), Library  
P.O. Box 9310, Dar es Salaam,
- Available Manpower: Professionals 2, Para-professionals 3  
Activities: Film making & Film library  
Subject Coverage: Education  
Classification Tool: DDC  
Services: Viewing facilities, lending of films  
and archives  
Information Products: Film catalogue, Annual reports and  
Accession List  
Special Feature: The only audio-visual institute  
which services institutions.
- 004 BANK OF TANZANIA (BOT), Library  
P.O. Box 2939, Dar es Salaam
- Available Manpower: Professionals -, Para professionals 5

**Activities:** Central Banking and Issuing of Currency  
**Subject Coverage:** Economics, Banking and related services  
**Classification Tool:** UDC  
**Services Provided:** Reference only  
**Information Products:** Bank of Tanzania Publications viz: Economic Bulletin; BOT: its roles and functions; Central Banking in Socialist transformation of Tanzania; Credit for development of Agriculture in Tanzania.  
**Special Feature:** Burnt down in May 1984 but under re-establishment.

005 BOARD OF EXTERNAL TRADE (BET)  
 P.O. Box 5402, Dar es Salaam,

**Available Manpower:** Professionals 1, Para professionals 1  
**Activities:** Trade promotion  
**Subjects Coverage:** Trade (foreign)  
**Classification Tool:** TIC, SITC  
**Services Provided:** Advisory, market research, photocopy, m/fiche printer services, Trade fairs and all Trade promotional activities  
**Information Products:** Market Newsletter for Agricultural Commodities, Market Prices and Trends Trade Briefs  
**Special Feature:** National system specializing in foreign trade information.

006 BOARD OF INTERNAL TRADE (BIT), Library.  
 P.O. Box 883, Dar es Salaam

**Available Manpower:** Professionals 1, Para professionals 2  
**Activities:** Trade  
**Subject Coverage:** Trade (domestic); Accountancy, Management, Marketing and Commerce  
**Classification Tool:** DDC  
**Services Provided:** Reference, advisory and document loans  
**Information Products:** Internal publications.

007 BRITISH COUNCIL, Library  
 P.O. Box 9100, Dar es Salaam

**Available Manpower:** Professionals 1, Para professionals 4  
**Activities:** Promotion of the English Language and knowledge of Britain through administration of Educational aid programmes. Development of closer cultural relations  
**Subject Coverage:** General but educational in nature

Classification Tool: DDC  
 Services Provided: Document loans, photocopying service,  
 film shows, reference, interlibrary loan  
 Special Projects: Book presentation scheme to educational  
 institutions and libraries  
 Information Products: Film catalogue (A)  
 BLLD promotional brochures  
 Special Features: Special library  
 Online information retrieval through  
 the British Library

008 BUILDING RESEARCH UNIT (BRU)  
 P.O. Box 1964, Dar es Salaam

Available Manpower: Professionals -, Para professionals 2  
 Activities: Building research  
 Subject Coverage: Building Documentation  
 Classification Tool: UDC  
 Services Provided: Document loans and sales, Photocopy,  
 and Advisory services  
 Information products: BRU Technical Reports,  
 Monthly Accessions List  
 Publications price index  
 Special Feature: Special library.

009 CAPITAL DEVELOPMENT AUTHORITY (CDA) Technical Library,  
 P.O. Box 1 or 913, Dodoma

Available Manpower: Professionals -, Para professionals 5  
 Activities: Development of the new capital at  
 Dodoma  
 Subject Coverage: Buildings and Construction,  
 Environmental conservation and  
 development  
 Classification Tool: DDC  
 Services Provided: Document loans and sales, reference  
 services  
 Information Products: Bibliographies,  
 Special Features: Special library.



010 COLLEGE OF AFRICAN WILDLIFE MANAGEMENT, MWEKA  
P.O. Box 3031, Moshi

Available Manpower: Professionals -, Para professionals 2  
Activities: Research and Teaching  
Subject Coverage: Wildlife development & preservation  
Information Products: Dissertations  
Special Features: Special library.

011 COMMUNITY DEVELOPMENT TRUST FUND OF TANZANIA (CDTF)  
P.O. Box 9421, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Rural community development projects  
Subject Coverage: Economics and Agriculture  
Classification Tool: DDC  
Services Provided: Document loans and reference  
Information Products: Annual reports  
Hiari Newsletter  
Special Features: Special library

012 DIRECTORATE OF METEOROLOGY  
P.O. Box 3056, Dar es Salaam

Available Manpower: Professionals -, Para professionals 2  
Activities: Meteorological and Weather Forecasting  
Information  
Subject Coverage: Meteorology, climatology, weather  
forecasting and allied disciplines  
Classification Tool: DDC  
Services Provided: Advisory, reference and document loans,  
SDI to pilots, Sea captains,  
agriculturalists, Industrialists and  
researchers  
Information Products: Daily Radio weather forecasts  
Status: Special library.

013 EASTERN AND SOUTHERN AFRICA MANAGEMENT INSTITUTE (ESAMI),  
library,  
P.O. Box 3030, Arusha

Available Manpower: Professionals 2, Para professionals 2  
Activities: Management training, research and  
consultancy  
Subject Coverage: Management, Economics, Accountancy,  
Commerce and Trade  
Classification Tool: DDC  
Services Provided: Document loans, references, photocopy  
Training in information management  
Information Products: ESAMI Management Review  
ESAMI Consultancy Programmes  
ESAMI Training Programmes  
Institute's Reports  
Special Feature: Special library.

014 FISHERIES DIVISION (LIBRARY),  
MINISTRY OF NATURAL RESOURCES AND TOURISM  
P.O. Box 2462, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Development of fisheries industry in  
Tanzania  
Subject Coverage: Fisheries Sciences and Technology  
Boat building and marine engineering  
Classification Tool: UDC  
Services Provided: Document loans, Reference  
Information Products: Fisheries statistics and  
Bibliographies

015 FOREST DIVISION (LIBRARY),  
MINISTRY OF NATURAL RESOURCES AND TOURISM  
P.O. Box 426, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Research and development of forestry  
and soil conservation  
Subject Coverage: Forestry  
Classification Tool: CSDCF  
Services Provided: Advisory, Document loans, Reference  
Information Products: Annual Reports, Accession Lists  
Special Feature: Special & Institutional establishment

016 INSTITUTE OF DEVELOPMENT MANAGEMENT (IDM), Library  
P.O. Box 1, Mzumbe Morogoro

Available Manpower: Professionals 4, Para professionals 7  
Activities: Training, Research and Consultancy  
Subject coverage: Management, Accountancy and  
Legislation and Administration  
Classification Tool: DDC  
Services Provided: Advisory and Document Loans, Audio-  
visual and reprographic services,  
printing and bindery  
Information Products: IDM Annual reports, Dissertations

017 INSTITUTE OF FINANCE MANAGEMENT (IFM), Library  
P.O. Box 3981, Dar es Salaam

Available Manpower: Professionals 4, Para professionals 14  
Activities: Training and Research  
Subject Coverage: Financial management and allied  
disciplines  
Classification Tool: DDC  
Services Provided: Advisory, document loans, reference,  
photocopying and secretarial services  
Information Products: -  
Special Feature: Institutional establishment

018 INSTITUTE OF PRODUCTION INNOVATION (IPI)  
University of Dar es Salaam  
P.O. Box 35075, Dar es Salaam

Available Manpower: Professionals -, Para professionals -  
Activities: Consultancy, and prototype machinery  
development  
Subject Coverage: Mechanical engineering  
Machinery  
Appropriate technology  
Services Provided: Consultancy  
Prototype design and production  
Information Products: Technical papers  
Special Feature: Founder partner of TIRDO IFI  
Professional Club of Information  
Services for and within industries,  
Information resources under  
establishment

019 MINISTRY OF AGRICULTURE AND LIVESTOCK DEVELOPMENT, Library,  
P.O. Box 2066, Dar es Salaam

Available Manpower: Professionals -, Para professionals 6  
Activities: Development of the Agricultural  
sector  
Subject Coverage: Agriculture, Post harvest and Food  
technology  
Classification Tool: UDC  
Services Provided: Document loan, reference  
Information Products: Research Institute's reports  
Training Institute's reports,  
and Annual Reports  
Special Feature: Focal point for networking with all  
agricultural training and research  
institutional libraries up to 1980.  
Potential centre for AGRIS liason officer

020 MINISTRY OF INDUSTRIES and TRADE, Library  
P.O.Box 9503, Dar es Salaam

Available Manpower: Professionals -, Para Professionals 1  
Activity: Development of the industrial sector  
and trade  
Subject Coverage: Industries, Trade and Industrial  
statistics  
Classification Tool: UDC  
Services Provided: Reference, photocopying  
Information Products: Annual reports of Parastatals  
Industries Reports, Industrial survey  
reports  
Status: Potential Information resource  
A national industrial statistics data  
bank being established.

021 MINISTRY OF LANDS, NATURAL RESOURCES & TOURISM  
GAMES DIVISION, Library  
P.O. Box 1994, Dar es Salaam

Available Manpower: Professionals -, Para professionals 2  
Activities: Promotion of Wildlife preservation  
Subject Coverage: Game, laws and Wildlife  
Classification Tool: DDC  
Services Provided: Document loans, reference and advisory  
Information Products: Annual reports

022 MINISTRY OF PLANNING AND ECONOMIC AFFAIRS, Library  
P.O. Box 9242, Dar es Salaam

Available Manpower: Professionals 1, Para professionals 2  
Activities: Planning the national economy  
Subject Coverage: Economics, Planning, statistics, commerce/trade and Government legislations  
Classification Tool: DDC  
Services Provided: Document loans, Reference and limited literature searches  
Information Products: Economic surveys (A), Annual Plan, Five year Development Plans, National Economic Strategy Plans and Programmes  
Accession lists, and S&T Policies.

023 MINISTRY OF WATER, ENERGY AND MINERALS, Library  
P.O. Box 9153, Dar es Salaam

Available Manpower: Professionals -, Para professionals 3  
Activities: Development of Water Schemes and energy distribution grids  
Subject Coverage: Water engineering, hydro-power and related disciplines  
Classification Tool: DDC  
Services Provided: Advisory, document loans and reference  
Information Products: Technical reports on water research, hydropower development and water master plans

024 MUHIMBILI MEDICAL CENTRE (MMC), Library  
P.O. Box 65012, Dar es Salaam

Available Manpower: Professionals 3, Para professionals 8  
Activities: Training and research  
Subject Coverage: Medicine and community health  
Classification Tool: DDC  
Services Provided: Document loans, reference, photocopy Services, SDI  
Information Products: Newsletter (Q), Annual Reports, Bibliographies

- Special Feature: The largest of three medical libraries, hence the national medical library.  
Focal point for the Health literature services network which is in the pipeline.
- 025 NATIONAL ARCHIVES OF TANZANIA  
P.O. Box 2006, Dar es Salaam
- Available Manpower: Professionals -, Para professionals 2  
Activity: Research and preservation of archival materials
- Subject Coverage: Archival Science  
Classification Tool: DDC  
Service Provided: Advisory, Document loans, reference  
Information Products: Accession lists, Annual reports, Bibliographies  
Special Feature: National Archives
- 026 NATIONAL CENTRAL LIBRARY (TLS)  
P.O. Box 9283, Dar es Salaam
- Available Manpower: Professionals 43, Para professionals 75  
Activities: Public library service, Publishing, Training, Documentation, National Bibliographic services and information consultancy
- Subject Coverage: General  
Classification Tool: DDC  
Services Provided: Document loans, reference, research, Information search, question and answer, referral, consultancy, photocopy & training to certificate level
- Information Products: Occasional Papers  
Annual reports  
Agricultural Abstracts for Tanzania (2xyear)  
Education Abstracts for Tanzania (2xyear)  
Industrial Abstracts for Tanzania (2xyear)  
Tanzania National Bibliography (M)  
Union List of Periodicals  
Directory of Libraries in Tanzania  
Special bibliographies
- Special Feature: This is the largest public service library with branches in 15 regions of the republic and 3 districts. Operates centralized acquisition and processing and operates a formalized inter library loans scheme throughout its branch libraries. Is a nucleus of highly trained manpower.

027 NATIONAL DEVELOPMENT CORPORATION (NDC), Documentation Centre,  
P.O. Box 2669, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Promotion of medium to large scale manufacturing and processing industries  
Subject Coverage: Industrial economics, industrial technology, Trade  
Classification Tool: DDC  
Services Provided: Reference and document loan  
Information Products: Jenga Journal, Annual reports  
Special Feature: Highly trained and motivated manpower required to establish aggressive information service to industries promoted by NDC.

028 NATIONAL INSTITUTE FOR PRODUCTIVITY (NIP), Library  
P.O. Box 2021, Dar es Salaam

Available Manpower: Professionals 1, Para professionals 2  
Activities: Management Consulting Services, Manpower Development and Productivity improvement  
Subject Coverage: Personnel, General and Consulting Management  
Classification Tool: DDC  
Services Provided: Advisory and document loan  
Special Feature: Requires highly motivated information officer to establish aggressive information services in line with activities of the NIP.

029 SMALL INDUSTRIES DEVELOPMENT ORGANIZATION (SIDO)  
P.O. Box 2479, Dar es Salaam

Available Manpower: Professionals -, Para professionals -  
Activities: Promotion and establishment of small scale industries in Tanzania  
Subject Coverage: Small Industry, appropriate technology  
Classification Tool: DDC  
Services Provided: Advisory, extension services, information repackaging, consultancy  
Publications: Annual Reports, Pamphlets & Booklets, Small Industry Census, Manuals (in pipeline)  
Special Feature: A very elaborate extension service exists to meet the situation specific information needs of small scale industries. There are 3 extension officers per region.  
Information system under re-organization for effectiveness.

030 STATE MINING CORPORATION (STAMICO), Library  
P.O. Box 4959, Dar es Salaam

Available Manpower: Professionals -, Para professionals 2  
Activities: Mining and promotion of mineral  
processing  
Subject Coverage: Mineralogy; Mining and Petrology  
Classification Tool: DDC  
Services Provided: Advisory  
Information Products: Annual reports  
Special Feature: Potential information service for the  
mining sector

031 TANZANIA BUREAU OF STANDARDS (TBS), Library  
P.O. Box 9524, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Standardization, Quality Control and  
Metrology  
Subject Coverage: Standards, Standardization and quality  
control  
Classification Tool: UDC  
Services Provided: Document loans and sales,  
Bibliographic Searches and reference.  
Printing facilities available  
Information Products: Announcer (Q)  
Annual reports  
Tanzanian Standards and Specifications  
(IRR)  
Special Feature: National authority on standards and  
standardization

032 TANZANIA ELECTRIC SUPPLY COMPANY LTD (TANESCO), Library  
P.O. Box 9024, Dar es Salaam

Available Manpower: Professionals -, Para professionals 4  
Activity: Implementation of national  
electrification schemes  
Classification Tool: DDC  
Services Provided: Reference, Document loan, SDI to  
TANESCO training institutes and  
regional branches  
Information Products: TANESCO Bulletin, Annual reports,  
Technical Reports  
Special Feature: Operates a publication exchange scheme  
with foreign institutions.

033 TANZANIA FOOD AND NUTRITION CENTRE (TFNC), Library  
P.O. Box 977, Dar es Salaam

Available Manpower: Professionals -, Para professionals 1  
Activities: Research and Coordination of nutrition  
activities  
Subject Coverage: Food technology and nutrition  
Classification Tool: DDC

Services Provided: Advisory and Document loans, reference  
Information Products: Data Reports, Lische Journal, TFNC Bibliography, Project Reports Annual reports.

034 TANZANIA HARBOURS AUTHORITY (THA), Library  
P.O. Box 9184, Dar es Salaam

Available Manpower: Professionals 1, Para professionals 3  
Activities: Development of harbours and ports and provision of harbour services  
Subject Coverage: Port industry  
Classification Tool: DDC  
Services Provided: Advisory, Document loans & photocopy  
Information Products: Accession Lists, THA annual reports  
Special Feature: Specialized library, Potenteial information service to port industry.

035 TANZANIA INDUSTRIAL RESEARCH AND DEVELOPMENT ORGANIZATION (TIRDO), Information Department  
P.O. Box 23235, Dar es Salaam

Available Manpower: Professionals 3, Para professionals 1  
Activities: Technical Services to Industry, Industrial research and Information Services  
Subject Coverage: Industrial Technology and allied disciplines  
Classification Tool: ISIC, and Inhouse system: TIPS  
Services Provided: Q-A, Technical Inquiry Service, Extension Services, Professional Workshops, SDI, CAS, Document loans reference and photocopy  
Information Products: Annual Reports, Directory of Technical Information resources in Tanzania, TIRDO Technical Reports TIRDO Periodical Holdings (A) TIRDO Newsletter (Q) Workshop Proceedings (Q) CAS (IRR)  
Special Feature: Operates industrial extension visit programmes for identification of users operational problems and information needs  
Has established TIS.  
Is Secretariate to the forum of information exchange by industries; the Professional Club Meeting.  
Has established 20 contacts with foreign related institutions for purposes of information exchange.  
Intensive user of UNIDO-INTIB services.



036 TANZANIA INDUSTRIAL STUDIES & CONSULTANCY ORGANIZATION  
(TISCO), Information Centre  
P.O. Box 2650, Dar es Salaam

Available Manpower: Professionals 3, Para professionals 3  
Activities: Engineering, Industrial and  
Management Consultancy  
Subject Coverage: Industrial and Technological  
development, and Feasibility Studies  
Classification Tool: DDC and ISIC  
Services Provided: Reference, document loan, Q - A  
Information Products: Directory of products and  
enterprises in Tanzania  
TISCO feasibility Reports  
Handbook for the Promotion of  
Industrial Projects  
Manual for Investors in Tanzania  
TISCO Newsletter (in pipeline) (Q)  
Special Feature: Intensive user of UNIDO-INTIB  
Services,  
Potential contributor to the industrial  
information network  
Services currently meet the needs of  
inhouse consultants  
Report depository.  
Has good foreign contacts.

037 TANZANIA NATIONAL SCIENTIFIC RESEARCH COUNCIL  
(UTAFITI),  
TANZANIA NATIONAL RESEARCH INFORMATION SERVICE (TANRIS)  
P.O. Box 4302, Dar es Salaam

Available Manpower: Professionals 3, Para professionals 2  
Activities: Research Co-ordination and promotion  
Subject Coverage: S&T policy, Agriculture, Technology  
Energy and Information Science  
Classification Tool: L.C.  
Services Provided: Advisory, photocopy services, CAS,  
Document sale  
Publications: Bulletin of Research & Information (A)  
Directory of Scientific and Technical  
Potential of Tanzania, Directory of  
Research Projects and Scientific  
Personnel  
Special Feature: This is a national focal point for  
Tanzania Research Information Services;  
The centre is also the national agent  
for National Technical Information  
Services (NTIS) of USA;  
The centre further administers SAREC  
financial assistance for the assistance  
with literature acquisition by research  
institutions;  
The Council is under transformation

into a National Commission for Science and Technology (at the time of writing) Has several contacts with foreign centres

- 038 TANZANIA PETROLEUM DEVELOPMENT CORPORATION (TPDC), Library  
P.O. Box 2774, Dar es Salaam
- Available Manpower: Professionals -, Para professionals 1  
Activities: Importation, Distribution and marketing of hydrocarbons  
Subject Coverage: Petroleum  
Services: Document loans to staff members only  
Special Feature: Potential resource of information related to petroleum and other hydrocarbons
- 039 TROPICAL PESTICIDES RESEARCH INSTITUTE (TPRI), Library  
P.O. Box 3024, Arusha
- Available Manpower: Professionals 1, Para professionals 2  
Activities: Pesticide research and development  
Subject Coverage: PESTICIDES, Agricultural entomology and engineering, chemistry and physics  
Classification Tool: DDC  
Services Provided: Advisory, Document loans, photocopy  
Information Products: TPRI Bulletin; Accessions list and Annual report. TPRI Technical reports  
Special Feature: Specialized centre, potential contributor to the industrial information network.
- 040 UNITED NATIONS INFORMATION CENTRE (UNIC)  
P.O. Box 9224, Dar es Salaam
- Available Manpower: Professionals -, Para professionals 1  
Activities: Dissemination of information about the UN, its agencies and activities.  
Subject Coverage: United Nations activities in the world and in Tanzania in particular  
Classification Tool: UN Scheme  
Services: Public reference, Advisory and Film loans  
Publication: Press releases on UN activities

041 UNITED STATES INFORMATION SERVICE (USIS),  
P.O. Box 9170, Dar es Salaam

Available Manpower: Professionals 1, Para professionals 2  
Activities: Promotion of cultural and educational  
relations between USA and Tanzania  
Subject Coverage: General plus Trade  
Classification Tool: DDC  
Services Provided: Advisory, Document loans and reference  
Information Products: Annotated Periodical list (A)  
Accession List, and Bibliographies  
Special Feature: Recently established a commercial  
collection to enhance availability  
of trade information

042 THE UNIVERSITY OF DAR ES SALAAM, Library  
P.O. Box 35092, Dar es Salaam

Available Manpower: Professionals 10, Para professionals 11  
Activities: Professional Training and Research  
Subject Coverage: All the sciences, education, law and  
engineering  
Classification Tool: L.C.  
Services Provided: Document loans, interlibrary loans,  
photocopy, reference and microform  
reader services  
Information Products: Annual report  
Special Feature: Has the largest S&T collection in the  
country and is the only  
comprehensive research library  
available  
Plans to offer post graduate training  
in Librarianship and Information  
Science effective July 1986

## 2.2. EXISTING AND POTENTIAL NATIONAL INFORMATION SERVICES AND NETWORKS

### 2.2.1. The Tanzania Library Services (TLS)

These services are centered at the National Central Library, established 1963. By the Library Act of 1975, it intergrates the collections and manpower in all its regional and district branches to provide public library services through:

- Centralized acquisition of both published and unpublished information;
- Co-operative processing prior distribution;
- Formalized interlibrary loans and photocopy supply;
- Publishing the national bibliography;
- Mobile library service to schools in 4 regions;
- Union listing of Periodicals;
- Dissemination of specialized information to all sectors;
- Periodic inventory of libraries in the republic;
- Other resources sharing activities.

The central library has 43 professionals. According to the Assistant Director, projected demand by 1990 stands at 114, with a 1:3 ratio of professionals to paraprofessionals. Since 1972 regular training of paraprofessionals has been undertaken by the Training Department of the library producing about 25-30 library assistants per annum. Diplomas and post graduate training have up to now been obtained from foreign institutions. There is a National Documentation Centre (TANDOC) which disseminates information to identified users; operates Q-A service and publishes abstracts for the agricultural, educational and industrial sectors. A documentation specialist heads the centre supported by qualified librarians.

Through the dedicated efforts of the National Bibliographic Agency, the library has been able to organise a very effective bibliographic control system which ensures both inventoring and availability when required. The national bibliography so published is disseminated to the major international bibliographic agencies in addition to domestic subscribers. The bibliography is indexed. This service is headed by a most dynamic librarian who is also the chairman of the Tanzania Library Association.

#### 2.2.2 The Health Information Services

The Library of the Faculty of Medicine, Muhimbili was in May 1983 designated as the National Library of Medicine. Being the largest medical library it was anticipated that it would organize for the institutionalization of Tanzania's National Health Information Network. While very little has been achieved in this direction at the time of this report, the library has to date developed a number of health information services embracing the major regional and district level medical training, or research institutions and consultancy hospitals. Services provided so far include:

- A quarterly bibliography of Health Information in Tanzania (Q);
- Tanzania Health Abstracts (A);
- Interlibrary loans;
- Provision of photocopies on request;
- Depository for medical dissertations (not - formalized by law);
- Information consultancy to other units.

According to the Medical Librarian who has worked tirelessly to see the network established, there is an urgent need for a National Information Policy which would contain the necessary legislature for the development of existing infrastructures and the co-ordination of existing information resources. Hogling further emphasizes the need for a National Health Information Policy which will guarantee responsibility to undertake co-ordinative and promotional tasks by the National Focal Point as the National Library of Medicine. The functions recommended for execution by the Health Information network include:

- Compilation of a directory of existing health science information libraries;
- Compilation of Union list of periodicals and catalogues;
- Control the national health bibliography, thereby making consolidated input to the National Bibliographic Agency at TLS;
- Formulation of interlibrary loan schemes for health information centres;
- Promoting international co-operation between the focal point and other Health Information systems;
- Co-ordination of training for health sciences library staff.

Currently managed by three graduate librarians, the first specialized Medical librarian is expected back from the University of California where she is undertaking 18 months training in medical librarianship. The centre is endowed with a photocopier, M/Fiche reader-printer, while funding for foreign journals has been kindly arranged for by NORAD and the University of Nijmergen (Netherlands). UNESCO coupons used to be of assistance until 1983 when the coupon scheme was stopped in Tanzania.

2.2.3. The Tanzania Literature Service (TALIS)

This service was established recently to provide for the nation wide information needs of all agricultural research and training institutes. Centered at the then Faculty of Agriculture, Forestry and Veterinary Sciences, now the Sokoine University of Agriculture (1984), Library in Morogoro it was recommended for the service to provide:

- photocopy service of journal content pages;
- supply reprints on request;
- organize abstracting and indexing of locally generated agricultural publications;
- undertake regional and international co-operation with other systems and networks.

The faculty was already one of the depository libraries for FAO publications. The launching of TALIS, however further necessitated a complementary legislature to ensure the depository of all agricultural publications initially with this library prior to the University of Dar es Salaam Library and the National Central library. This has been achieved.

With only 4 qualified personnel, the service in the event has not been able to implement all the activities for which it was intended. The ratio of its qualified to supporting staff 1:12 falls far below the UNESCO proportions for a University Library 50:50 or a specialized one 75:25.

2.2.4 The Tanzania National Research Information Service (TANRIS)

This autonomous service was established in 1978 within the TNSRC. It aimed at wider dissemination of research information to all potential users in the country. Manned by two well trained information scientists with adequate supporting staff, the service planned to execute the following:

- Distribution of content pages of journals subscribed to by the centre;
- Dissemination of AMTID Newsletter - (currently ALERTEC) a publication of the NTIS of USA;
- Compilation of subject bibliographies some of which were intended as inputs to foreign databases e.g. to AGRIS through the Ministry of Agriculture and Livestock Development;
- Compilation and Publication of Directories of Tanzania's research potential: both facilities and manpower;
- Publication of a research Journal;
- Provide financial assistance for the acquisition of foreign literatures by research organizations through controlled usage of SAREC funds;
- Execute a computer based SDI service
- Organization of national and international seminars.

In the event of this survey, only the SDI service has not been implemented due to technical problems of using local telecommunication systems. This is a problem in practically all countries South of the Sahara except South Africa, said the Director of TANRIS. However, subscription fees have been deposited with DIALOGUE and SDC (USA), Blaise (UK) and ESA (Italy) databases; the computer terminals are available and TANRIS has some 450 identified subscribers.



## CHAPTER 3

### 3.0 USERS OF INDUSTRIAL AND STATISTICS INFORMATION

#### INTRODUCTION

Before UNIDO proposed the incumbent assistance project, the TIRDO Information Department had paid visits to over one hundred and fifty small and medium scale industries in Tanzania. The purpose of the visits was to promote TIRDO's technical services, the Technical Inquiry service being one of them.

Between June and July 1984, the Department surveyed a total of twenty five small and medium scale industries drawn from various regions, in an attempt to identify industrial information needs further promoting the Department's information services. In response to all these visits, a number of inquiries started flowing in, effective 1982, with the inquirers being as diversified as the problems on which they sought TIRDO's assistance. On the basis of all these records supplemented by the results of the current assignment, the users of industrial information may be grouped as follows:-

- the Government ministries and departments;
- the small & medium scale industries;
- consulting organizations including industrial development corporations;
- researchers engaged in R&D.

#### 3.1. Government ministries and departments

Five ministries were included in the survey of potential users of industrial information and statistics. The

impressions gathered are that these bodies are planners, policy makers and co-ordinators of activities which are implemented by various parastatal organizations and institutions under each Ministry. To be able to plan, make policies and take rational decisions a lot of reliable information about the status of the sector under discussion, and experiences of other countries, in addition to relevant comparative statistics and consultancy services are required.

The Ministry of Planning and Economic Affairs draws much of its information either from Tanzania National Scientific Research Council (TNSRC) or from the parent ministries with respect to data from other sectoral activities or the Bureau of Statistics. The TNSRC is the overall co-ordinator for R&D in Tanzania. Technological information about successes in other countries is obtained directly from the appropriate UN agencies; FAO, for agricultural based information; UNIDO for industrial and UNCTAD for trade information etc and for their planning processes, industrial profiles, machinery and equipment information, known patents together with the know how are considered as a package. The Industrial Statistical Year Book together with the World Bank Annual World Development Reports have been the major sources of external statistics. Economic Planning being a very sensitive issue has meant that all industrial information matters are registered not with the library in this case,

but with the Head of the Department for Science and Technology and the Commissioner for Sectoral Planning - both Heads being experienced economists.

The Ministry of Industries and Trade is probably among the greatest users of both industrial information and consultancy as it is the central organ for the promotion of medium to large scale industries. The Ministry requires all industries the private and parastatal, to submit, on annual basis, actual and planned production statistics for purposes of budgeting and preparation of economic data which it feeds to the Ministry of Planning and Economic Affairs. This information is obtained directly from those private enterprises or through parent ministries or corporations like the National Development Corporation (NDC) and Kilimanjaro Industrial Development Corporation (KIDC). For better monitoring of these statistics, the Ministry has established (1984/85) an Industrial Statistics Section under the Directorate of Planning and Research to cater for the collection, proper handling and dissemination of such data. This section is manned by an industrial economist.

A number of industries have been established under the auspices of this Ministry and in practically all cases, the technology transfer package approach was used. Having identified a required product, the advice of UNIDO and or related international bodies is used to identify competent

firms to undertake the pre-and the feasibility studies - a process which is often repeated not less than thrice.

The advise of a permanent consultancy firm is further used to identify and recommend machinery suppliers, installation consultants, commissioning expertize followed by suitable management. In almost all cases, production expertize and training of local personnel are part of the transfer package.

It is evident that the Ministry has not only used the consultancy services of UNIDO intensively but has also been a great consumer of industrial information. This has been essential to enable Ministerial officials to participate in project appraisal and in contract negotiations.

In realization of the importance of institutional capability, the Ministry is now implementing long term plans to develop its own expertize; through the development of prastatals such as, the Tanzania Industrial Studies and Consulting Organization (TISCO), the Tanzania Bureau of Standards (TBS), the Tanzania Industrial Research and Development Organization (TIRDO), the Board of External Trade (BET), the Center for Agricultural Mechanization and Rural Technology (CARMATEC), and the Tanzania Engineering and Manufacturing Design Organization (TEMDO) to mention but a few. It is envisaged that the required consultancy for the execution of the various parameters during an industrial establishment process together with provision of engineering

design & development, and testing facilities will in future be undertaken by these institutions. The acts establishing these institutions further do provide for the development of documentation/information systems to cater for the present and future information needs of the industrial clientele.

The Ministry of Agriculture and Livestock Development is not a great consumer of industrial information as it concerns itself more with primary production techniques, breed improvement and semi-processing of some of the products. Projects used to be developed with the consultancy of FAO and the World Bank.

Today, enough expertise has been developed to initiate project formulation up to the stage of project preparation. This has been possible through the establishment of a Project Preparation and Monitoring Bureau (PPMB) which is composed of specialized scientists, engineers, economists and accountants. Together, project re-appraisal is undertaken prior to the identification of a financier. Financial negotiations here are multi-disciplinary and involve the Treasury, the Bank of Tanzania (BOT) and ministries whose operations would be affected by the project under implementation. By the level and nature of the activities undertaken, agricultural versus industrial information is used but this trend could change.

The Ministry of Water, Energy and Minerals has the overall responsibility for the proper development of gas, coal, oil hydropower and mineral exploitation. As a decision making body, it receives the required status data directly from its parastatal organizations: Tanzania Petroleum Development Corporation (TPDC), State Mining Corporation (STAMICO), Tanzania Electric Supply Company (TANESCO) and Rufiji Basin Development Authority (RUBADA) or from other ministries where necessary, and especially the Bureau of Statistics. The Ministry has ruled that Tanzania shall go hydro and electrification grids have been established, for implementation by TANESCO. As far as research and development of new and renewable energy resources is concerned, a number of organizations are responsible, with the co-ordination invested in the TNSRC. As a Ministry its consumption of industrial information is growing.

The Ministry of Communications, Transport and Construction draws much of its information from its own researches but where necessary foreign sources are used. The operations of this Ministry are complicated as it has to operate at variant levels of technology. There are projects which, by the very nature of the elements of the project, call for large sums of foreign exchange. These have to be undertaken by foreign contractors, a situation imposed by the nature of international financial assistance. For projects whose elements are within the limits of available expertize,

materials, equipment and machinery, local consultants use available technological information to re-appraise and recommend implementation. Projects involving capital goods are however still a constraint.

A lot of research has been and continues to be undertaken on matters related to telecommunications, transport and construction. A Statistics and Information Section is under establishment to cater for the proper data collection, compilation, interpretation and dissemination of the researches of the Ministry. Such statistical indicators will be used to establish various standards regarding various aspects of the sector such as road tonnage resistance. The section is to be manned by a qualified statistician.

### 3.2. Medium Scale Industries

Tanzanian industries were established at a time when shortages of foreign exchange were unpredictable. As a result, many of them either assembled parts or manufactured goods based on semi-processed industrial inputs. The machinery and equipment they used were imported as well as any quality control equipment and chemicals required for the various processes at the plant. Those were further the days when the energy conservation consciousness had not taken grip of the world. Spareparts too were not a problem, for the agricultural exports fetched a market price which could comfortably shoulder the country's budget.

Over twenty years of independence have brought about a number of major changes. Without indulging too much on the factors which have adversely hampered infinite growth of the foreign exchange earning processes, the point is, there is very little of that precious resource available. The same industries above can no longer continue footing their bills for the massive importation of goods ranging from raw materials to spare parts. This situation has thus created maladies such as:

- shortages of raw materials (processed);
- shortages of spare-parts;
- unavailability of those types of machinery and equipment which can be fabricated locally;
- delayed industrial rehabilitation;
- shortages of chemicals;
- difficulties with product diversification;
- escalating energy costs;
- capacity under-utilization.

As industries gradually felt the economic pinch created by this apathetic economy, the national industrialization policy put more and more emphasis on import substitution and product diversification to alleviate the situation. These policies then underscored satisfaction to the domestic market. (In the event of this assignment trade liberalisation has however been effectively pronounced).

In trying to solve these problems some industries opted for import substitution while others established spare part manufacturing lines, others considered product diversification, some opted for short-circuiting of the production process and etc. - all decisions which could only



be situation specific. Success has not been easily realized due to the time span of new product and process development.

From the three years records of the inquiry service supplemented by responses obtained from the industries surveyed in the course of this project, enterprises with R&D have been the greatest users of processing technology information. This is because no import substitution can be undertaken without R&D while lack of adequate funds has curtailed the establishment of ancillary production units to meet the varied needs of each industry. And despite the existence of common industrial estates within urban regions, SIDO spring boards of technology transfer, the technicalities of spare part production have not been easy to resolve from the economics point of view. Spare part shortages have thus remained a problem.

Generally, these industries have wanted any type of information which could assist them to increase their capacity utilization, and reduce machine down time, at the most cost effective levels. Questions such as the following have been recorded in the TIRDO Inquiry Service register:

- Provision of processing technology viz: soap manufacture, distillation processes for essential oils, concentrate manufacture from local fruits, animal feed production techniques, edible oil manufacture, and chemicals processing technologies etc.
- Availability of local raw materials;
- Provision of machinery suppliers and machinery specifications;
- Quality control techniques;

- Product diversification, industrial profiles and product formulations;
- Skills training opportunities;
- Design information for machines and other products;
- Statistics and trade information;
- Patents and licences.

Asked what sources of information they depend on, a few industries do subscribe to a limited number of specialized technical journals in addition to having a few foreign contacts. Industries surveyed were unaware of the services available at UNIDO INTIB; as they never knew of its existence. Some of these industries have established technical collections to serve their technical staff. In many cases subscriptions are years behind due to lack of foreign exchange.

### 3.3. Consulting Organizations

Of the five consulting institutions included in the survey, only one, TISCO, had an elaborate information system that provides for industrial inquiries. Consultants are intensive users of industrial information and statistics depending on their areas of specialization. Industrial promoters put a priority on industrial profiles, process technology and patented information while machine designers value machinery and equipment specifications, patents and licences, more than industrial statistics. This group of experts is capable of constructing feasible product profiles. Information from other countries on project profiles under implementation would however be of interest

in addition to terms of industrial contracts from those countries.

3.4. R&D personnel

The nature of the activities of this group necessitates the consumption of the widest scope of technical information ranging from availability of raw materials, authentic identity; physically and chemically, testing methods, conformation to standards, processing techniques, design information, knowledge of previous researches done, available obsolete patents, machinery modifications, market data and prices to prospective clients. In fact there is no end to the questions asked by R&D staff, and the demand for problem oriented information here is just insatiable, a reflection of the difficulties encountered in commercializing laboratory work. There is however, only one industrial R&D organization i.e. TIRDO, but a number of industries such as, Fahari Fruit Products Ltd of Dar es Salaam, Kibo Pulp & Paper Board Mills in Moshi, Ali Sheriff of Arusha and the Kilimanjaro Industrial Development Corporation (KIDC) of Moshi have successfully launched new products/processes on the market on the basis of their inhouse R&D.

The new products are Fahari Soda (Tanzanian's first local drink standardized and bottled as required); packaging paper; waste oil reutilization process and ceramic stoneware finished with local glazes; in that order. Textile

industries notably URAFIKI and SUNGURATEX have developed accessories some of which are worth patenting though production is limited.

A number of other industries such as Bora Shoes of Dar es Salaam, the Wood and Bamboo pipes water projects of Iringa, and the Multipurpose Oil Processing Company (MOPROCO) of Morogoro are deeply engaged in R&D to solve operational bottlenecks. These include better designs for shoes, preservation of bamboo water pipes (for drinking water), soapstock utilization and better oil extraction methods respectively. One research and development project on utilization of locally available vegetable dies in the textile industries has been sponsored by SIDO and is under implementation at TIRDO.

### 3.5. Small Scale Industries and Prospective Entrepreneurs

SIDO has promoted well over 5,000 small scale enterprises bringing the total, together with the self established ones, to about 10,000 units in the country. According to the Director of Training and Extension Services, both the self established and the SIDO promoted enterprises depend heavily on the regional extension services of this Organization for both technical assistance and information service. Three extension officers in each region combine the qualifications of an Economist, an Engineer and a generalist who collectively identify entrepreneurs and opportunities.

Establishment of industries has taken the technology transfer package approach; the technical know-how being provided either at one of SIDO's industrial estates or abroad depending on the complexity of the techniques. The time frame from entrepreneur identification to plant commissioning has on average taken three years, a period which is supported by SIDO Consultancy and financial assistance. Registered needs at the SIDO headquarters include: audio-visual services to demonstrate various industrial skills; preventive maintenance; how to modify machinery; cheaper sources of machinery & equipment; cost reduction and marketing techniques.

## CHAPTER 4

### 4.0. INFORMATION NEEDS AND SERVICES REQUIRED BY INTIB USERS

#### 4.1. INFORMATION NEEDS

The types of information required by identified categories of users (Chapter 3) include:

<u>USER CATEGORY</u>	<u>INFORMATION NEEDS</u>
Government Ministries and Departments	<ul style="list-style-type: none"><li>- economic development data;</li><li>- technology transfer packages;</li><li>- development of institutional capability;</li><li>- industrial performance;</li><li>- foreign contractors in various sectors.</li></ul>
Small scale industries	<ul style="list-style-type: none"><li>- technical know-how</li><li>- availability of processed raw materials;</li><li>- financiers;</li><li>- equipment and machinery specifications;</li><li>- audio-visual techniques;</li><li>- investment procedures</li><li>- marketing techniques.</li></ul>
Medium scale industries	<ul style="list-style-type: none"><li>- Government legislations;</li><li>- processing technology;</li><li>- product profiles &amp; diversification;</li><li>- quality control and standards;</li><li>- machinery and equipment specifications;</li><li>- productivity improvement;</li><li>- skills training opportunities;</li><li>- availability of ancillary units competent to undertake spares production;</li><li>- market statistics;</li><li>- patented information;</li><li>- energy conservation.</li></ul>
Consultants	<ul style="list-style-type: none"><li>- engineering design;</li><li>- technological information;</li><li>- industrial profiles;</li></ul>

- market statistics;
- continent wide project profiles;
- investment incentive schemes;
- conditions of industrial contracts;
- patents & licences.

#### R&D departments

- import substitution alternatives;
- sources of raw materials;
- analysis, standardization and quality control of raw materials;
- processing techniques (patented information);
- market prices;
- cost reduction information;
- information about clients;
- commercialization of R&D results.

The trend has been on technological information although latest observations through the mass media indicate the possibility of a future shift to information about foreign markets and competitive marketing procedures. For specified profiles see Annex III.

#### 4.2. INFORMATION SERVICES REQUIRED

Nobody can deny that the role of information in implementing industrial plans is not just limited to its dissemination alone. In fact it encompasses the development of capabilities that can generate, collect, analyse and interpret information; for information in the hands of incapable personnel cannot yield any results. For this reason the following are the information services most required by industrial information users in Tanzania:

#### 4.2.1 Consultancy

This is in greatest demand by all users of information. Recommendation 66 of the newly approved National S&T Policy stipulates that "...appropriately qualified Tanzanian lawyers, economists and technologists..." must always be employed in drawing up management and technical consultancy agreements, "...to avoid unnecessary legal and financial obligations, and political or technical problems." (S&T Policy for Tanzania, 1985, p.26). In accordance to the findings of this survey, most development projects, particularly where advanced technology is utilized, still employ foreign consultancy even for simple functions like recommending a manufacturer.

Industries too require information consultancy. It no longer suffices to tell an enterprise about the availability of a given raw material for import substitution purposes. It would be effective if the officer supplying such information could simultaneously tailor make the advice for application. While technical consultancy is beyond the scope of this assignment, the report would be incomplete if left without mention. It should be noted however that TISCO is being developed to fill this gap along with design engineering institutions such as Tanzania Engineering and Manufacturing Design Organization (TEMDO) and the Institute of Production Innovation (IPI).



#### 4.2.2

##### The Technical Inquiry Service (TIS)

Both TANDOC and TIRDO operate this service; TANDOC to all sectors while TIRDO targets are the medium scale industries although other requestors are handled when possible. TANDOC is manned by a staff of three graduates in Arts specialized in librarianship, headed by a Documentation specialist. While the centre receives well over a hundred inquiries per annum, there is no systematic follow up for a feedback.

A recent evaluation of the TIS services executed by TIRDO during 1984 indicated that there is an urgent need for an industrial inquiry service than can either provide tailor made information for immediate consumption or combine information plus guidance and assistance to the inquirer. Training in industrial operations for the information personnel of the INTIB focal point is thus recommended if at all the centre is to realize result. The officer should take care of the information repackaging required above.

#### 4.2.3

##### Industrial Seminars

Forums which bring groups of industrialists by sector, to discuss trouble shooting and develop solutions to identified industrial problems could help to cultivate the much needed horizontal communication with mutual

benefits. The Professional Club Meetings, jointly organized by TIRDO and IPI was established to promote such forums, among other things. Ten such forums have been organized since 1982 and the response by the private sector in particular has been very encouraging. The club has its secretariate at TIRDO, while club members hail from Dar es Salaam, Zanzibar, Arusha and Morogoro.

#### 4.2.4

##### Extension Services

An elaborate extension service exists for the small scale industries in Tanzania. Based at SIDO with branches in every region of the country, these officers provide consultancy, advice, assistance and guidance towards solving daily operational problems of the small scale entrepreneurs.

The difference in levels of technology necessitated and justified the establishment of a similar service at TIRDO to cater for medium scale to large enterprises of which there are about 1,000. To date the service has visited over one hundred enterprises (about 10% of all manufacturing establishments). About 150 technical problems have been identified, documented and some, responded to.

The service is however limited in both manpower and scope. The experiences of TIRDO's Extension Officers

have shown the need to develop capability to complement the functions of the service as a mechanism of providing technological advice. For it to generate the anticipated impact, it should be developed to undertake the following functional activities: on the spot troubleshooting; process improvement and rationalization; product quality improvement, and cost control and cost accounting improvement - without which it is not possible to improve operations in existing industries.

This justifies the need for expertise in industrial engineering in addition to possession of knowledge in various fields of technology, business management, marketing and accounting. An analysis of the technical problems identified so far confirms the need for this service.

The problems include:

- need for exploitation of natural resources to reduce/substitute imports of processed and semi-processed materials;
- process design/modifications;
- analysis, metallurgical, chemical and testing of equipment;
- process technologies, methods, technical consultancy, markets and prices;
- upgrading of operative skills;
- optimal use of production machinery and better working methods;
- aging equipment;
- horizontal and vertical communication.

#### 4.2.5 Selective dissemination of information (SDI)

This service is in demand by industries that have research and development. Responses from enterprises such as Sheriff Dewji of Arusha, the Multipurpose Oil Processing Company Ltd (MOPROCO) of Morogoro, Rajani Oil Mills of Dar es Salaam, Sabuni Industries (detergent industry) of Tanga, Kibo Pulp and Paper Board Mills and the Kilimanjaro Industrial Development Corporation (KIDCO) both of Moshi testify this.

Essentially these enterprises need, not necessarily the most current information but known techniques to further assist in their ongoing efforts to improve their processes or products, and in new developments. A computer based service could provide a partial solution to this problem.

#### 4.2.6 Audio - visual aids

The need for this was underscored by SIDO's Director of Training and Extension services who emphasized that the small scale workers needed demonstrations to master various industrial skills. Preventive maintenance, industrial safety and cost-reduction were cited as typical areas for the service.

#### 4.2.7 Translation services

SIDO has a registered need to translate some

operational manuals from English to Kiswahili (Tanzania's national language) for the benefit to workers in small scale industries.

For the medium scale industries, technical literature of German, French or Russian origins presents a translation problem as knowledge of the language alone does not guarantee a technical translation. Measures to provide for translations by the INTIB focal point are recommended.

#### 4.2.8

##### Publications

To alert industries of pertinent information available in Tanzania, in foreign documents, Government legislations and the like. This should be in the form of active information service, or publicity media such as an industrial newsletter to convey on regular basis domestic developments that could affect industries. Government legislations get publicity in the Government Gazette, a monthly newsletter, often loaded with other notices as well.

## C H A P T E R 5

### 5.0. MANPOWER REQUIREMENTS AND TRAINING NEEDS FOR THE NATIONAL INFORMATION SYSTEMS

#### 5.1. PRESENT STATUS

There is a great demand for professional librarians, archivists and information specialists in Tanzania if the manpower surveys of actual employment versus planned and projected additional requirements compiled recently by the Ministry of Manpower Development, present any figures to go by.

A recent nation wide survey by the Tanzania National Documentaton Centre indicated that in the approximately 200 libraries, archives and reference collections in the country, there were only about 121 professionals distributed as follows:-

Table 1: Professional Manpower Situation by Type of Library

Archives	3
Colleges and Research Institutes	11
Public Libraries	55
Schools	1
Special Libraries	21
University Libraries	30

-----  
Source: TANDOC list of practising Librarians, documentalists and archivists in Tanzania Dar es Salaam: TLS, 1983.

A manpower survey of the employment situation and manpower requirements by each economic sector and

occupation revealed the following:

Table 2: Professional Employment and Existing Vacancies

ISCO Code	Total Employment	Vacancies
1-91-20	Librarian 185	104
1-91-40	Curator 15	63

Source: Wizara ya Maendeleo ya Utumishi na Uendelezaji Kazi Uchunguzi wa mahitaji ya wafanyakazi wa Daraja la Juu na Kati, Dar es Salaam, January 1984.

From the sectoral distribution of employees in the field and the sectoral distribution of vacancies, available a projection of the minimum professional manpower requirements for the sector over the period 1986-1991 was arrived at by a Librarian Consultant as summarized below:

Table 3: Projected Additional Professional Manpower requirements by type of Library 1986 - 1991

Archives <sup>1</sup>	30
Colleges and Institutions <sup>2</sup>	20
Public Libraries <sup>3</sup>	60
Schools <sup>2</sup>	10
Special Libraries <sup>2</sup>	30
University Libraries <sup>4</sup>	50
Sub Total	200
Waste	10
Total	210

1 Estimate by the Director, National Archives

2 Consultant's estimate

3 TLS Manpower requirements present and future. Internal Memorandum 1981

4 Estimates of the University Chief Librarian. (including Agricultural library, Morogoro; Medical library, Muhimbili and Marine Science Library, Zanzibar requirements 1982)

Source: Proposal for the Establishment of the School of Library, Archives and Information Science at the University of Dar es Salaam: The Library, 1985.

## 5.2. AVAILABLE TRAINING FACILITIES

To realize the above plans and projections, a Library School to offer Post Graduate Diploma in Librarianship (PGD) and Masters degree in Library and Information Science (MLS) has been planned since 1980. The first intake of about 15 is scheduled for July 1986 and within 9 and 18 months respectively, the first batches of qualified information personnel will graduate from the University of Dar es Salaam.

In general, the entry requirements for both PGD and MLS will equate those established for admission to the University of Dar es Salaam. In exceptional cases, relevant aptitude and practical experience shall be used to modify the level of academic achievement superimposed as minimum qualification.

To a large extent, basic training in Library and Information skills will from 1986 become very accessible to all specialized librarians and aspiring information personnel as it will entail no foreign exchange. Experience in information handling especially for industrial users will however remain limited because there are very few centres operating that service.

### 5.2.1. The PGD Programme

There will be seven core courses namely:

Sources of information (2), User studies (1),  
Information storage and retrieval (2), Research  
methodology (2), human communication (1), principles



and theories of management (2) and an independent study (4). Total Score: 14 units.

15 electives are provided, for the selection of one option weighting 2 points. Many of these electives deal with traditional library aspects such as indexing and management. The services however, are specialized and include service to industry.

The details of this option are:

LS 625: Information Service to Industry

Objectives: To acquaint students with information as an infrastructural support for industry;  
To equip students with skills of handling industrial information needs.

Contents: Familiarization with typical library and documentation centres with materials on science and technology;  
The selection, evaluation and use by various industries;  
Categories of industries and their information need profiles;  
Case studies of industrial information centres (TIRDO, TISCO and others);  
Special aspects of Research and development designs;  
Exploitation of data banks and dissemination;  
Regional and international information systems and networks for industry.

### 5.2.2. The MLS Programme

On successful completion of the PGD, students may register for Masters by upgrading or enrol for the same to write a 25,000 word's dissertation, which will lead to the award of a Masters in Librarianship and Information Science. While brilliance is the condition for direct upgrading, a 2-3 years working experience is required for enrollment.

### 5.3. Analysis of Professionals in Specialized National Information Systems.

As asserted earlier in the scope note of limitations, it seems impractical for UNIDO to provide support for the professional training of the manpower manning all the existing and potential national information systems as projected in Table 3. A closer look at the manpower problems in only the existing and potential industrial information systems whose services are nation-wide is thus presented below. The situation in the public and University Libraries is included for comparative purposes notwithstanding the realization that these two centres have large resources which could be mobilized. While ESAMI and TNSRC are the only specialized centres with trained Information Scientists, TIRDO and TISCO together possess the most experienced industrial information personnel.

Table 4: Professional Manpower situation in specialized centres included in this survey

	Post graduate Professionals	Para Professionals	App. Ratio
Specialized libraries/ Information centres	32	104	1:3
The National Central Library	43	75	1:2
The University of Dar es Salaam Library	10	11	1:1

While 50% of positions in the University library are occupied by post graduates as internationally recommended, over 50% of such positions in the Public library are also occupied by post graduates as opposed to the recommended standard of only 25%. Less than 30% of positions in the specialized libraries are held by postgraduates. This ratio leaves much to be desired compared to the recommended 75% (Dean, 1974, p. 17).

Only 6 of the 32 postgraduates in specialized centres, are information specialists, the others are typical librarians. The situation is more grave when observed closely.

Technical libraries/documentation centres such as centre nos:- 001, 004, 008, 009, 012, 027, 029, 030, 031, 032, and 038 in this report, do not possess even one post-graduate information worker yet they handle very technical collections. This is possibly why "there is serious lack of effective information services in the various sectors of society. An information worker setting up an information unit in such sectors must be able to gain acceptance by

other professional groups in the fields as an equal. This requires a person educated to a high level and in an appropriate field." (Roe, 1982, p.5).

Recent developments observed include the employment of an Industrial Economist to establish an Industrial Statistics and Information Databank (1984/85) at the Ministry of Industries and Trade; the appointment of a Statistician to organize a Statistics and Information Unit for the Ministry of Communications, Transport and Construction, and in general, the handling of industrial information matters by Directors of Planning or operations, in ministries and development corporations, or by production or technical managers in industries. In accordance to the findings of this survey, many of these potential information specialists are unaware of the existence of UNIDO-INTIB, less so of the services.

An interesting observation is noted in consulting organizations. At IFI, the Technical Manager an experienced engineer with a long lecturing experience, has SEAT, VITA, GATE, TPI and ITDG among his correspondents in addition to UNIDO INTIB. At TEMDO a design engineer with some five years experience in the same handles industrial information matters. At the Industrial Promotion Services (IPS) a private industrial development corporation, a chemical engineer with qualifications in Business Administration (MBA) plus 11 years in production management and industrial consultancy, analyses industrial information. At TISCO, a

science graduate trained in several operational information systems, UNIDO and FAO inclusive registers industrial inquiries which are subsequently directed to backstopping consultants.

At MEIDA the press release on 29<sup>th</sup> August announced a vacancy for a Principal Information Officer who was required to have the following qualifications: "Candidates must have a good mechanical engineering or Science degree and at least 5 years working experience in industry. Experience in industrial liason will be an advantage. (Daily news, August 29, 1985).

The trend is thus for technical information personnel.

5.4. Manpower requirements for potential industrial information systems.

From the above discussion it is obvious that in order to strengthen national information systems to effectively provide industrial information services, there is need for two categories of information officers. Category one should consist of post graduate professionals, preferably with some scientific background and well versed in documentation procedures. These are required to man the numerous information centres which category two will need to liase with in obtaining the information required for further analysis.

Category two should consist of industrial information officers or extension agents because to train category one in the essential functions of information analysis and its application in industry sounds not only unrealistic but is a task of formidable magnitude, the success of which is not anywhere recorded. The extension agents should be well versed in documentation principles essential for the maintainance of extension service basic data.

In line with this data therefore, the following centres will need the manpower specified below:

Table 5: Manpower Requirements

	Post Graduate Professionals	Industrial Information Officers
Specialized centres	20 <sup>1</sup>	5 <sup>2</sup>
Ministries	-	4 <sup>3</sup>
INTIB Focal Point	3	2

5.5. Training needs to strengthen the existing systems.

To realize the aims of establishing INTIB focal points in various countries, serious consideration should be made to provide for the training of industrial information officers. As these are essential to serve the requirements of industrial planning and management, engineering and salesmanship, a technical person with experience in industrial operations together with exposure to economic aspects of industrial investment and operation is necessary. Deemed essential to fulfil the function of information needs of industry, the function of such an officer can no longer be left unfilled without seriously impairing the capability

<sup>1</sup> Centres nos. 001, 004, 008, 009, 012, 018, 019, 020, 022, 023, 027, 029, 030, 031, 032, 033, 034, 035, 038;

<sup>2</sup> Centres nos. 018, 027, (035 already has one extension officer)  
CARMATEC, KIDC, TEMDO

<sup>3</sup> Ministres: 020, 022, 023  
Ministry of Communications Transport and Construction

of industries to utilize technological information. While one officer of this calibre already exists at TIRDO, provision of training in industrial engineering to consolidate his profile could be a good starting point. The officer could then pass on the techniques so far developed to the future personnel of the service despite the need for the same qualification to fulfil career requirements for all subsequent officers.

Additional needs include:

- In fulfilling career development, the long term priorities should be to enable all information scientists (Table 5) to get certified, locally or elsewhere preferably with a Masters in Information Science,
- Familiarization with UNIDO-INTIB operations for the three information scientists of the focal point to be.
- Study of network development at TECHNUNET Asia and in advanced information technology for one information scientist of the designated focal point,
- Training in information repackaging for the personnel of the same,
- Training in industrial operations for the industrial information officers of the same,
- Provision of financial support to enable information scientists of technical documentation centres, to attend short term courses in information services locally available at ESAMI,
- Training in audio-visual facility development, and effective communication skills,
- Training geared to the development of translation services especially German and French.

These specializations have been singled out as they fall short of the PGD and MLS to be provided shortly by the University of Dar es Salaam.



### References

1. Dean, J. A regional Library Science Programme for Eastern Africa in Planning a Library School for the United Republic of Tanzania: Report of a consultancy visit, Dec. 30 1981 - Feb. 4 1982. by John Roe. Dar es Salaam: UDS, 1982 p.6
2. Hogling, G. The need for a national health information policy in Tanzania. Dar es Salaam: Muhimbili Medical Library. 1983. p.3-4
3. Hüttemann L. and Musana A. (eds) Information Services for rural development and industry: Selected contributions from two DSE/ESAMI training programs. Bonn: German Foundation for International Development, 1984. p.43-73.
4. Mwinyimvua E.A. (ed) Directory of Libraries in Tanzania. Dar es Salaam: Tanzania National Documentation Centre, 1984. 112p.
5. Nyonyi, W.N.A. Industrial Innovations in Tanzania: Paper presented by M. Minja to the Workshop on outstanding scientific research achievements and the application of S&T by individuals in Tanzania, Arusha 4<sup>th</sup> - 9<sup>th</sup> March 1985. TIRDO. 7p. (REF. IRD/1/22/20)
6. " " Establishment of TIRDO Documentation Centre and its services: An overview. Paper presented to the TIRDO Internal professional meeting held 12<sup>th</sup> May, 1984. TIRDO. 12p.
7. " " Report on Technical Information Service Project, TIRDO, DSM. July 1984. 12p. (REF. IRD/4/3/2/25)
8. Roe, J. Op. cit. p.8-12.
9. Tirgo J. and Mlelwa E. Review of TIRDO information cum industrial extension services. Dar es Salaam: TIRDO, 1985, p.2-7 (RESTRICTED)
10. Directory of Technical Information Resources in Tanzania, 2<sup>nd</sup>ed. Prepared by SIDO/TANRIS/TIRDO and TISCO, Dar es Salaam: TNSRC, 1983.

11. Proposal for the establishment of the school of library, archives and information studies at the University of Dar es Salaam, The Library, 1985. p.5-12.
12. Scientific and Technical Information in Pakistan: Report of a joint IDRC/UNDP mission, Oct-Nov. 1976. Islamabad: Pakistan Science Foundation, 1978. 63p.
13. The national science and technology policy for Tanzania. Dar es Salaam: Ministry of Planning and Economic Affairs, 1985. p.25-34.
14. Technical Inquiry Service Register. TIRDO, DSM. (REF. IRD/4/4/6).

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
UNIDO

JOB DESCRIPTION  
RP/RAF/85/621/17-02

Post title           National expert on industrial information service  
Duration             2.0 m/m  
Date required        1 July-31 August 1985  
Duty station         Home country (Tanzania)  
Purpose of project   To assist selected countries of Africa in the  
                      establishment of INTIB national focal points as  
                      well as in strengthening national information  
                      systems and services.

Duties: The expert will identify in the home country, at national level, the followings:

- (a) existing and potential information systems, services and networks;
- (b) identification of existing and potential users of industrial and statistics information;
- (c) identification of the nature of information needs and services required by INTIB users;
- (d) assessment of manpower requirements and training needs for the national information systems; and
- (e) preparation of schedule of the UNIDO experts field mission in the country.

The expert is requested to prepare a report on his findings and submit it to UNIDO by end August 1985. The report should be about 50 pages in length.

---

Application and communications regarding this Job description should be sent to:

Project Personnel Recruitment Section, Industrial Operations Division  
UNIDO, VIENNA INTERNATIONAL CENTRE, P.O. Box 300, Vienna, Austria

V.81-33106

Qualification University degree in science, engineering or economics with practical experiences in industrial information service field.

Language English

Background Information The supply of information at the national level in particular for the priority sectors identified by the Lagos Plan of Action is crucial for the success of the Industrial Development Decade for Africa (IDDA). The position in this regard at present needs considerable improvement. Several African countries do not have an industrial information system themselves and in many cases where they have such facilities they are mostly in the nature of documentation services. They also suffer from lack of adequate resources to obtain on a systematic basis information from external sources. INTIB provides an international infrastructure on which they could draw upon to strengthen themselves. By establishing links with INTIB selected personnel in the information systems and services could also be made familiar with the methods of collecting processes and disseminating problem-oriented information to industry.

VISITS AND INTERVIEWS CONDUCTED

- July 3: Tanzania National Scientific Research Council,  
Mr. M.H. Nguli; Senior Scientific Officer
- July 4: British Council Library,  
Miss Fru-Watts Russel; Ass. Representative (Books)
- July 6: Tanzania Food and Nutrition Centre  
Mr. A.C. Mosha, Head Food Technology Dept.
- July 12: Tanzania National Documentation Centre, Tanzania Library  
Service.  
Mr. E.A. Mwinyimvua, Head  
Miss D. Sekimanga, Senior Librarian
- July 13: Tanzania Industrial Studies and Consulting Organization  
Mr. C. Mandara, Head, Information centre  
Mr. S. Malindi, Librarian
- July 17: Small Industries Development Organization  
Mr. D. Kulagora, Director of Training and  
Extension Services
- July 19: Registrar of Companies; Business Names, Patents and Trade  
Marks  
Mr. R.B. Mngulwi - Registrar
- July 20: Ministry of Industries and Trade  
Mr. C. Massawe - Library Assistant
- July 22: Ministry of Planning and Economic Affairs  
Mr. T. Mteleka, Deputy Head, S&T Department
- July 23: Ministry of Water Energy and Minerals  
Mr. S.J. Makundi, Director, Planning and  
Development
- July 25: Institute of Production Innovation  
Mr. E. Th. Protzen, Technical Manager
- July 26: Tanzania Library Services  
Mr. E.E. Kaungamno, Director  
Mr. C.S. Ilomo, Assistant Director
- July 27: Tanzania Electric Supply Company Ltd (TANESCO)  
Mrs M. Mango - Librarian

- July 30: Tanzania National Bibliographic Agency  
Mr. T.E. Mlaki, Head and Chairman; Tanzania  
Library Association.
- August 8: Muhimbili Medical Library,  
Miss G. Hogling, Medical Librarian
- August 9: Tanzania National Scientific Research Council  
Prof. A.S. Msangi, Director General  
DEVPLAN  
Mr. O.M.S. Bendera, Director, S&T, Dept.
- August 10: Ministry of Agriculture and Livestock Development  
Department of Planning and Marketing  
Mr. B.H. Katani, Senior Economist
- August 20: Ministry of Industries and Trade  
Directorate of Planning and Research  
Mr. A.J. Chillumanga; Industrial Economist
- August 21: Ministry of Communication, Transport and Construction  
Directorate of Planning and Research  
Mr. A. Temba, Director
- August 22: Sugar Development Corporation  
Mr. C. Lyamba, Director of Operations
- August 23: University of Dar es Salaam, Library  
Mr. J. B. Newa, Chief Librarian
- August 30: Mr. Ali Sheriff, Director, Sheriff Dewji & Sons of  
Arusha.

SPECIFIC INFORMATION NEEDS OF INTIB USERS

(Samples based on returned responses)

	USER	CONTACT	SPECIFIED NEEDS
A	<u>CONSULTING INSTITUTIONS</u>		
	1. Industrial Promotion Services (T) P.O. Box 9241, Dar es Salaam	M. Krishnaswami, Projects Promotion Manager	<ul style="list-style-type: none"> <li>- Investment opportunities</li> <li>- Industrial Information</li> <li>- Project profiles in other countries</li> <li>- Patents &amp; Licences</li> </ul>
	2. TEMDO P.O. Box 6111, Arusha	G. Msolla, Director General	<ul style="list-style-type: none"> <li>- Engineering designs for machinery, dies, moulds, jigs and fixtures,</li> <li>- Manufacturing process flow sheets,</li> <li>- UNIDO/INTIB Services,</li> <li>- Reliable foreign contacts</li> <li>- Patents &amp; licences</li> </ul>
	3. Tanzania Investment Bank TX: 41259, Dar es Salaam	A.U. Kibona,	<ul style="list-style-type: none"> <li>- Appropriate Technologies,</li> <li>- Statistical information on market performance &amp; industrial production,</li> <li>- Machinery &amp; equipment,</li> <li>- Technological information</li> </ul>
	4. IPI P.O. Box 35075, Dar es Salaam	E. Th. Protzen, Technical Manager	<ul style="list-style-type: none"> <li>- Wind power, solar power &amp; hydraulic rams for water pumping systems</li> <li>- Solar power for refrigeration</li> </ul>

SPECIFIC INFORMATION NEEDS OF INTIB USERS  
(Samples based on returned responses)

	USER	CONTACT	SPECIFIED NEEDS
	IPI		<ul style="list-style-type: none"> <li>- Biogas application,</li> <li>- Alcohol distillation and application,</li> <li>- Fuel saving techniques for petrol engines,</li> <li>- Refractory bricks - improvement</li> <li>- Glazes development</li> <li>- Edible oil, soap and sugar production on small scale</li> </ul>
B	<p><u>INDUSTRIES</u></p> <p>1. Pulp and Paper Board Mills Box 1894, Moshi</p> <p>2. SUNGURATEX P.O. Box 2621, DSM</p>	<p>S. Vaidya Project Engineer</p> <p>M. Ali Chemical Engineer</p> <p>P.F. Mfundo Ag. General Manager</p>	<ul style="list-style-type: none"> <li>- Translation Services</li> <li>- Chemical pretreatment of ground wood pulp after steaming</li> <li>- Chemicals &amp; heat recovery from pulping liquor;</li> <li>- Preparation of Sulfite liquor, and entire range of bleaching &amp; pulping chemicals;</li> <li>- Caustic soda by the lime-soda process on small scale</li> <li>- Calcination of lime using wood fired kilns</li> <li>- Productivity improvement;</li> <li>- Foundry development for local production of good quality spare;</li> <li>- Manufacture of accessories;</li> </ul>



	USER	CONTACT	SPECIFIED NEEDS
B	<b>INDUSTRIES (CONT'D)</b>		
	3. URAFIKI P.O. Box 20842, DSM	A.M.A. Sirima Chief Engineer	<ul style="list-style-type: none"> <li>- Engineering design for simple machines; jigs and fixtures;</li> <li>- manufacture of own spare parts;</li> <li>- Import substitution in textile sector;</li> <li>- UNIDO/INTIB Services</li> </ul>
	4. FAHARI FRUIT PRODUCTS LTD P.O. BOX 4162, DSM	V.S. Sharma Consultant Food Technologist	<ul style="list-style-type: none"> <li>- Development of carbonated soft drinks; based on local fruits;</li> <li>- extraction of essential oils from citrus fruits;</li> <li>- Legal requirements;</li> <li>- UNIDO/INTIB Services</li> </ul>
	5. KIDC P.O. Box 972, Moshi	J.L. Angwazi Director	<ul style="list-style-type: none"> <li>- R&amp;D in earthen &amp; stoneware ceramics and glazes</li> <li>- Briquetties from rice &amp; coffee husks;</li> <li>- Ailn furniture;</li> <li>- Refractory bricks;</li> <li>- Gypsum mould preparation;</li> <li>- Market research for products;</li> <li>- Maintenance &amp; repair;</li> <li>- Quality control;</li> <li>- Fine measurements technology;</li> <li>- Industrial safety precautions</li> </ul>
	6. MOPROCO, Tanzania Ltd TX: 55346, Morogoro	M.H. Shija Ag. General Manager	<ul style="list-style-type: none"> <li>- Process technologies in the food industry (edible oils crushing techniques)</li> <li>- briquettes from husks</li> <li>- energy saving studies,</li> <li>- market statistics</li> <li>- machinery &amp; equipment information</li> </ul>

	USER	CONTACT	SPECIFIED NEEDS
B	<p><u>INDUSTRIES (CONT'D)</u></p> <p>7. RAJANI INDUSTRIES LTD TX: 41118 Dar es Salaam</p> <p>8. Kiwanda cha Soda Zanzibar (Kampuni ya Coca-Cola) P.O. Box 890, Zanzibar</p> <p>9. Sugar Development Cor. SUDECO</p> <p>10. Sheriff Dewji &amp; Sons P.O. Box 175, Arusha</p>	<p>M. Juma</p> <p>M.A. Ali for General Manager</p> <p>C. Lyamba Director of Operations</p> <p>A. Sheriff Director</p>	<ul style="list-style-type: none"> <li>- Oil milling</li> <li>- Manufacturing margarine</li> <li>- Animal feed</li> <li>- Soapstock utilization &amp; Quality control.</li> <li>- Productivity improvement</li> <li>- Technological information general on soft drinks</li> <li>- Cost control and cost accounting</li> <li>- Improvement of sugarcane breed.</li> <li>- Pest and disease control</li> <li>- Productivity improvement.</li> </ul> <p>Recommendations</p> <ul style="list-style-type: none"> <li>- Tobacco curing, alternative energy sources for</li> <li>- Cashewnut processing;</li> <li>- Cotton ginning improvement;</li> <li>- Decortication of sisal leaves</li> </ul> <p>Needs</p> <ul style="list-style-type: none"> <li>- Plaster bandage manufacture</li> <li>- Glazes from local resources</li> <li>- Improving quality of refractory bricks</li> </ul>

ACRONYMS USED

ATC	Air Tanzania Corporation	NORAD	Norwegian Agency for Development
AICC	Arusha International Conference Centre	SIDO	Small Industries Development Organization, Dar es Salaam
AVI	Audio-Visual Institute Dar es Salaam	SITC	Standard International Trade Classification
BOT	Bank of Tanzania	STAMICO	State Mining Corporation of Dar es Salaam
BET	Board of External Trade, Dar es Salaam	SDC	System Development Corporation of USA
BIT	Board of Internal Trade, Dar es Salaam	SAREC	Swedish Agency for Research Co-operation
BLLD	British Library Lending Division	SKAT	Swiss Center for Appropriate Technology at the Institute for Latin-America Research for Development Co-operation
BRU	Building Research Unit, Dar es Salaam	TBS	Tanzania Bureau of Standards
CDA	Capital Development Authority, Dodoma	TANESCO	Tanzania Electric Supply Company Ltd.
CARMATEC	Centre for Agricultural Mechanization and Rural Technology, Arusha	TEMDO	Tanzania Engineering & Manufacturing Design Organization
DDC	Dewey Decimal Classification	TFNC	Tanzania Food and Nutrition Centre
ESAMI	Eastern and Southern Africa Management Institute, Arusha	THA	Tanzania Harbours Authority
ESA	European Space Agency Information System	TLS	Tanzania Library Services
FAO	Food and Agricultural Organization of the UN	TALIS	Tanzania Literature Service
GATE	German Appropriate Technology Exchange	TANDOC	Tanzania National Documentation Centre
INTIB	Industrial Technology Information Bank of UNIDO, Vienna	TIRDO	Tanzania Industrial Research and Development Organization
IPI	Institute for Production Innovation	TISCO	Tanzania Industrial Studies and Consulting Organization
ITDG	Intermediate Technology Development Group, UK	TNSRC	Tanzania National Scientific Research Council
ISIC	International Standard Industrial Classification	PDC	Tanzania Petroleum Development Corporation
KIDC	Kilimanjaro Industrial Development Centre	TANRIS	Tanzania Research Information Service
L.C.	Library of Congress Classification	TIC	Trade Information Classification
MEIDA	Metal Engineering Industries Development Association, Dar es Salaam	TPRI	Tropical Pesticides Research Institute, Arusha

TPI Tropical Products Institute  
now Tropical Development &  
Research Institute, TDRI of  
U.K.

UDC Universal Decimal  
Classification

UNESCO United Nations Educational  
Scientific & Cultural  
Organization

UNIDO United Nations Industrial  
Development Organization

VITA Volunteers in Technical  
Assistance