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

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* 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.

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Introduction:

Developing nations have come to recognise that industrial and technological information is an important element in their efforts to accelerate and expand industrial development. Though an increasing number of industrial and technology centres have been established to provide industrial and technological information to developing countries, such information has not fully been utilised by these countries. Success in utilising Industrial Information has varied due to differing economic and industrial processes these countries are going through.

In an attempt to ensure constant and continued flow of such information, UNIDO has created information facilities by establishment of INTIB (Industrial and Technological Information Bank). The developing countries and Zambia in particular require Industrial and Technological Information which on itself has not been able to develop and produce due to obvious reasons of low level development in science and technology which has been as a result of inadequate finance, scientific base, equipment and qualified manpower.

Therefore, due to lack of highly development source of scientific, industrial and technological information Zambia will continue to rely on such information from various source from the developed nations such as the INTIB at UNIDO and thus the need of strengthening the linkage of local technological development institutions and INTIB for the enhancement of local industrial and technological development. Thus in the final analysis creation of industrial structure conclusive to a national sustained economic growth. In Zambia the institutional structure on dissemination of industrial and technological information require restructuring and strengthening. This will in the long run enable a comprehensive transfer of technology and industrial information adaptive to conditions obtainable in Zambia.

ZAMBIA's POLICY OBJECTIVES FOR SCIENTIFIC INDUSTRIAL RESEARCH DURING THE THIRD NATIONAL DEVELOPMENT PLAN

The Party's manifesto for the decade 1974-84, state that the Party will strengthen and expand the scope of the National Council for scientific Research, support the research departments of the University of Zambia and coordinate and rationalise all the activities of research institutions in Zambia.

The National Council for Scientific Research was established by Act of Parliament in 1967 with Statutory faction to advise the government on scientific and industrial research policy and to co-ordinate research activities in the country on national wide basis. The National Council for Scientific Research also has a Documentation and Scientific Information Centre whose major functions are to collect, produce, analyse and disseminate scientific and technological information for the needs of the NCSR research units and other research institutions in Zambia. The centre has so far been able to launch a Journal of science and technology and Zambia Science Abstracts.

Policy Objectives:

(i) to strengthen and expand the scope of the NCSR to enable it to effectively carry out its advisory role to the government.

(ii) to rationalise and increase investment and experimental development activity so as to establish and strengthen the infrastructure for scientific and technological research and provide scientific and technical services.

(iii) to create an effective research co-ordination system so that:

(a) an active dialogue and good working relation are maintained between the research organisations; one hand, and industry and extension service, on the other hand, in order to facilitate efficient mechanism of problem identification and increase the utilisation of research results; and

(b) active and close liaison is maintained between sectoral research laboratories engaged in short-term mission oriented projects, and the specialised laboratories of research of the NCSR and UNZA

(iv) to increase the number of indigenous scientists and engineers in the Public and Private Sectors so as to effectively use science and technology in enhancing self-reliance as a development strategy.

(v) to establish scientific careers structures, with attractive conditions of service to ensure that qualified indigenous scientists, technologists and technicians will be retained in their various organisations; and

(vi) to strengthen the implementation of the Industrial Development Act of 1977 by establishing, within the NCSR, materials testing and product quality control laboratories, and a technology assessment unit for assessing foreign technology to be imported, and monitoring its performance and areas of adaptation.

ROLE OF INDUSTRIAL AND TECHNOLOGY INFORMATION IN ZAMBIA.

Zambia like other developing countries lacks a strong industrial base that should support its economic development programmes due among many other factors an industrial and Technology System. This situation has therefore called for transfer of technology and industrial know-how from the developed countries of the North. The transfer of technology in our countries defined as a process of obtaining theoretical and practical knowledge and industrial know-how from the industrialised countries with a view to creating and actually using new and appropriate production systems.

The arguments that follow on transfer of technology through various ways stems from the fact that, most of Third World Countries (TWCs) Zambia included, lack technical and scientific capacity in other productive system and that these are some of the economic factors which help the economy to grow and develop, their absence causes retardation in the economy.

Other visible factor in the economic development of the TWCs which has inhibited economic growth is the absence of investment capital, managerial and technical skills and other support services required in the production processes to create a self sustaining economy.

Zambia like other developing countries through various institutions attempts to find ways of creating an own industrial and technology information base which could be disseminated to both the agricultural and industrial sectors. Thus with a well structured and developed institutional infrastructure the country would be able to acquire and disseminate suitable and appropriate technological information to the users. The transfer of industrial and technological information in the Zambian situation should involve the following stages:

(a) Identifying needs and alternative and appropriate technology.

(b) Selecting the right technology for use in the agricultural and industrial sectors.

(c) Adapting the imported technology to the local conditions.

(d) Review and assessment of contract procedure in transfer of technology.

(e) Development of techniques futher according to local conditions and therefore gradually gaining autonomy, by innovating, adoption and adaptation based on the skills that have already been mastered.

ELEMENTS FOR EFFECTIVE INFORMATION FOR INDUSTRIAL DEVELOPMENT.

Zambia has little technological capacity of its own to provide necessary industrial and technological information of its industrial sector and therefore calls for creation of a strong institutional infrastructure that should strongly involve users of the information (industry), Research Institution such as the N. C. S. R. so as to undertake the following:

1. Feasibility studies and market surveys prior to investments.

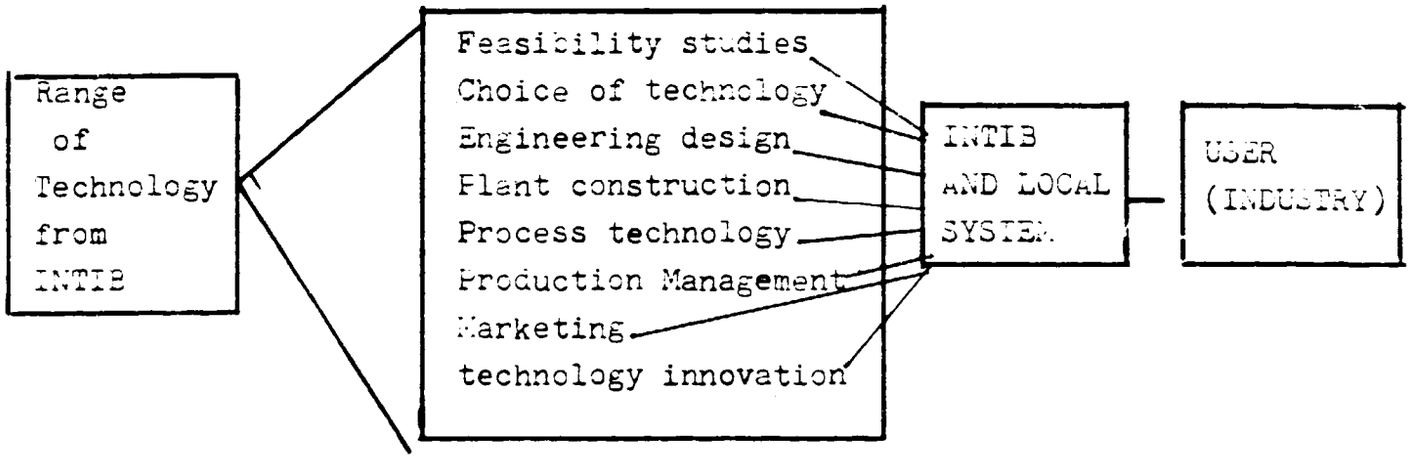
2. Determining the range of technology available and be able to choose the most appropriate.

3. Engineering design of new product and selection of machinery to be used.

4. Plant construction and selection of plant and machinery.

5. Assessment and determining of process technology.

And since there is need for creation of a strong industrial and technological information system in Zambia, the local institutions who have been created for that purpose should have a strong link with INTIB which has collected a wide range of this information and it should be encouraged that the local institutions constantly liaise with INTIB on latest information available and joint projects on the following aspects should be worked out taking into account local conditions.



For Zambia's Industrial Sector to benefit from Information from INTIB the above aspects should be assessed and adapted to conditions obtainable in the country. This relationship would enable the local R and D institutions devise programmes and research activities in line with the requirements of the industry.

EXISTING AND POTENTIAL INFORMATION SYSTEMS, SERVICES AND NETWORKS

The growing importance of the role of industrial and technological information, socio-economic information and other types of information in national development is one of the characteristic features of the scientific and technological revolution. In Zambia, such information is a constituent element of research and development. The fact is that conversion of industrial and and technological information into direct productive forces has largely led to the intensification of the flow of information between different sphere of science, technology, production and consumption.

To make the use of this information for national industrial and economic development, it is imperative that the country conceive and set up a rational organisation of the process of the flow of information and with the use of modern methods and means and the organisation form of the activity constituting an information system.

INFORMATION SYSTEM : FOR RESEARCH AND DEVELOPMENT

Acquisition and sharing of industrial and technological Information is essential for successful research endeavors for national development. Zambia through various research institution has been involved in the introduction and adaptation of technology and concepts developed elsewhere. The basic strategy for establishment of an institutional infrastructure is an attempt to develop the national capability for generating indigenuous technologies for acquiring and adapting external technologies so as to increase national production and to improve the social services. This process of creating, innovating, adapting and effeciently applying and disseminating knowledge, skills and techniques to meet the economic and social needs of the society dearly indicates the need for creation and strengthening of industrial and technological information system in the country through development of institutional structure for that purpose which rests in the policies and strategies for economic and social development.

Zambia has seen the need for such institutional net work and the government through the existing institutions has emphasised the need for co-ordinated and linked information system which should be able to undertake the following:

(i) identification and compilation of inventories of economic and social needs and the scientific and technological option.

(ii) selection of priorities among economic and social needs and the appropriate scientific and technological option to meet the selected needs.

(iii) choice of vehicle for propagating and application of the scientific and technological options.

(iv) transmission, reception and processing of "feed backs". between R and D institution and the industrial sector.

A. ZAMBIA'S INDUSTRIAL TECHNOLOGICAL INSTITUTIONS

National Appropriate Technology Committee(NACT):

Zambia's National Committee for Appropriate Technology Committee was formed early in 1979. At the time of formation, the committee feel under the umbrella of the office of the Prime Minister and its chairman was the permanent Secretary to the National Commission for Development Planning. The Committee composed of representatives from the following organisations and government departments:

(1) National Commission for Development Planning (NCDP).
(2) Ministry of Agriculture and Water Development (NAWD)
(3) Ministry of Labour and Social Development
(4) Zambia Industrial and Commercial Association (ZIMCON)
(5) University of Zambia (School of Engineering) (UNZA)
(6) Ministry of Commerce and Industry
(7) UNDP/FAO Village Workshops Project.

The other organisations that has joined the committee are:

(1) Village Industry Service (VIS)
(2) Small Industries Development Organisation (SIDO)
(3) Technology Development and Advisory Unit (TDAU) at UNZA.
(4) Zambia Council for Social Development (ZCSD)
(5) National Council for Scientific Research (NCSR).

Functions of the Committee:

(1) to co-ordinate and direct all appropriate technology activities in the country.

(ii) to actively promote the production, distribution and marketing of approved items of equipment and machinery through appropriate agencies and users (industry sector).

(iii) to be the recognised authority on all matters pertaining to appropriate technology and advisors to the government in this field.

(iv) to prepare guidelines for the formulation of government policy (current not there) in this field and prepare proposals for the eventual creation of properly constituted

body for appropriate technology.

(v) to liaise with smilar bodies in the same field; establish subsidiary bodies and

(vi) direct their activities

The committee at this stage does not have the resources and the technological capacity to effectively undertake the above functions. The committee is thus in a process to prepare the setting up of a legally consituted body.

B. Inter Ministerial Committees:

These committees were established by NACT as sub-committees based in ministries to cover the following:

(1) Agriculture
(2) Industry
(3) Community Development and Home Economics
(4) Research

Their terms of reference were as follows:

(i) establish and maintain contact with all technology activities going on in the country within a particular discipline.

(ii) identify areas requiring further immitigations

(iii) promote such projects and activities as are seem to be necessary.

(iv) initiate what ever training programmes may be necessary.

(v) liaison with other sub-committees.

(vi) preparation of regular and special reports required by NCAT.

(vii) initiate and supervise the preparation of full technical discription and working drawing as may be required by end users.

C. Individual Institutions:

(1) Research and Development:

a. National Council for Scientific Research

b. Department of Agriculture (Research Branch)
c. Technology Development and Advisory Unit (UNZA)
D. Copper Mining Technical Services Unit
e. Department of Forest
f. Department of Fisheries Development

(2) Manufacture of Equipment:

a. Ministry of Commerce and Industry
b. Zambia Industrial and Commercial Association .

(3) Import and Export of Agriculture Equipment:

- Ministry of Commerce and Industry through provision of foreign exchange to the importers.

(4) Provision of Finance:

a. Commercial Banks
b. Development Bank of Zambia
c. Agriculture Development Bank
d. Agriculture Finance Company
e. Zambia State Insurance Co-operation
f. Other technical assistance sources

EXISTING AND POTENTIAL SYSTEMS OF INFORMATION DISSEMINATION AND COLLECTION

(1) Development Bank of Zambia:

Projects promotion division: This unit of the bank is charged with promotion of development projects within the bank. The unit operates in liaison with other units with the bank such as the Projects Appraisal and loans departments.

The unit does not have a definite documentation system of information dissemination to the user of various Technological and Industrial Information. The unit only maintains a small library which is mostly used by members of staff from other departments.

The library is maintained by two librarians so far and whose duties are to classify documentation that arrives in the bank and lending of the books to the members of staff. Most of documents found in the library come from outside resources and a number of reports come from researches and studies conducted within Zambia.

Available Information:

(a) Consultancy reports: these are mainly reports done by foreign consultancy organisations on various economic projects (existing or potential) on behalf of the bank.

(b) Feasibility studies: the library also collectes and stores feasibility study reports on various projects that have been done in other countries and which the bank would use to compare to with similar studies done in Zambia.

(c) UN and United Nations Agencies:
These are mostly publications that come from UN specialised agencies. Most of these documents only give information on various activities done by various agencies. Most of the information is rather general.

(d) Industrial Information:
The unit also collects various industrial informations that relate to various aspects of project development. These types of informations are classified according to different sectors e. g. agriculture, agro-processing, engineering and manufacturing etc.

Information in these documents contain the following:

(i) Technologies and Process technology
(ii) Machinery prices and specifications
(iii) Feasibility and Pre-feasibility studies
(iv) Training materials and manpower requirements.

(e) Trade and Trade Promotion:

The unit also have in the library a section where trade information has been gathers from Zambia and from overseas trade promotion agencies, such information has been collected to enable industrialists know Foreign Trade possibilities and potentials. Most of such information is in foreign catalogues and trade directories. The problem so far is that existing and potential industrialists do not have direct access to them.

(f) Financial Institutions:

The unit also receives publications from international financial institution who would possibly be able to invest in the country or help provide finance for various industrial projects in the country. Such informations are from:

(i) World Bank
(ii) United Nations Agencies e. g. UNDP, UNIDO, FAO etc.
(iii) International foundations.

(g) Economic and Statistical Publications:

This section is mainly concerned with books on economics and business studies. These are basically used by officers of the bank. This section also stores statistical publications from the Central Statistics Office. These statistics are most on industrial and agricultural production, income and prices, Internal and Foreign Trade activities in the country.

Manpower:

There is one librarian, and an assistant employed in this section. The unit would need services of documentation officers who would be responsible for collection and gathering and dissemination of industrial and technological information.

Nature of Information Needs:

Though unit has a small library with relevant economic and development information, the bank still requires more and detailed information pertaining projects planning, development and implementation. The bank would need the following industrial and technological information:

(a) Process technologies
(b) Project input requirements and specifications.
(c) Agro and industrial production statistics
(d) Patent documentation
(e) Appropriate technology documentations
(f) Publications on source of information on industrial technologies and conditions of transfer.
(g) Manpower training in areas of information collection, storage and dissemination. Such manpower should have background knowledge in industrial studies, economics, technology and research.
(h) Research reports on Industrial Technology development from other countries.
(i) Dissemination of Information: these need creations of publication and publishing unit within the bank charged with production of documents for use by users of technological information.

Users of Information:

(a) Government industrial establishment
(b) Private industrial projects
(c) Small Industries Unit.

Department of Land use: Ministry of Agriculture and Water Development

The department of Land Use in the Ministry of Agriculture was created to help the other departments of Agriculture and farmers in various aspects of agriculture activities in the country.

The department has six sections and these are:

(1) Land Use Planning
(2) Farm Management
(3) Cartography
(4) Engineering
(5) Ecology

(6) Land development service.

The section identified for the purpose of this survey is Engineering. This section deals with the following aspects of agriculture development:

(1) Development and promotion of Farm Machinery
(2) Development of appropriate farm building
(3) Development of irrigation systems
(4) Assisting the farming country on Agriculture engineering problem.

Activities: Farm Machinery

(a) designing of types of farm tools and machinery.
(b) testing and adaptation of farm machinery which has been imported and could be produced locally.
(c) provision of designs and specifications to producers of suitable farm machinery which local industries would produce.
(d) provision of information on the use of equipmentto farmers.
(e) development of suitable implements used specially by small farms e. g. Ox-drawn equipment for planting, land preparation and harvesting.

Farm Building:
Main area of concern is designing and development of suitable farm buildings for :

(a) Storage of crops
(b) Livestock production
(c) Farm Housing
(d) Farm building materials

Mode of Information Dissemination:

(a) Publications of Research and tests results from Research units e. g. Mt. Malulu in Lusaka and Katopola in Chipata. The unit has a small filing system for this purpose.

(b) Use of engineering assistant who are located in districts.

(c) Documentation of overseas publications on agriculture technologies which farmers and those involved in agro industries would require.

(d) the section conducts training for users of these technologies in farm trainning centres located in almost all districts of the country.

(e) Documentation produced and received by the section are sent to all district engineering assistance who then use them for their extension service work.

(f) Through other development agencies such as SIDC, VIS and other N. G. Os.

Information needs: for producers and users:

The section will need more information on the following:

(1) Machinery and technologies:-

(a) food processing
(b) Agro-processing on small and medium scales.
(c) Farm transport and exerisation
(d) Small farmers hand implements for harvesting, field preparation and planting.
(e) Engineering designs and specifications for producers of farm machinery which could be adaptable in Zambia.

(2) Farm building and structures:

(a) appropriate materials
(b) designs of such structures
(c) irrigation system using non metallic materials.
(d) food storage structures being recently developed elsewhere for adaptation in Zambia.

(3) Training:

(a) Trainning manuals for extension officers in various fields.
(b) equipment and materials for training purposes.
(c) training of officers in information collection and documentation.

Manpower requirements:

The unit does not have documentation officers who have been trained in this field. The unit will thus need such trained officers.

The unit needs more professional and technical staff such as
(a) machinery experts
(b) economists
(c) Research officers
(d) Agromists

These also will be required to have basic knowledge in technology collection, storage and dissemination so as to facilitate a comprehensive technology transfer and development within the agriculture development sector.

Users of Information from the Unit:

(a) small holder farmers
(b) Co-operative Unions
(c) Industrialists specialising in production of farm equipment.
(d) Commercial farmers using mechanised farming methods.
(e) Development agencies involved in development and promotion of agro based industries in Zambia.

Zambia Federation of Employers (ZFE)

The Zambia Federation of Employers is the most central organ of employeers in Zambia. Members comprise both government and private industrial establishment in Zambia. And recently an association of small industrialists have been affliated to Z. F. E..

This employers association provides a useful forum at which business executives exchange ideas on matters concerning business and industrial activites in the country.

SERVICES:

(a) Advisory: The Z. F. E. provides consultancy and advisory services to member organisations on matters of personnel management and industrial management.
It also advises member organisations on matters affecting employee-employee (trade union) relations and including

interpretation of Zambia's Labour Legislation. The Z. F. E. also disseminates and interpretes the party and government social economic policies of industrialisation in the country.

(b) Education and Training:

The Z. F. E. organises workshops, seminars and other forms of training in personnel and industrial management both to employers and employees. And in 1984 with technical assistance of international Labour Organisation (I. L. O.) Z. F. E. in conjunction with Village Industry Service (VIS) and Small Industries Development Organisation (SIDO) have been organising course for small industrial entrepreneurs in industrial and business management. These courses were introduced provide business management skills to small entrepreurs operating small industries and who are unable on their own pay for such training or services. I. L. O. has therefore provided training materials and hand books which have been given to course participants.

(c) Research and Information:

Z. F. E. conducts research on industrial activities in the country and collects industrial information which could be used by member organisations. The other information and documentation come of similar organisations outside Zambia and I. L. O. publications. The Z. F. E. thus maintains a library in which research reports and other trends of business and industrial information are kept. Information documented and stored is as follows:

a. Labour Policies
b. Social-economic policies of Zambia.
c. Quarterly information bulletins.
d. Reference books on industrial management and personnel matters.
e. Industrial relations and operations
f. Industrial publications from other countries and I. L. O.
g. Training materials and books.

The documentation of publications are done the Economics and Research Director with support staff.

Information Needs:

The Z. F. E. has so far only concentrated in provision and dissemination of information mainly in matters concerning industrial and labour relations which is actually the prime function of the organisation.

The Z. F. E. could also engage effectively in the collection and storage of industrial and technological information in Zambia. Thus will need documentation concerning various aspects of technology which member organisations could benefit from and utilise. Therefore the organisations needs more manpower who would be responsible for data collection, storage and dessemination.

Users of Information:

(a) Parastatol industrial establishments
(b) Small Industrialists
(c) Private Industrial establishments.

TECHNOLOGY DEVELOPMENT AND ADVISORY UNIT (TDAU)

The Technology Development and Advisory Unit at the University of Zambia, was established in 1975 to make available its technical expertise and resources in the promotion of Agricultural and industrial development in the country. The main objective of the unit is to stimulate grass root development of the rural areas by means of intermediate or appropriate technology utilising local materials and skill..

Objectives of TDAU:

(a) to help and advise in the design and production of agricultural industrial and household equipment within Zambia.

(b) serves as a development centre for new equipment and processes aimed at replacing imported models.

(c) acts as a clearing house for designs and prototype development for other organisations.

(d) serves as a centre to pool advice from other departments of the University which may be used by industrialists.

Organisation:

The unit is run by a management committee and an advisory committee with membership drawn from National Council for Scientific Research (NCSR), Ministry of Agriculture and Water Development (MAWD), Industrial Development Corporation (INDECO), Rural Development Corporation (RDC), Development Bank of Zambia (DBZ), National Commission for Development Planning (NCDP) and Zambia Co-operative Federation (ZCF).

Activities:

The unit has concentrated most in the areas of appropriate technology development such as:

(a) Alternative energy technology development
(b) Agriculture Mechanisation.
(c) Low cost building materials development
(d) Development of implements and processing plant at prototype level and testing e. g. :
    (1) farm equipment
    (2) harvesting tools
    (3) cultivation equipment
    (4) food processing equipment.

such projects development are then offered to various engineering companies for commercial production and the TDAU play an advisory role so that production of such items are according to specifications laid down.

Other areas:

(a) Consultancy and advisory services to big industries and small scale industries.
(b) Training, information analysis, Data bank and library.

Documentation and Information System:

The TDAU maintains a documentation centre which collects, stores and disseminates information to the public or organisations charged with promotion and development of appropriate technologies. The documentation system used is the SATIS (socially Appropriate Technology International System).

The Centre documents basically Technical Information which has been acquired from Foreign Sources and Reports of TDAU Research activities.

Information Centre Activities:

The documentation and information Centre has been carrying out the follwing activities:

(a) Bibligraphic
(b) Information analysis and clearing house
(c) Data bank
(d) Library Services

Technical Information Documentation:

The TDAU Documentation Centre has collected Industrial and Technological Information documented under the following areas of development activities:

(1) People and Society (general information)
(2) Energy and power
(3) Water sanitation
(4) Focd production and processing
(5) Agricultural emplements and equipment
(6) Health
(7) Manufacturing Services
(8) Building and Construction.

Publications:

(a) Reports of the design and construction water powered technologies e. g. grain milling unit.
(b) Project for local manufacture of wind mills and water pumps.
(c) Use of Wind Energy for water pumping
(d) Designs of Agro-equipment and machinery.
(e) Seminar and workshop proccedings.

Services Provided:

The following services are provided to the business country:

(a) Document loans
(b) Question and answer

(c) Bibliographic searches
(d) Current awareness
(e) Advisory services and training

Manpower:

There is only one officer who is in charge of Documentation of information. There are other officers that assist and there are either engineers and technologists who mainly work on various developmental projects. Thus the documentation officer and project engineers liaise in provision of information requested by prospective entrepreneurs. Dissemination of this information is mainly through engineers who operate with people in the field. There are 4 engineers, three technicians and other support staff at TDAU.

Users of Information:

Information from TDAU is used by business community and rural farming community. Some of TDAU research projects are done in conjunction with other government ministries or departments.

Information needs of users:

The Industrial Sector in Zambia could be generally be divided into two:

(1) the big and modern sector
(2) the small industrial sector.

Therefore prospective users of information could be also divided into these broad categories so are types of industrial information needed.

Industrial and Technological Information Needs:

(1) Process technologies
(2) plant design
(3) Input requirements
(4) Manpower needs and investment
(5) Training requirements
(6) Product specifications
(7) Machinery sources
(8) Patent structures and contractual and legal arrangements

SMALL INDUSTRIES DEVELOPMENT ORGANISATION (SIDO)

The Small Industries Development Organisation was established in 1982 by the Ministry of Commerce and Industry to foster and encourage the development of small industries in Zambia.

Main Objectives:

(a) Formulate, co-ordinate and implement national policies and programmes relating to the development and promotion of small industries.

(b) Carry out research projects, surveys and market surveys on any aspect connected with small industries.

(c) Provide, or assist in providing, training facilities for persons engaged or employed in small industries and co-ordinate the activities of other institutions engaged in such training.

(d) Provide extension, management and consultancy services for small industries.

(e) Promote local and foreign investment in small industries.

(f) Assist in procuring, obtaining or providing supplies, equipment or raw materials for small industries and

(g) Assist in locating and developing industrial Estates, common facility centres and ancillary services.

Services Provided:

(a) Economic Intelligence and Investigation Services:

(1) SIDO thus conducts studies to identify regional prospects for development of industries.

(2) Identifying industrial problems

(3) Provides industrial and economic information to prospective entrepreneurs.

(b) Consultancy Services: in areas of

(1) business management and administration
(2) industrial consultancy.

(c) Technical Services: in areas of

(1) Planning and establishment of enterprises
(2) Provision of factory layout.
(3) Selection of machinery and equipment
(4) Process of manufacture.
(5) Development of product design and quality control
(6) Optimum utilisation of new materials and by-products

It is envisaged that provision of such services to the small industrial units would enhance:

(1) introductory of new innovations
(2) selection and adoption of suitable process of manufacture.
(3) provision of solutions to solve technical problems relating to maintenance of plant and equipment, quality of product, fabrication of tools, and others.

(d) Common Facility Centres and Training:

The industrial extension services provides by SIDO shall include common facility services to under take:

(1) product design development
(2) product testing
(3) Heat treatment, forging, electroplating and precision die-casting.

Also provision of common facility services intended for a group of units, may also be utilised to provide opportunities for on-job training to the workers.

(e) Marketing Aids:

(1) promotion of ancillary relationships between large and small scale units.
(ii) Conducting market intelligence and extension services to promote the marketability of small scale products.

(iii) Provision of training to entrepreneurs in techniques and methods of marketing and to give advice and guidance on matters relating to product design, quality control and standardisation etc.

(iv) Undertaking of compilation and publication of trade directories an information about small scale units, items of manufacture, their geographical location, types of products, suppliers of inputs and buyers of finished products.

(v) Undertaking of market researches to reveal trends in consumer demand, prices, production level, quality control and standardisation.

Information Collection and Dissemination:

The Small Industries Development Organisation has been collecting various information on industrial information. A small Library is being built up and SIDO has employed a qualified and trained librarian. The Librarian work in liaison with Economists and Engineers in the organisation who advise on what type of information is needed for use in their programmes. Other kinds of information is collected from government ministries such as documents and publications.

The Library also collects and compiles various research reports and feasibility studies. So far the library is used by members of staff for references and obtaining industrial information as requested by entrepreneurs.

SIDO has an information officer whose responsibilities is to provide information to entrepreneurs on various projects SIDO is promoting in Zambia.

The organisation also has technical staff that help interpret various industrial information for entrepreneurs which has been collected.

Utilising of local raw materials for the manufacture of consummer and industrial products needs has become very important in Zambia. SIDO has therefore taken the responsi_ bility of kindling an awareness of industrial possibilities and potential in the minds of entrepreneurs. SIDO has prepared model schemes on various industries for the benefit of entrepreneurs.

In case an entrepreneur needs a specific scheme, SIDO helps him in preparation of such schem.

SIDO also prepares technical literature which propective entrepreneurs would benefit from. Such literature has included :-

designs
sketches
drawing on improved machinery

Information on Ancillary Industries:

The modern large scale industries require a wide range of parts, components and sub-assemblies which they can procure from small scale ancillary units or from the plants which may be specially established for the purpose. For this purpose, SIDO has been preparing the following information:-

(a) lists of parts and components that can be made by small scale units for use in big industries.

(b) classification of the large scale industries in the private sector in terms of their requirements of parts and components that can be procured by them from units of small scale sector.

(c) provision of technical know-how to the existing as well as the intending small ancillary units for undertaking the manufacture of parts and sub-assemblies, that can be supplied to large industrial sector.

(d) registration of small scale industries as ancillary units wherever an ancillary relationship exist.

(e) classification of the small industries with details of the parts and components etc; the manufacture of which can be undertaken by them with their existing machinery and know how.

So far industrial information and services are provided through SIDO's two officers; one in Lusaka (Head Office) and Kitwe (first Regional Office).

Manpower:

At SIDO there are two officers responsible for collection and dessemination of information to the prospective entrepreneurs.

(1) the information officer
(2) the librarian

The officers co-ordinate with projects officers and engineers in procuring and compiling of industrial information required by the entrepreneurs.

Information Users:

Most of the users of industrial information at SIDO are entrepreneurs engaged in industrial manufacturing and processing and fall under following categories:-

(a) light engineering
(b) Agro-processing
(c) chemical processing
(d) wood processing
(e) ceramics
(f) building materials production
(g) textiles

The kinds of entrepreneurs SIDO are promoting at giving assistance are mainly those that fall in the small scale sector

Information Needs:

The small scale sector by its nature and level of activities, requires comparatively lesser capital, technical and managerial inputs and will therefore required information that is simple and ease to understand.

The following have been identified as required industrial information:

(1) designs and plans for small scale industries technologies.
(2) sources of supply of such technologies.
(3) process technologies

(4) input requirements
(5) management and skills training materials
(6) machinery supplies.
(7) research information on various small scale industries.
(8) plant lay-out

Services Needed: SIDO information unit requires :

(a) training materials.
(b) publication equipment
(c) information storage materials
(d) consultancy services training for staff.
(e) training of staff in information documentation.

Rural and House Hold Energy Development (RHED).

Until now the main emphasis in energy sector planning has been on commercial energy services. The energy needs of rural and semi-urban areas have become a major concern of this newly created unit.

A number of activities have been initiated to address the problem of rural and household energy supply. Since this sector affects greatly the industrial development in the country and its importance to general rural and agricultural development, there is need for a systematic energy development.

Objectives:

(i) the unit attempts to assist local authorities and field organisation in the development of local energy development plants.

(ii) to participate with other institutions in developing and implementing national industrial programme in which energy is an important factor.

(iii) to identify supporting measures for the development of reliable renewable energy technologies.

Operational Activities:

(1) Local energy plans:

(a) formulation of plans for future development in the field of rural and house hold energy. This done through surveys conducted in the provinces and districts.

(2) National Integrated Plans:

These involve specific fields of energy usage activities done in conjuction with other institution e. g. UNZA in (a) wood fuel
(b) water supply

The RHED provides technical support to such activities.

(3) Renewable Energy Technologies:

In additional to convention energy sources Zambia has, the unit also considers involvement of other types of technologies which could be used in industrial activities such as:

(a) solar
(b) photovoltaic
(c) wind
(d) small hydro schemes
(e) biomass

Services: Provision of energy information on:

(a) National energy consumption
(b) Projected national [illegible] consumption and production.
(c) base data for government energy policies.
(d) availability of and development other kinds of energies.
(e) guidelines to rural electrification
(f) energy surveys and monitoring reports
(g) development of renewable energy technologies
(h) energy conservation.

Information Collection and Dissemination:

The unit is in the process of setting up a data bank. The unit has acquired a small computer for the purpose.

The unit is collecting information on:

(a) Renewable energy resources
(b) Energy consumption and production
(c) Energy conservation
(d) National imports on gaseous and liquid fuels.
(e) Research reports on renewable energy technologies development in the country.

Dissemination of information is done through publication of the unit through various collaborating organisations such as:

(1) Department of Energy
(2) Renewable Society of Zambia
(3) Energy Council of Zambia

Manpower:

The unit has officers namely:

(a)	Planning Officers	2
(b)	Economist	1
(c)	Engineers	2

Training requirements: The unit plans to provide specialised training to officers in the unit in :

(a) Information documentation
(b) Industrial Energy Conservation

Information Users:

(a) The energy department (government)
(b) Ministry of Agriculture
(c) Zambia Electricity Supply Corporation (ZESCO)
(d) Zambia Energy Council
(e) Mining Companies
(f) General Industrial Sector (Small and Large)

Information Needs:

The unit would need more information on:

(a) Renewable energy technologies
(b) Usage of various energy technologies
(c) Research Reports on Energy Technologies
(d) Plans and designs for energy technologies for use in industry and agriculture.
(e) Potentials and characteristics on various renewable energies e. g. solar, photovoltaic, wind.

RURAL INFORMATION SERVICES (MAWD)

This unit falls under the department of Agriculture in the Ministry of Agriculture and Water Development.

Activities: the main activities of the unit is to provide agriculture information to the farming country in Zambia.

Information Collection:

The unit collects various information from other departments in the minitry for publication through various media.

Information is collected through the following ways:

(a) field visits by HQ staff.
(b) reports from field staff.
(c) Experts publications from other departments and organisations.
(d) Acquisitions of farming publications from overseas and other countries.

The unit maintains a small library where they keep publications and other books on agriculture.

Dissemination of Information:

(1) Radio Broadcasts: The unit conducts radio broadcasts on matters of agriculture every day in English and local Zambian languages. Information relayed in on crop farming, irrigation systems, usage of equipment and machinery.

(2) Film strips: The unit also conducts slide shows to farmers on crop and live stock production.

(3) Development Support Communication (DSC) - this section has been established with the help of the Netherlands Government. The section conducts film shows (motion) to the farming community on the aspects of agriculture.

(4) Publications: The unit published various types of information through newspapers and own publication such as :

(a) Farm Magazines
(b) Question and Answer radio forum books.
(c) Posters.

(5) Other publication: these are publications from other countries which are used on radio broadcasts or translated into local languages for use of farmers.

Manpower:

The unit has officers in all provincial headquarters of the country and districts. These are information officers. The work involves collection and dissemination of information through various media.

Most of their staff are recruited from agriculture colleges with training in Agriculture (crop and animal sciences), Agriculture Engineering and Agriculture Management.

They are trained initially on the job and through workshops in information services. The unit has adequate staff except that they need more training.

Training Needs:

The unit would like to have professional officers in information dissemination and documentation. Thus major concern is to provide information needs for the rural and small farmers and would require provision of easy understood and adaptable information.

Information Users:

The unit attempts to disseminate information to kinds of farmers who would not be able to secure own consultancy and farming services especially rural and peasant farmers. And Zambia with almost 60% of its population in the rural areas and engaged in small scale farming, the unit attempts as much as possible to provide extension and management services to this farming community.

Information Needs:

The unit requires more and recent agriculture information in new farming techniques, appropriate rural farming equipment and machinery. Thus calls for strengthen of this unit in terms of staff training, equipment and other materials for use in publishing of required information for the farming community and those engaged in agro-industries. Other types of information the unit would require are related to the development of agro-based industries such as:

(a) Cash crop processing technologies
(b) desingns of appropriate agro-industries machinery.
(c) models for establishment of multipurpose workshop of production of simple agriculture tools and equipment.
(d) Information on sources of various technologies for use in rural areas agriculture and agro-industries development.

Ministry of Commerce and Industry:

Ministry is main source of legal, company, trade, import/export, and industrial information.

It has six departments:

(a) Internal Trade: responsible for import control, import licensing and trade licensing.

(b) Foreign Trade Department:

The role is to promote trade activities between Zambia and other country through Zambia Export Promotion Council process information on trade fair, sale promotion mission of Zambia made goods. Market research, training and seminars. A Trade Information and Documation Centre was

established with the depart. in 1980 with help of EEC/ITC.

Information Services: Information on:

(a) products
(b) markets
(c) trade regulation
(d) statistics
(e) inquires pertaining to trade for manufactures.

Department of Industry:

The department was created to promote industrial development in areas of manufacturing and liaises with INDECO on the implementation of projects that the government promotes and under this department was the inactment of Industrial Development act which the department administers and implements and SIDO act for creation of an organisation charged with the promotion of small scale industries.

Department of Patents, Design, Trade Marks and Companies:

This department administers the companies at (1921 amended 1965), the Patents and Trade Mark acts (1958 amended 1965), Registered Designs act (1958 amended 1965) and the Registration act (1932 amended 1965).

These acts provide to the business community legal information of use to any type of business organisation; large and small.

Services: Different units within the department provide various types of information pertaining to various aspects of the business undertaking and industrial information. The Department of Patents, Trade Marks and Companies and Business name is a major source of industrial information for use by the industrial sector.

This department's activities are cardinal to various industrial information especially that which has already been published and a source for various information on industrial technologies obtainable in Zambia.

(a) Companies Office: The companies office is responsible for formation, management, and adminstration of limited liability companies. The office also conducts registration of all foreign companies operating in Zambia.

(b) Patents Office: The office maintains a register of patents which is open to business community for inspection. The patents office also provides information to the public on:

(i) identified new products
(ii) processes technologies
(iii) materials and components
(iv) market research
(v) specifications of the patents.

It should be noted that most of the patents registered are of foreign origin and are registered for a period of 16 years.

(c) Trade Marks Office: This section is responsible for registration of symbols used to indicate ownership and to distinguish between products. The office provides information all registered users, conditions.

(d) Registered Design Office: The office provides registration for industrial designs and these have been defund as features of shape, configuration, pattern or ornament applied to an article by an industrial process.

(e) (Patent and Documentation Centre)

The principle role of this section is to disseminate and acquire technological information contained in Patents documents.

The stock of information covers:

(i) trade marks
(ii) limited liability companys.
(iii) parternships and other form of business
(iv) industrial designs
(v) patents
(vi) technological contents.

The centre also documents trade mark and patent journals from overseas countries e. g. U. K., Ireland, Malawi,

South Africa, Zimbambwe.

Publications: The centre publishes a monthly journal of Patents, Trade Marks and Designs. It also publishes registration, and licencing of industrial property rights.

Users of Information:

(a) lawyers acting for foreign companies
(b) Representatives of both foreign and local companies.
(c) Local business men.
(d) Individuals and public institutions.
(e) Trade associations : e. g.

(i) clothing and allied industries association
(ii) manufactures association of Zambia.
(iii) Hotel and Catering Association of Zambia.
(iv) Master Printers and Newspaper promoters association
(v) Zambia National Council of Commerce and Industry, Small Scale Industries Association.
(vi) Chambers of Industry.

Manpower: The department of Patents, Trade Marks and business names does not have officer in other provinces except at the headquarters.

The department has 4 professional and 16 administrative officers assigned to the 3 sections of the department.

The staffing of the department is done according to government regulations on establishment. These officers are required to attend to all enquiries that come from the provinces and districts.

Training Requirement: Main training requirements are in area of information dissemination and documentation, publications and production of technological abstracts.

Information Needs: There is need for the department to collect other kinds of industrial and technological information other than that comes through patent registration etc.

Mostly required information is in area of industrial production of capital and intermediate goods.

National Council for Scientific Research (NCSR)

The National Council for Scientific Research was established in 1975 to co-ordinate research activities in the country. The functions of NCSR are conducted through various committees such as:

(i) Research policy and co-ordinating committees
(ii) Research advisory
(iii) Executive Committee
(iv) Manpower Committee

The NCSR has 4 technical units that are responsible for various technological activities.

(a) science and technology services units
(b) research and development units
(c) R and D agriculture and Natural Resources Unit
(d) Industrial R and D units.

And the NCSR has also an R and D and S and T Planning and User Liaison Unit responsible for liaison and documentation of research activities.

NCSR Research and Technological Activities:

(1) Live stock and Pest Research: at Mt. Makulu, Chilanga.

(a) Identification of physiological, nutritional and Microbiological factors that act as constranits to development of live stock.

(b) Development and promotion of low cost feeds for live stock.

(c) Evaluation of available agricultural products and agro industrial wastes for production of stock feeds.

(2) Tree Improvement Research: Kitwe

(a) indification of the ecology of trees, herbs etc which show great potential as food sources, timber, medicinal and other chemical industrial values.

(b) carrying out genetic, physiological and silvicultural research to improve forest tree of economical value.

(3) Water Resources Research: Kitwe

(a) promotion of national development and conservation.
(b) monitoring water resources.
(c) adopt and promote suitable techniques for water treatment.

(4) Cartographic and Location Analysis: Lusaka.

(a) quantitative locational analyses of resources data.
(b) provision of cartographic services to other sections of N. C. S. R.

(5) Industrial Research and Development: Lusaka.

(a) Building Research: on

(i) local raw materials for building materials.
(ii) designs and materials for rural and low cost housing.

Food Technology Research: Lusaka.

(a) preservation of raw food materials.
(b) promotion and dissemination of appropriate low cost food processing technologies in rural and peri-urban areas.
(c) development of nutritions foods.
(d) dissemination of simple processes making of non - fermented drinks
(e) development of confectionery products bared on cassava/wheat composite.

Nuclear Research: Lusaka.

(a) promotion and development of nuclear techniques in research, industry and agriculture.
(b) development of safe radio active waste management
(c) development of nuclear analytical service.

Industrial Mineral Research: Lusaka.

Objectives:

(a) to contribute to the knowledge about local industrual minerals and to the promotion of their industrial uses.
(b) advisory and consultancy services to public and private companies.
(c) to develop, adapt and promote technologies in industrial minerals for self reliant economy.

Energy Research: Lusaka.

(a) to develop or adapt to techniques for generating energy for domestic and industrial operations from various energy sources in the country.
(b) research in production of solid fuels from waste products of loal.
(c) development of briquettes.
(d) promotion of biogas systems.
(e) development of efficient technologies for production and utilisation of charcoal.
(f) development/adaptation of technologies for production of power alcohol.

DOCUMANTATION AND SCIENTIFIC INFORMATION:

(a) The NCSR has a documentation and library services in the area of science and technology other libraries nave been established at Mount Makulu and Kitwe. The libraries provides information for members of staff and other qualified personnel, literature and reference services. The libraries also procures local and overseas documents.

(b) Publications: The documentation centre also publishes the following publications:

(i) Zambia Science abstracts and directories
(ii) Zambia journal of science and technology and technical reports on NCSR activities.

(c) Information Materials:

(i) Zambia science abstracts
(ii) Directory of scientific organisation in Zambia
(iii) Union list of scientific and technical periodicals in Zambia.
(iv) Bibliography of NCSR activities
(v) Who is who in Science and Technology in Zambia.
(vi) technical reports.

Services:

(1) Materials Testing Services:
The NCSR provides services for testing for:

(a) Textile fibres, yans and fabrics
(b) Cement aggregates for various concreate formulars.
(c) Metallic materials (Planned)

(2) Printing and Reprographic Services:

(a) Printing of journals, abstracts, technical reports
(b) Graphics - design, layout and photolithography.

(3) Technical Services:

(a) repair and service of research equipment for NCSR and other organisations.
(b) designing and construction of simple modification to existing equipment and instruments for research.
(c) design and fabrication of research tools and equipment for N. C. S. R. and other organisation.

Manpower:

The unit is currently engaged in staff development and training for officers who will man the documentation centre. The unit has been training officers with background academic attainment in:

(a) physical sciences
(b) Natural sciences
(c) Biological sciences.

Thus, the unit need training support of such officers in indentification and collection of technological information in the fields mentioned above.

Needs of the Unit:

The unit requires more information storage materials and equipment such as:

(a) micro fiche cameras
(b) Micro fiche films
(c) Telex facilities for communications
(d) Computers for research and information storage.

Information Users:

Most of the clients of NCSR are those in the manufacturing sector and the government institutions involved in promotion of various projects that use technologies developed at NCSR. Most of the information is provided on request by the prospective users especially in the field of process technologies. The unit scientific and documentation officers are responsible for the dissemination of such information to the prospective users.

Process technologies and technological information developed by NCSR are provided to the users at a fee. This has caused difficulties for prospective entrepreneurs have access to technologies developed by N. C. S. R. because they are unable to pay such fees. The most had hit are entrepreneurs from the Small Scale Sector who have relatively small capital base.

Zambia Industrial and Commercial Association: ZINCOM

The Zambia Industrial and Commercial Association (ZINCOM) is an organisation which was established by Zambias business community to help and assist promote the development of trade, Commerce and Industry. ZINCOM provides information to the business community (member organisations) which encludes information geared to provide diversify exportable products.

ZINCOM INFORMATION SERVICE AND SYSTEMS:

The ZINCOM is currently in the process of strengthening their information service unit, which will be responsible for storage, retrieval and dissemination of industrial and technolo-

gical information ot its member organisations. The unit is thus in the process of acquiring various types of documents relating to:

(a) import/export information
(b) training
(c) company and investment information
(d) information from Research Institutions and government documents.

For effective provision and dissemination of information, the ZINCOM information unit is working on the following system of information collection and storage.

(a) Catalogue cards and cabinets - these will contain information on:
    (i) product profiles
    (ii) company profiles
    (iii) export/import enquiry profiles

(b) Photocopier - This will be used for reprography for dissemination of information selectively.

(c) Bulletins - The unit has already started production of a Newsletter and plans are to start publishing journals, directories for exporters and importers and a handbook for members.

(d) Computer - This would be used for storage and recall of ZINCOM information.

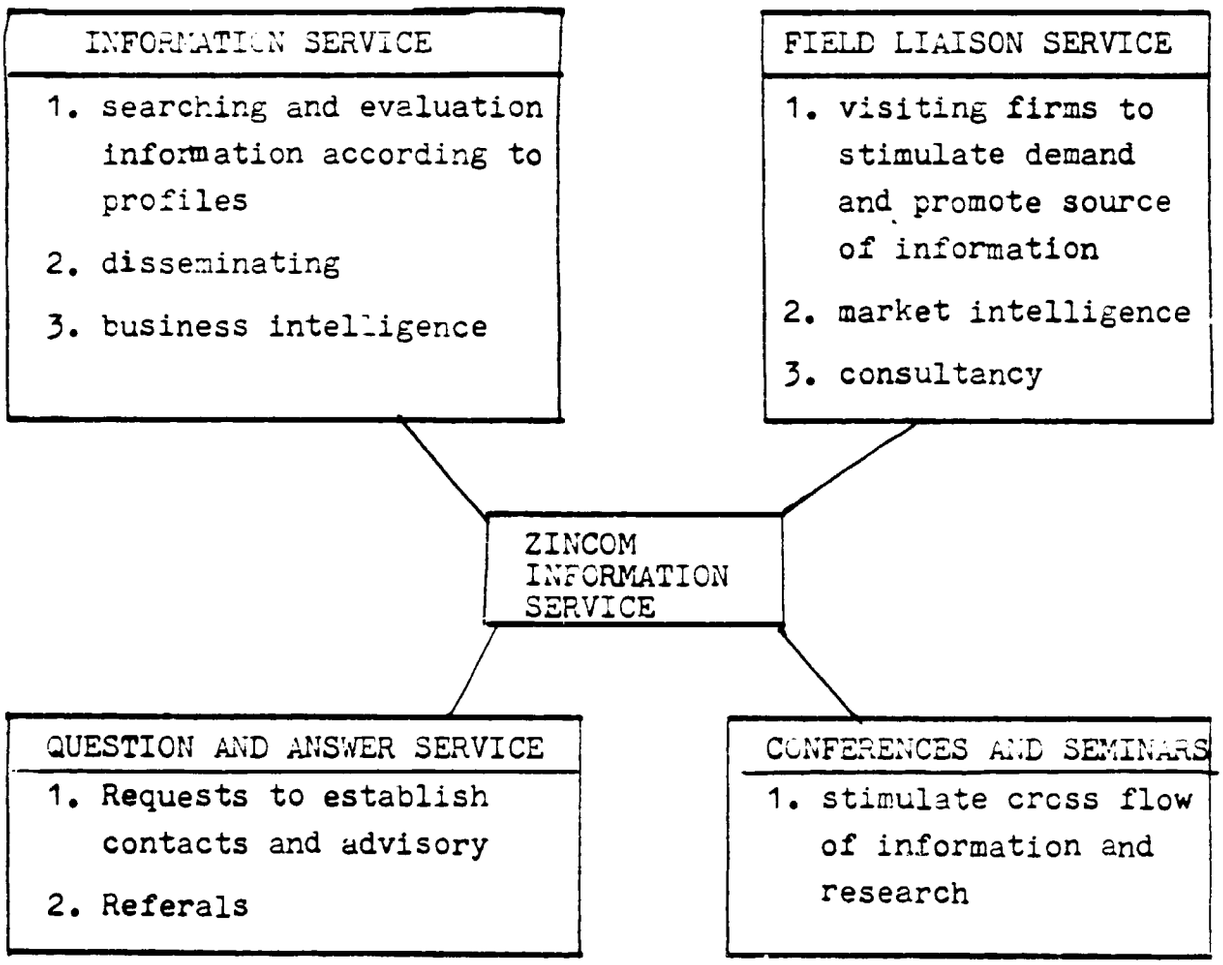
(e) Other systems: The unit proposes to include the following:
    (i) bibliographic service
    (ii) loan service indexing and abstracting
    (iii) research, inquiry and referal service
    (iv) current awareness and liaison service.

Services: The unit will also be charged with responsibility of

(a) conducting market intelligence
(b) consultancy and advisory
(c) training
(d) seminars and workshops.

Information Dissemination Service:

The diagram below is the proposed structure of ZINCOM information dissemination service:



ZINCOMS INFORMATION NEEDS

Though there is no keen information on the exact information needs of member organisations, ZINCOM has identified the following information requirements for the unit.

(1) development new and product information
(2) Import/Export Information
(3) Training information
(4) Company and legal information
(5) Instruments information
(6) Scientific and Technical Information (STI)
(7) Statistic information.

Information Users:

Most of information users are member organisations, though the Association will also be able to provide such information to new members. Member organisations and enterprises fall under various chambers of commerce and industry and trade associations.

Manpower:

Currently there is one officer who is organising the information unit. They will definetely need more trained staff in information and documentation. Thus need for assistance in training of such officers. Definate staff establishment will be finalised which the unit becomes operational.

TECHNICAL LIBRARY AND INFORMATION SERVICE:
(Zambia Consolidated Coppermines (ZCCM).

The technical library and information service of ZCCM is responsible for collection and dissemination of technical information to the mining industry and Mining related industries.

Type of Activity: Bibliographic and library services.

Services Provided: the unit provides the following services to the prospective industrialists:

(a) Document loans
(b) Advisory services
(c) Bibliographic searches
(d) Reprographic services
(e) Translations and abstracts.

Information Documentation:
The unit uses the universal Decimal Classification (UDC) in the documantation of information.

Types of Information:

(1) Abstracts - prepared from papers published in the periodical literature and grouped according to subject in UDC order. A subject index and a patent index is also provided.

(2) Technical News Items:-These are basically notes of current development throughout the world of interest to the mining industry.

(3) Research Reports: These are generally surveys conducted on request by Industrialist and research work done elsewhere in field of mining.

(4) Technical Library Services:- The technical library provides the following information:-

(a) technical books
(b) pamphlets and translations
(c) selected standards and patent specifications
(d) New trade literature
(e) periodicals and technical journals.

Subject coverage:
The information documented lowers like the following aspects:-

(a) Mining and mineral processing
(b) Mechanical engineering
(c) Electrical engineering
(d) Metallurgy
(e) Patents.

Publications:
The unit publishes the following publications:-

(1) Survey of Technical Literature
(2) Zambia patent bulletins
(3) Company reports supplement.

Manpower:
The unit has an Electrial staff of 7 divided into the following categories:

(1) Head of Technical Library and Information services
(2) Technical Information Officers - 3
(3) Librarian - 2
(4) Editorial assistant - 1

Officers in the technical Information service have background qualifications in Natural Science with attainments up to MSC levels and the Librarians are both university graduates in library studies.

Users of Information:

The unit basically serves the requirements of the mining sector and a few companies engaged in mining related activities. Prospective entrepreneurs in related activities are free to consult Technical Information for assistance in retrieval of information required to the problem they have.

Information Needs:

The requirement of the mining industry will depend on types of problems confronted and needs for acquisition of recently developed mining and mineral processing technologies. Also there are information which needs to cater the small mining sector which is introduced in mining and quarrying. Other kinds of information would be on proces technologies for production of finished products other than primary processing.

The users of such information would also need to know:

(a) Sources equipment and machinery

(b) Contractual arrangements

(c) Consultancy services provided by suppliers of machinery

(d) Training requirements and other services provided.

Village Industry Service Information Unit:

The Village Industry Service (VIS) was established in 1976 by the President Dr. K. D. Kaunda to promote rural based small industrial activities for income generation self sufficiency and employment creation.

V.I.S. economic development programmes emphasise creation and development of village and cottage industries that utilise to skills and raw materials.

Main areas of V. I. S. activities:

(1) Food Processing:-

(a) Oil extraction

(b) Dairy products

(c) Grain Milling

(d) Fruit and vegetable processing and preservation

(e) Bee keeping and honey processing.

(2) Metal and Chemical Processing:-

(a) Washing and laundry making

(b) Poltery and chalk making

(c) Lopper and other metal fabrication

(d) Manufacture and repair of farm implements

(e) Manufacture of food storage structures.

(3) Building Components and Materials:-

(a) Brick Making

(b) Roofing tiles manufacture

(c) Clay pipes for drainage and carrying water

(d) Cement /filere roofing materials.

(4) Leather Production:-

(a) Leather bags for ladies

(b) Leather carrier bags

(c) Leather Industrial Clothing

(5) Hand Crafts:-

(a) Basketry

(b) Wood carvings

(c) Sculpture and painting.

(6) Textiles:-

(a) Textile knitting

(b) Textile weaving by hand looms

(c) Tailoring and tie and dye printing.

(7) Multipurpose Workshops:-

(a) Carpentry and wood work

(b) Black smithy

(c) Welding and joinery

(d) Rural and agricultural transport.

In order to successfully implement projects, the Village Industry Service provides various services to the prospective rural and peri-urban entrepreneurs who intend to start projects in their areas.

The Services are:-

(1) Techno-economic advice for setting up a project
(2) Technical Advice for choice of the product and project profile.
(3) Project design
(4) Training of managerial staff and workers.
(5) Marketing aids.
(6) Supply and procurement of raw materials
(7) Financing and credit.
(8) Feasibility studies and market surveys for prospective entrepreneurs.

Thus most of such services are provide through Field Officers who are based in Lusaka and Field assistants.

V. I. S. Documentation and Information Service:

The Village Industry Service is currently engaged in strengthening its information service. An Information Officer and other Field Officers are in process of gathering and compiling materials for the information service.

Activities of the Information Centre:

(a) Research and surveys
(b) Information gathering and analysis
(c) Data Storage
(d) Library and reference services.

Services Provided:

(a) Consultancy and advisory services.
(b) Transfer of technology and adaptation of new small industries technologies.
(c) Training in management and use of newly introduced devices and equipment.

(d) Dissemination of general business information to prospective and existing entrepreneurs.

(e) Question and answer services.

(f) Publication and dissemination of information regarding sources and suppliers of equipment and machinery.

Industrial and Technological Information Needs:

The Information Service for it to operate effectively, it requires adequate stock of industrial and technological information which should be made available to V. I. S. prospective and existing entrepreneurs.

Therefore, the V. I. S. information service would like in its documentation service the following types of industrial information:

(a) Rural Industries Technologies in areas of:-

(1) Food processing and preservation
(2) Food storage structures
(3) Metal and wood processing
(4) Ceramics
(5) Building materials
(6) Production and Maintenance of agriculture equipment.
(7) Textile weaving, knitting and printing.
(8) Chemical processing.

(b) Industrial designs and plant lay out for small industries.

(c) Patents documents from other countries in small scale sector.

(d) Process technologies and project profiles.

(e) Sources of machinery and equipment.

(f) Product specifications and standards.

(g) Research reports on new small industries technologies done locally and elsewhere.

(h) General information on possible small manufacturing and processing activities with reference to third world countries.

(i) Licensing arrangements for patented industrial and technological information e. g.

(1) Technical know-how fees.
(2) Royalties
(3) Period of licence.
(4) Any other legal aspects of international licence agreements.
(5) acquisition of technologies.

Publications:

The information service has been publishing various information for use by prospective entrepreneurs, especially in food processing.

The unit has published project profiles for food processing and preservation using fruits, vegetables and milled grains. Others are:

(a) V. I. S. Brochure
(b) V. I. S. Newsletter
(c) Workshop and Research Reports.
(d) Posters (proposed)
(e) Pamphlets (planned)
(f) Radio programmes
(g) Training aids (planned)
(h) Slides
(i) Magazines.

Equipment and material requirements:

The following are material and equipment requirements for the documentation and information centre:

(1) Micro Computer for Data Storage
(2) Video Recorder Screen
(3) Video Cammera a[illegible]essories
(4) Tape recorder and tapes (reel)
(5) Camera and accessories
(6) Storage materials e. g. shelfs and racks.

Manpower and Training Needs:

The information service has only one officer responsible for information acquisition and liaison. He is assisted by Field Officers in information gathering and compiling of various information needs of the prospective users.

Thus, the Information Officer mostly does liaison work between the office and the outside world. In view of planned activities, there will be need for additional qualified staff who will be responsible for information gathering and dissemination. It is proposed that the information service should have the following officers:

(1) Information Officer
(2) Assistant Information Officer
(3) Photographer/Video Cameraman
(4) Computer programmer/data processor
(5) Librarian and documentation officer.

Training needs will thus be in areas of Information Documentation, use of equipment and publishing of materials and information dissemination through various media and V. I. S. own publication system.

Users of Industrial Information:

Since V. I. S. is charged with promotion and development of Small Industries in rural and per-urban areas, most of the users are those who have not acquired high level academic and technical skills. These are:

(1) Youths
(2) Co-operatives (industrial)
(3) Women groups.

Other users of information will be agencies who are also involved in rural development and may not have access on their own to industrial and technological information; such as:

(a) The Christian Council of Zambia.
(b) Zambia Council for Social Development
(c) Department of Home Economics
(d) Department of Social Development
(e) UNIP Party Youth and Women's League
(f) Planned Parenthood Association of Zambia
(g) Human Settlement of Zambia
(h) Church Organisations in rural areas

ZIMCO INCORPORATION AND PUBLICITY UNIT

Zambia Industrial and Mining Corporation (ZIMCO).

Zambia Industrial and Mining Corporation (ZIMCO) is a state holding company which controls about 80% of the national economy and operates through firms that are either wholly-owned or which have outside equity. This control of ZIMCO over the national industrial and commercial activities is exercised either directly, or through wholly-owned subsidiaries such as Industrial Development Corporation (INDECO) or National Import and Export Corporation (NIEC).

Under ZIMCO, there are 124 subsidiary and associate companies engaged in various industrial and economic activities in Zambia.

The ZIMCO group of Companies is divided in the following areas of industrial and commercial activities:

(1)	Mining	32 companies
(2)	Real Estate	3 "
(3)	Trading	9 "
(4)	Transport	9 "
(5)	Agriculture	8 "
(6)	Posts/Communication	1 "
(7)	Energy	7 "
(8)	Finance	7 "
(9)	Hotels	3 "
(10)	Industrial	4 "

The Zambia's industrial economy has expanded and diversified extensively since Independence and now accounts for 18o/o of Gross domestic products. Much of the Industrialisation has been in Import substitution, and while a considerable part of it remains largely dependent on imported raw materials due to absence of a strong intermediate goods sector.

ZIMCO subsidiary, INDECO is directly involved in a wide spread of manufacturing enterprises, and in many cases with foreign inverstors, that include the following areas of activities:-

(a) Milling:
- (1) wheat products
- (2) maize flour
- (3) rice polishing
- (4) stock feed manufacturing

(b) Sugar products:-
- (1) icing sugar
- (2) brown sugar
- (3) syrups
- (4) mulasses
- (5) tfeacle and jams
- (6) white sugar.

(c) Edible oils, detergents and toiletries:- these enclude
- (1) edible oils
- (2) oil cakes
- (3) edible fats
- (4) toilet soaps and detegents.

(d) Pharmaceuticals, Chemicals and Fertilizers:-
These are 3 companies involved in this field producing:-
- (1) Intraveneous liquids
- (2) fertilizers
- (3) Acids and compound fertilizers
- (4) explosives
- (5) medicines
- (6) industrial chemicals

(e) Glass and plastic products:

Companies in this field are involved in production of glass and plastic products for domestic and Industrial uses.

(f) Textiles:

The companies in this field produce various type of printed fabrics using either natural cotton on synthetic materials.

(g) Industrial and medical gases and copper products:

There three companies in this field producing oxygen and acetylene for industrial and medical purpose. This is an Indeco company engaged in metal fabrication using copper to produce copper roads, cables and telephone cables.

(h) Engineering activities:

These companies in this field are engaged in heavy and light engineering.

Heavy engineering include:-

(1) production of truck traillers
(2) Fuel tanks
(3) van and track bodies
(4) bus bodies

Light engineering include:-

(1) metal pumturn
(2) door and window frames
(3) Wire mesh
(4) refuse bus and geysers etc.

(g) Forest industrial activities:

The newly incorporated company Zambia Forestry and Forest Industries Corporation (ZAFFICO) has taken our commercial operations of government Department of Forestry.
The company is responsible for development, exploitation and utilisation of timber resources. The company is main producer of sawn soft and hard wood construction timber, furniture and building materials.

ZIMCO Information and Publicity Unit:

ZIMCO operates an information and publicity unit which is quite small and is in process of re-organisation. The unit is intended to act as a central information collection and dissemination for use by ZIMCO Subsidiary and associate companies. The unit currently operates like an ordinary public relations office engaged in routine public relations activities with other companies. Efforts are also being made to collect industrial information and other related documents for use by the ZIMCO group.

Type of activities:

The unit has been planned to undertake the following activities:

(a) Information analysis
(b) Referral
(c) Library

Services Provided:

The unit plans to provide the following services to ZIMCO group:

(1) Question and answer
(2) Current awareness - SDI
(3) Advisory Services

Main Area of Information Activities:
The unit is being strengthened to provide industrial and technological information for use by ZIMCO group in field of:

(a) Mining and mineral processing
(b) Industrial manufacturing
(c) Commercial and Business Management
(d) Transfer of technology.

Publications: The unit has made a few publications so far which are mostly concerned with the activities of ZIMCO group. The unit also produces ZIMCO annual reports, ZIMCO brochures

and Zambia Enterprise Magazines.

Information Needs:

ZIMCO group need a lot of industrial and technological information, for it is the main vehicle charged to promote the advancement of the economy and which is responsible for assisting and providing industrial services to its own subsidiaries and associate companies. ZIMCO Information needs and those of its subsidiaries, are seen in the light of various economic activities which are being under taken and sectors of involvement. ZIMCO operates in the following sectors:-

(1) Mining
(2) Industrial Manufacturing and Processing
(3) Energy
(4) Agriculture
(5) Finance
(6) Transport
(7) Trading
(8) Communication
(9) Hotels
(10) Real Estate

ZIMCO technological information needs include improved and appropriate technologies which would be required for its industrial activities in the country and those that could easly be adapted to Third World Conditions and economic environment. ZIMCO will also need information that would enable it link with various R and D institutions within the country and other countries in the sub-Region. For its industrial activities ZIMCO group requires industrial information on (a) process technologies, equipment and machinery.

(b) Investment, licensing and conditions for transfer and use of foreign technologies.

(c) technological profiles and manuals for capital goods industries e.g. iron and steel works, agro-based industries and manufacturing industries.

(d) source of supply of equipment and machinery.
(e) research reports on new technologies for industrial manufacturing and processing.
(f) patents and other industrial property literature.

Manpower and Training Requirements:
The unit has public relations officers who are responsible for public relations between ZIMCO companies. They are currently involved in collecting information for their information unit. The officers in the unit would require training in scientific documentation and information dissemination. This would be done when the unit becomes full operational.

Other Government Institutions for Industrial and Statistical information:

The Zambian Government Ministries and departments are some of the major source of information and documentation which could be utilised by the industrial sector. Most of the information the government sector provides include legal information, development planning, National Strategies for Industrial Development, industrial policies and plans, statistical industrial information. Source of the government departments have already been discussed in previous sections.

We would therefore treat these others as providing supplementary commercial and industrial information to the manufacturing sector so that one becomes aware of government efforts and plans for the country's industrial development process.

And since international economic and industrial relations involve government participation and involvement, the business community especially from the industrial sector that uses much of its industrial inputs from foreign countries need to be aware of government policies on foreign investment, external trade, technical co-operation with other countries.

The following ministries and departments of the government of Zambia play a very significant role in providing information to the public on Commercial and Industrial activities:

(1) Department of Foreign Trade:

The role of this department is to promote trade between Zambia and other countries. And other this department, is the Zambia Export Promotion Council whose functions are:

(a) sales promotion of Zambia goods
(b) market research
(c) training
(d) trade fair participation (local and international).

Thus the department attempts to provide awareness to industrialists on what the international market situations are through the following publication:

(a) Zambia Export directory
(b) Zam trader
(c) Zam export Newsletter

And within the department also a trade information and documentation centre has been established with assistance of the EEC/ITC the centre provides information on:

(a) products
(b) markets
(c) trade regulations
(d) statistics (trade)

(2) Zambia Standards Institute:

This institute has been established to issue standards on design and manufacture, materials, products and other technical specification of products.

The institute has a technical library and information service with information on food, agriculture, drugs, engineering and building documentation include technical

Commercial journals, abstracting journals, local and foreign standards.

The institute has the official publications, "the Zambia Standards".

(3) <u>The Ministry of Finance and National Commission for Development Planning</u>:

The ministry provides planning and government finance information. It is responsible for formulation of economic and development strategies of the country.

Through its various departments the ministry prepares and publishes the Five year National Development Plans, Annual Plans, Annual Budgets, Annual Reports.

The Ministry's departments are involved in:

(1) Economic and Industrial Research
(2) Economic production planning in areas of agriculture, mineral and energy, industrial manufacturing.
(3) formulation of macro- planing investment on policies.
(4) productivity and enterprise Co-operate planning
(5) Regional Research and Planning
(6) Preparation of government Annual Estimates of income and Expenditure, Fiscal measures, the National Budget.
(7) Budgetary, industrial and investment policy formulations.
(8) through the central statistics office collection, compiling dissemination and interpretation of statistical information.

The central statistical office provides information on:

(a) Industrial production in various sectors of the economy.
(b) Import and Export Statistics by SITC groupings.
(c) Trade statistics with other countries.
(d) Labour and employment statistics

(e) National accounts
(f) Balance of payment

The Central statistics office maintains a statistical information service and library.

The C. S. O. publishes the following publication:

(a) monthly digest
(b) statistical year book of Zambia
(c) Industrial Monographs
(d) survey reports

Most of information users are government officials in planning and development activities. The manufacturing sector also has access to statistical information which help to provide basis for economic and business accessories.

Other Professional and Trade Organisations:

There are various professional and trade organisations that are engaged in provide various information concerning industrial activities of their members such organisations are:

(1) Chambers of Commerce and Industry located on the line of rail.
(2) Trade Associations in Textiles, manufacturing, farming, building and construction, printing and small scale industries.
(3) Professional and Technical Associations such as the Economics Club, Engineering Institution of Zambia, Pharmaceutical Society, the Institute of Architects and the Institute of Management.

These institutions attempt to provide to their members various types of information related to their economic activities through own technical publications and reports. These institutions also hold periodic conferences and workshops in their fields of activities and provide various technical and advisory services to their members.

What these institutions generally require is strengthening

of their information service through training of officers and financial support.

FINDINGS AND OBSERVATIONS:

It has already been stated in the previous section that industrial and technological information systems in a country play significant role in a country's development planning, policy formulation, projects implementation and research planning.

Without a strong base of industrial and technological information from relevant institutions decision making on economic and development matters would not be easly done.

The following aspects were observed during the survey:

(1) Zambia lacks a strong industrial and technological data base which could be used in industry in Zambia.
(2) The country has not yet formulated a national technology policy which would give guidance to kinds of industrial and technological information which would be relevant to Zambia's economic development process.
(3) There is little if any, strong industrial and technological development activities between the industry and research institutions within the country.
(4) The applications of research and technological findings from some research institutions have not been fully utilised especially those in relation to small rural technologies to inability of the prospective entrepreneurs to acquire them at a fee.
(5) There is thus lack of institutional structure that would be able to co-ordinate the information collection and dissemination to the users.
(6) Some of the available information systems tend to serve mostly own members e. g. those in Trade and Commercial Associations.

(7) There is no significant transfer of technology or new technological findings to the intended users due to inadequate dissemination facilities which are generally due to financial constraints most of systems face.

(8) Some systems are not accessible to the public for they are used by members of staff only.

(9) There is generally lack of awareness especially among small entrepreneurs due to lack of publicity of available technological information.

(10) The Patent office in the Ministry of Commerce and Industry does not have a network and system for providing awareness to the general public of patented technologies registered.

(11) Though some systems have linkages to overseas systems, the information which has been exchanged have had very little relevance to the users.

(12) The country's industrial sector, has continuously dependent on the outside information services and technical and consultancy services. Even the Zambia's Engineering Services Ltd responsible for providing technical and industrial services to the local industrial sector is based overseas. (Eshford in England).

(13) There is also generally lack of up-to-date information gathering and documation, and in services where publications are made, they are not published on regular basis. At times information documented is published after a long time; thus rendering such information obsolete to users.

(14) It was generally observed that most of the information systems and services have not become fully operation and are in process of strengthening their ability to operate, and effectively disseminate information to users.

(15) It was also observed that most of the systems lacked qualified manpower and if any were not doing full-time information work.
In some case the officers were basically involved in were public relations activities for their organisation. Thus lack of trained information staff has resulted into in effective operations of the systems.

(16) Though the systems have stated in the previous sections have indicated what their lines of activities are, they have not effectively implemented them due constraints they are facing such as finance, lack of documentation, storage and publication materials.

(17) The needs of the users of Industrial and technological information in Zambia are varied under could be categories and the following Industrial sectors:-

(a) Heavy Industrial enterprises
(b) Medium enterprises
(c) Manufacturing and processing
(d) Agriculture based manufacturing and processing
(e) Small and Village Industrial Activities.

The requirements of these categories are dependent on their level of industrial activities, materials used, skills involved and products to manufacture.

(18) During the study, it was observed that Information systems have attempted to provide services to the chentele that fall and particular economic activities.

(19) And general information requirements of the systems and users were observed to be the following:-

(a) Scientific, technical and Industrial Information
(b) Information of current research developments
(c) Investment Information
(d) Training Information
(e) Marketing and Market Intelligence information
(f) Legal information involving patented industrial and technological information

(g) Sources and suppliers of technology information
(h) Information on links to other foreign systems and sources of information.
It should be stated that Zambia does not have a National Industrial and technological system yet.

Conclusions and Recommendations

Industrialisation is the main hope of most of the developing countries and this could only be achieved through making available to those countries adequate resources of finance, technology and adequate data base to enable comprehensive formulation of Industrial strategies.
In absence of such resources industrialisation in these industries and Zambia in particular would remain more a hope than a reality, and for even though considerable progress has been made, levels of Industrialisation have been low and their contribution of manufacturing still quite low.

Zambia in its attempt to accelerate the Industrial development process has formulated various plans in comformity with the Party guidelines and drawing on lessons from the past experience. One of these plans in the Third National Development Plan (TNDP) which has been attaining the objectives of self-reliance and socialism. Some of the principal objectives of the plan are as follows:-

(1) To diversify the economic structure in order to reduce the economies dependence on copper and to undertake a crash economic programme of promoting agriculture and Industry base on use of local raw materials and the establishment of the necessary capital goods Industries.

(11) To give the highest priority to rural development in order to create a strong rural economy, with major emphasis on such activities as:-

(a) production unit such as Rural Reconstruction Centres, state farm and ranches
(b) Promotion of Village and Small Scale Industries as an integral part of rural development.
(c) expansion of the production base in agriculture sector, not only for attaining self-sufficiency but also for promoting exports.

(d) adoption of investment and production programmes and creation of credit, marketing and extension facilities which will benefit directly subsistance producers and farmers.

(111) To promote Industrial production based on local raw materials to satisfy domestic demand and generate exportable surplus.

(1v) To expand education and training facilities both in quality and quantity, and to provide sufficient outputs from the system to support the National development effort.

Thus the Country's current efforts are aimed at encouragement of import substitution and making maximum use of domestic raw materials and intermediate goods. Zambia has also put a lot of small industries particularly in the small industries.

The effort of the Zambian government to achieve its plans may not be attainable in absence of a sound industrial data base up which industrial decisions would be based. Thus the need for effective Industrial and Technological Information systems and networks. At present, there loose relationships between Information systems and users of Information, and at times the general public is not able to know where the would find what information. The need for Industrial information cannot be emphasised and especially for those propective entrepreneurs who are unable to find own sources of industrial information.

Even though some Institutions have established some kind of information systems, they have not effectively provided for the requirements of their clients or prospective users of information.

At times they do not have information to give to an entrepreneur or they are unable to suggest to them possible sources of information. If there calls for a comprehensive restructuring and strengthening of these systems so as to make them useful tools for development effort in Zambia other than mere documentation centres for foreign literature which the country would not use. The national information systems could only be effective tools for development if there are able to:-

(a) provide required information to users and not information on information
(b) provide documents
(c) keep up-to-date information
(d) provide latest awareness on new developments.

This could be achieved by provision of support of functional units such as:-

(a) Document storage unit (Library)
(b) information storage unit (Documentation)
(c) information dissemination and publication (communication).

It should be noted that these National Information systems should be able to gather a broad scope of information which could be appropriate when applied or adapted to specific situations. It should be recommended that for strengthening the information capacity of the National systems, UNIDO tnrough INTIB should the following support services:-

(1) Provision of training to staff employed in National Information systems in field of Information Documentation and use of related equipment such as computers and publication equipment .
(2) Technical assistance in helping to restructure and strengthening of National Systems.
(3) Provision of financial and material assistance to National Systems to enable them acquire materials, equipment and other inputs for their Information Systems.
(4) INTIB should be able to assist in conducting user-awareness programmes for prospective entrepreneurs of Industrial Information through workshops, seminars etc.
(5) Provision of various documentation as may be required by information systems and where payments are involved INTIB should be able to give support or other International United Nations agency or Organisation.

(6) Conducting of study tours by staff of National Systems to familiarise with similar activities in other Countrys.

And on International and Sub - regional levels there is need to:-

(a) encourage information exchange programmes.
(b) encourage strong cooperation and linkage between local and foreign systems so as to achieve maximum benefits.
(c) encourage seminars and workshops for systems at regional and sub - regional levels so as to share experiences.

And Recommendations for Industrial and technology Information systems:-

It should be noted that Zambia's economic activities has broadly been segmented into the following:-

(1) Government heavy Industrial activities (Parastatals and quasi government enterprises)
(2) Private Industrial enterprises
(3) Small rural and peri-ubarn industries
(4) Agricultural enterprises.

Their needs are varied and their sources of support are also different, and in view of such differences it is recomended that National Information Systems be structured in order to effectively provide services to enterprises that fall under such categories. But above all their is need for a co-ordinating body which would ensure effective information acqiusition and dissemination, This should fall under a government institution such as the Ministry of Commerce and Industry.

Recommended Information Needs for the Users:-

Though information needs for various user could be varied, but there the following main features which are of great importance to users of information:-

(1) Technical and Industrial Information:-
-current research developments
-product designs, profiles amd specifications
-domestic and foreign standards and regulations

-plant layouts and technological know-how and know-what
-appropriate technologies for small industries.

(2) Legal Information:
-foreign technology contractual arrangements
-patent structures and made of acquisition of technology

(3) Statistical and Trade Information:
-on products
-exports and imports
-market requirements (local and abroad)
-Market Intelligence.

(4) Training and Consultancy Services:
-on use of Imported technologies
-maintenance of equipment of machinery
-upgrading of skills and competence.

(5) Investment Information:
-cost of industrial investment
-import requirements
-machinery requirements and scale of production
-Industrial production forecasts etc.
-cost/economic investment of investment.

Recommended Information systems requiring support from INTIB:

(1) Village Industry Service Information Service
(2) Zambia Industrial and Commercial assiciation Information Centre
(3) Small Industries Development Organizations Documentation Centre
(4) Technology Development and Advisory Unit Scientific Documentation Centre
(5) Development Bank of Zambia Reference library and documentation service.

Conclusion

The study of National Systems has attempted to bring forth what potential and possibilities are in Zambia for the development of Industrial and technological systems which are focal to the development of Zambia's economy. One is able to notice from the previous section the need for strengthening Zambia's information systems so as to serve the country's Industrial sector effectively. During this study, it was generally felt that the country required necessary Industrial data for it effective Industrial process and as such called for effective and all reaching information dissemination and publication. And Zambia being a developing national and with a weak industrial and technology base would definitely require assistance from the affluent work such as financial, technical, industrial and information. Industrial Information systems would in the long run provide important services to the industrial sector. Thus concentrated efforts by INTIB and the Zambia government to create the Institutional infrastructure for development of Nations Industrial Data base would be imperative.

PLACES VISITED FOR DISCUSSIONS. ANNEX 1

(1) National Council for Scientific Research

(2) Technology Development Advisory Unit

(3) Rural Information Services.

(4) Department of Energy

(5) Zambia Federation of Employers

(6) Small Industries Development Organisation

(7) Village Industry Service

(8) Zambia Industrial and Mining Corporation

(9) Industrial Development Corporation

(10) Ministry of Commerce and Industry

(11) Development Bank of Zambia

(12) Central statistics Office

(13) Department of Land Use - Engineering Section

(14) Zambia Industrial and Commercial Association

PROPOSED SCHEDULE FOR UNIDO MISSION. ANNEX 2

27TH OCTOBER 1985 ARRIVAL

	Morning	After noon
28th October 1985	Briefing at UNIDO	V.I.S.
29th October 1985	SIDO	NCSR
30th October 1985	DBZ	Commerce and Industry
31st October 1985	ZINCOM/TDAU	NCDP/MAWD
1st November 1985	Z.F.E.	ZIMCO
2nd November 1985	CSO	De-briefing
3rd November 1985		Departure

ABREVIATIONS

ANNEX 3

D.B.Z.	Development Bank of Zambia
Z.F.E.	Zambia Federation of Employers
MAWD.	Ministry of Agriculture and water Development
T.D.A.U.	Technology Development and Advisory Unit- University of Zambia
N.C.S.R.	National Council for Scientific Research
N.C.D.P.	National Commission for Development planning
ZIMCO	Zambia Industrial and Mining Corporation
INDECO	Industrial Development Corporation
C.S.O.	Central Statistics Office
R.I.S.	Rural Information Services
D.S.C.	Development Support Comunication
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organisation
V.I.S.	Village Industry Service
S.I.D.O.	Small Industries Development Organisation
ZINCOM	Zambia Industrial and Commercial Association