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MODEL FOR MANAGEMENT

OF

INDUSTRIAL INFORMATION & INVESTMENT UNIT

AT

FEDERAL MINISTRY OF INDUSTRY

SUDAN

BY
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UNIDO CONSULTANT

JANUARY 1998

UNIDO PROJECT: **MANAGEMENT OF INDUSTRIAL INFORMATION & INVESTMENT UNIT - IIIU, SUDAN, CAPACITY BUILDING**

INDEX

ABBREVIATIONS

CAS	:	Chemical Abstract Services
CBS	:	Central Bureau of Statistics
FRC	:	Food Research Centre
IAPSO	:	Inter-Agency Procurement Service Office
IIIU	:	Industrial Information & Investment Unit
IPA	:	Investment Promotion Administration
IRCC	:	Industrial Research & Consultancy Centre
MOI	:	Federal Ministry of Industry
NCR	:	National Centre for Research
SSMO	:	Sudanese Standards & Metrology Organisation
SCIA	:	Sudanese Chambers of Industries Association

1. INTRODUCTION

In order to provide capacity building and institutional strengthening activities of Ministry of Industry to assist domestic private sector in implementation of business and investment activities and upgradation of technology, UNIDO decided to assist Federal Minstry of Industry in setting up of an Industrial Information and Investment Unit (IIIU) at the office of Ministry of Industry, Sudan. Industrial Information & Investment Unit has been established as nodal point of Scientific and Technological Information Services. It shall play a pivotal role in establishing a nationwide information disemination system to support industrial and technological development by facilitating access to and utilisation of information resources, developing on-line information systems and various search loops, increasing public awareness of information services and establishing cooperative networks with information agencies in Sudan and abroad. Besides this, IIIU shall also act as Information system for Ministry of Industry to facilitate their decision making and strategic planning for industrial development.

Mr. Sunil Tyagi, UNIDO Consultant was entrusted with the task of preparing model for IIIU. The terms of reference for the consultant are as follows:

1. Analyze existing facilities and evaluate available resources.
2. Prepare a model of an Industrial Information and Investment Unit (IIIU) indicating which function it will perform and which resources it will demand.
3. Install UNIDO databases.
4. Provide on-the-job training to national counterparts on the use of the Data Bases and the CD-ROM application.
5. Take all actions necessary to start with the normal operation of services (user survey, hardware and software installation, establishment of several routines etc.). Organize feed-back data collection for taking corrective actions, if required.

On arrival at Khartoum, the consultant was briefed by Mr. Peter Manoranjan, Country Director, UNIDO, Sudan about the project. At Ministry of Industry, consultant was briefed by H.E. Mr. Badr Eddin Sulieman, Federal Minister of Industry.

An introductory meeting was also held with Mr. Osman Al-Amin, Undersecretary, Mr. Mohammed Widatalla, Director of Foreign Affairs & Technical Assistance Department, Mr. B. Bilail, Project Coordinator of IIIU, Ms. Igbal Dirdiri, National Expert on Investment Promotion, Ms. Amal Rabah, Head of Information Unit of IRCC and Mr. Izzeldin Elhassan, National Counterpart in IIIU.

In order to evaluate existing facilities and available resources, detailed discussions were held with heads of different related departments namely Department of Industrial Development, Department of Industrial Production, Department of Technology Transfer and Research Development and Foreign Affairs & Technical Assistance Department. Consultant also visited and held discussions with the heads and concerned officers of various identified nodes like SSMO, SCIA, FRC, IRCC,

NRC, CBS, IPA. In order to assess the needs and expectation of industry, field visits of some industrial establishments were also organized.

Based on the observations, a model for Industrial Information and Investment Unit was prepared which is described in this report. The consultant also organised training to selected personnel of IIIU on UNIDO databases and CD-ROM applications. Training was also organised at IRCC venue. Selected staff was also briefed about the objectives of IIIU and various functions it will perform. Training for accessing information on INTERNET was also conducted.

The draft model was discussed at a meeting held on Jan. 4, 1998 at Ministry of Industry. The meeting was attended by Mr. Osman Al-Amin, Undersecretary, MOI, heads of different departments at MOI, heads of different nodes mentioned in the report and other end users. Suggestions emerged from the meeting were incorporated in the report.

This report is organised in 13 sections. Following the introduction is Section 2 describing the existing facilties and available resources in the Ministry of Industry. Section 3, 4 & 5 describe the Objectives & Model of Industrial Information & Investment Unit and various functions it will perform. Section 6,7 & 8 describe various national & international linkages it should have and the kind of infromation exchange that should take place among them. Section 9 deals with the organisational structure of IIIU, manpower requirement & job description of IIIU personnel. Section 10 gives the list of possible partner institutes in various countries. Recommendation of the consultant & strategy for IIIU workplan are described in Section 11 & 12.

Since the Site for IIIU was under construction, computer and other equipment have been installed in temporary room. IIIU will function from this temporary site until the actual site becomes ready. All the necessary actions were taken for the start of functioning of IIIU. Since a lot of information is to be compiled and put into databases, it will take some time before IIIU actually starts delivering goods to the end users.

The consultant takes this opportunity to thank H.E. Mr. Badr Eddin Sulieman, Federal Minister of Industry, Sudan for his valuable guidance & suggestions. Thanks are also due to Mr. Peter Manoranjan, Country Director, UNIDO. Thanks are also due to Mr. Osman Alamin, Undersecretary, Mr. Mohammed Widatalla, Director of Foreign Affairs & Technical Assistance Department, Mr. B. Bilail, Project Coordinator of IIIU, Ms. Igbal Dirdiri, National Expert on Investment Promotion, Ms. Amal Rabah, Head of Information Unit of IRCC for their valuable support in accomplishing the task. Last but not the least, I must thank Mr. Izzeldin Elhassan, National counterpart for his valuable contributions.

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UNIDO CONSULTANT

2. EXISTING FACILITIES AND AVAILABLE RESOURCES

At Ministry of Industry

Scientific and Technological information related to industries and industrial statistics etc. is either non-existent or is scattered in various departments in the Ministry of Industry(MOI) e.g Department of Industrial Development, Department of Industrial Production, Department of Technology Transfer and Research Development and Department of International Relations. This scattered information is mainly in the rackfiles and there is no proper system of information retrieval. This information is more or less related to the administration of the Ministry of Industry and does not provide any information to industries and budding entrepreneurs.

No definition of small Industry exists. Major classification of the industry is Textiles, Sugar, Food processing, Leather, Chemicals and Pharmaceuticals, Building materials and Others. Some additional classification of the industry is needed in order to identifiy industrial sectors for development. Library in the Ministry of Industry is also not fully functional and is short of information, journals, periodicals, information materials, directories etc.

UNIDO has provided 16 Computers (PCs), Fax, Modems, Laser printers, and other softwares for software development. The location of Industrial Information Unit, at the time of writing this report, was under construction. Equipment have been installed in temporary place. IIIU will function from this place till the actual site is ready.

Sudanese Standards and Metrology Organization (SSMO)

SSMO at present is preparing Sudanese standards for various manufacturing items. These standards are based on international standards (ISO). They also have collection of various standards from different countries. SSMO is having one PC at present. One PC with modem supplied by UNIDO to MOI will be kept at this place and will act as node to IIIU. The site for keeping the node is ready. They have to arrange dedicated telephone line for computer to computer on-line information exchange.

Sudanese Chambers of Industries Association (SCIA)

SCIA is the sole official representative of Sudanese Industrial and private sector. SCIA is divided into seven Chambers namely Edible oils and soap chambers (209 factories), Food industries Chambers (327 factories), Spinning and Weaving Chambers (151 factories), Chemical Industries (114 factories), Engineering Industries Chamber (123 factories), Leather and Footwear industries (64 factories), Printing, Publishing and packing Chamber (62 factories).

SCIA on its own has 6 PCs, Fax, Modem. SCIA is doing an extensive survey on the existing industries in State of Khartoum, Sudan. 80% of survey is complete and the rest will be over by end of January 98. This will cover complete information about the manufacturing industries in State of Khartoum, Sudan. SCIA is also preparing a database on this. They also have plan to do the similar survey for whole of Sudan. This can be a good source of information to the Ministry of Industry and can save lot of time in compiling the information.

National Centre for Research (NCR)
NCR carries out various researches in various fields through its different offices. Its main focus is to develop new technologies or acquire and adapt new technologies from abroad. NCR at its National Documentation Centre is maintaining the databases on new development and research and studies carried out by various researchers in and outside Sudan in various fields. They have PC-486s and are using micro CDS/ISIS software for keeping the information in full text, abstract and bibliographic form and microfiche form. This can be a useful node to provide information to entrepreneurs regarding development in their fields, improvement in technologies etc.

Food Research Centre (FRC)
FRC deals with development of new technologies related to food items. Its role is also to assimilate technologies to Sudanese conditions.

They have two PCs and Laser printers but no development tools for maintaining databases. Information available is also not catalogued properly. The site for keeping the computer and Modem is ready. They need dedicated telephone line for computer to computer on-line information exchange.

Industrial Research and Consultancy Center (IRCC)
IRCC is the focal point for INTIB databases and acts as technical arm for Ministry of Industry. IRCC conducts R & D on exploitation of raw material for industry, techno-economic feasibility studies on industrial projects, consultancy services on industrial planning, process engineering, production management, costing plant efficiency, quality control systems and product development etc. However there is no structured database on dissemination of this information.

IRCC has a full-fledged library consisting of various reports, feasibility studies, abstracts of various researches. They have one PC-386 and one PC-486 and are equipped with IRMS, COMFAR, SYPHONY, ARABWORD, provided by UNIDO and Harvard Graphics. They also require a dedicated telephone line for computer to computer on-line information exchange.

Investment Promotion Administration (IPA)
They prepare investment maps of Sudan. They also distribute their information materials through embassies, trade fairs and other local distributions. They have a computer centre consisting of four PC-486s. One PC from MOI will be provided to them which will act as a node to Industrial information Unit. They have to arrange dedicated telephone line for computer to computer on-line information exchange.

Central Bureau of Statistics
Central Bureau of statistics conducts surveys in various fields and can help the Ministry of Industry in conducting initial surveys and also in statistical analysis. They have full-fledged computer department having more than 45 PC-386s, 10 Pentiums and two servers running Novell NetWare. They also have Integrated Micro Computer Processing System (IMPS) used for data processing. One PC with modem will be provided to them. They also have to arrange a dedicated telephone line for computer to computer on-line information exchange.

3. OBJECTIVES OF THE INDUSTRIAL INFORMATION AND INVESTMENT UNIT (IIIU)

Primary concern of IIIU is to assist industries particularly Small & Medium Industries (SMIs) in business development, technological acquisition & assimilation through its information services. Objectives of Industrial Information and Investment Unit (IIIU) can be defined as follows:

1. To provide value added Information to industries in order to assist them in business promotion, establishment of new industry and diversification.

2. To advise industries in identification of local and International partners (Partner Matching), technology evaluation and selection in order to upgrade their technologies.

3. To provide industrial information and data that may be required by MOI planners and decision makers in strategic planning for industrial development. (i.e. To Generate Management Information System to help them in planning and decision making)

In Sum, it should act as Window of Information to industries, Technology seekers and offerers and Decision-Makers

4. MODEL OF INDUSTRIAL INFORMATION AND INVESTMENT UNIT (IIIU)

Based on the Objectives, Industrial Information Unit can be divided into four subunits. The Pictorial diagram is explained as figure 1. These four units can be as follows:

1. IIIU (National)
2. IIIU (Technology Transfer)
3. IIIU (Statistics)
4. Library & Documentation Services

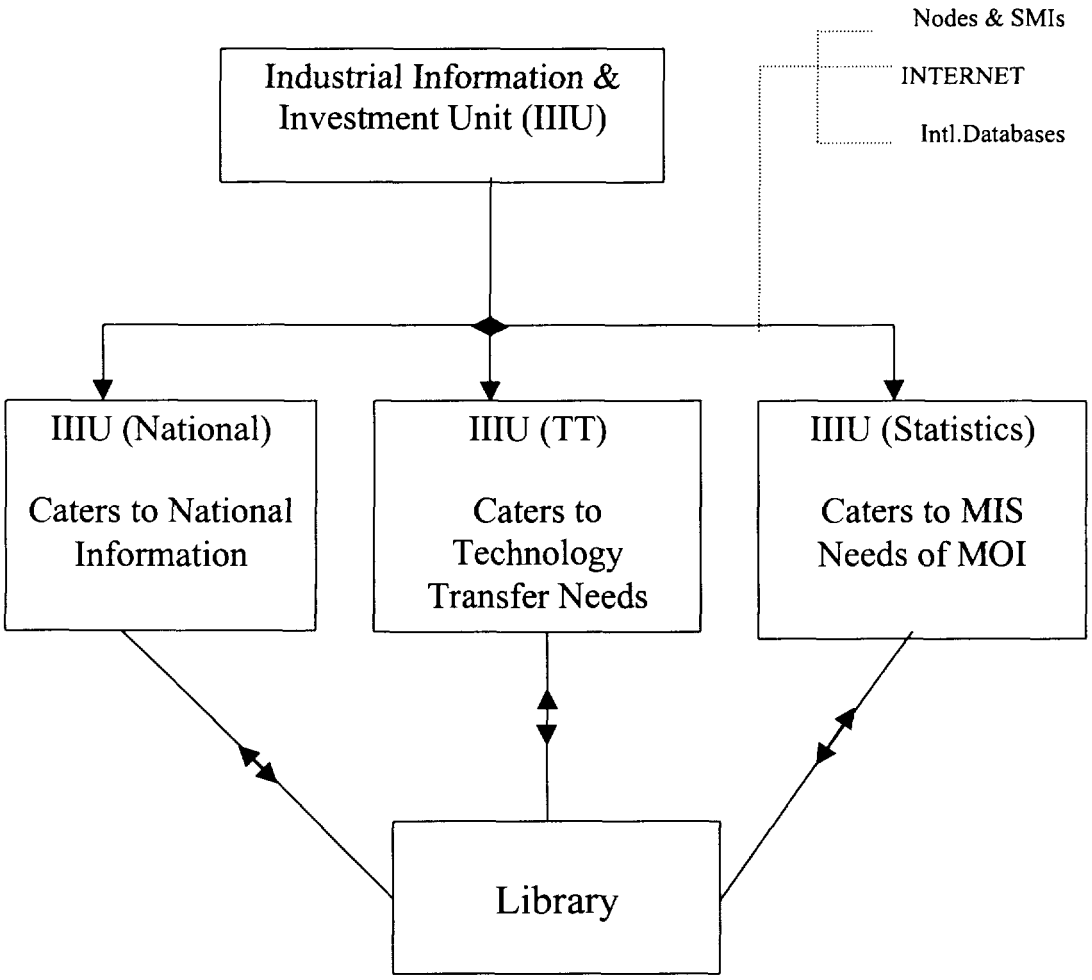


Figure 1

5. MAIN FUNCTIONS OF INDUSTRIAL INFORMATION AND INVESTMENT UNIT (IIIU)

The Main Functions to be Performed by the different units of IIIU are as follows:

IIIU (National)

The main function of IIIU (National) will be to fulfill the first objective of Industrial Information & Investment Unit. IIIU (National) will compile and disseminate information relevant to industries with special emphasis on Small and Medium Industries (SMIs). This information will be helpful for new entrepreneurs and also to existing industries for their business promotion, establishment of new industry and diversification.

IIIU (National) will compile and disseminate the following Information to Industries:

i. One page project profiles. These profiles will give basic idea of an industrial project (like production capacity, production process, list of machinery, raw material and other inputs) in one page. Sample of the project profile is enclosed as an Annexure C.

ii. Detailed information about industrial projects. These can be procured from local UNIDO office and can be modified according to the local needs. Sample of the detailed information is enclosed as an Annexure H.

iii. Who makes machinery. This should consist of manufacturers of various machines in Sudan and also from outside Sudan. (Form to be used for collecting the machinery information is attached as Annexure D).

iv. Availability of Raw Material both at national and international level. (Form to be used for collecting the raw material information is attached as Annexure E).

v. Investment opportunities and investment guidelines in Sudan.

vi. Government policies, incentives, tax holidays, priority areas for industrial development.

vii. Goods being exported.

viii. Goods being imported.

ix. Export opportunities.

x. Manufacturing standards (National and International).

xi. Product Manufacturers/Manufacturing Industries.

xii. Abstract of various researches and studies carried out by researchers in Sudan and outside Sudan.

xiii. Interaction with national nodes especially Investment Promotion Administration (IPA), Sudanese Chambers of Industries Association (SCIA) and Sudanese Standards and Metrology Organization (SSMO).

xiv. Creation and maintenance of home page on the INTERNET for investment opportunities in Sudan.

IIIU (Technology Transfer)

The main function of IIIU (Technology Transfer) will be to fulfill the second objective of Industrial Information & Investment Unit. IIIU (Technology Transfer) will compile and disseminate information related to Technology needs of industries.

IIIU (Technology Transfer) will compile and disseminate the following Information to industries:

i. Information on technology, Business and Investment opportunities.

ii. A database on technology offers and requests.

iii. Matching of business partners, evaluation of partners, selection of partners.

iv. Search for technology worldwide (Access to Internet, various International databases like IAPSO, DIALOG, CAS, KLENNER, TINET etc. the details of these databases are described later in this report).

v. Trade opportunities worldwide.

vi. Identification of partner institutions abroad. IIIU (Technology Transfer) should identify partner institutions in various developing and developed countries who represent industries in the respective countries. A possible list of partner institutions is described at chapter 10.

vii. Data on trade fairs/exhibitions held abroad.

viii. Information on indigenous technologies generated by IRCC, FRC, NRC and other research institutes.

ix. Organization of trade delegations abroad and also from abroad and also organization of one to one business meetings among the industrialists based on their areas of interest.

x. Technology planning and selection.

xi. Interaction with national nodes especially IRCC, IPA, FRC and other research institutes.

xii. Creation and maintenance of home page on the INTERNET.

IIIU (Statistics)

The main function of IIIU (Statistics) will be to fulfill the third objective of Industrial Information & Investment Unit. IIIU (Statistics) will compile and generate management information related to the Ministry of Industry to enhance decision making and future planning.

IIIU (Statistics) will compile and generate the following statistical Information:

i. List of industrial establishments existing in Sudan, their location, their profile etc. This can also serve as a frame for collection, computation and analysis of industrial statistics.

ii. Information about Joint Ventures, Technical collaboration, foreign direct investment etc.

iii. List of Export oriented units, their location, profile and the value of exports.

iv. Investment planning.

v. Various statistical information such as quantum of output, manpower employed, inputs used and value added.

vi. Performance of industries.

vii. Interaction with Central Bureau of Statistics in the preparation of frames for industrial surveys, sampling procedures and data processing.

Library and Documentation Services

The main function of the library and documentation services will be to keep

i. Different documents, trade journals, literature, feasibility studies, patents information, conference papers etc. in the field of science & technology.

ii. Hard copy of one page project profiles, project details (How to start manufacturing industries. This is available in UNIDO office and can be procured from there).

iii. Industrial directories related to specific industries such as food processing, chemical, light engineering etc.

iv. Directory of machinery manufacturers in Sudan, directories of machinery manufacturers in different countries like Germany, Taiwan, South Korea. India etc.

v. Exporters directory of Sudan, exporters directories from various countries.

vi. Importers directory from Sudan, importers directories from various countries.

vii. Abstract of various researches carried out in various fields (national and international).

viii. Directory of technology offers and request and various other trade related documents and magazines.

ix. Government policies, investment guide, investment maps etc.

x. Library will also coordinate with other libraries like NCR, IRCC, FRC etc. in preparing documentation that can be distributed to entrepreneurs seeking information on various industries, potential opportunities etc.

6. INDUSTRIAL INFORMATION AND INVESTMENT UNIT NET WORK

The Industrial Information and Investment Unit shall have linkages with industries, various research and development institutes, industrial banks etc. at the same time it should have access to various international databases such as IAPSO, DIALOG, CAS etc. The model of these linkages is shown in Figure 2.

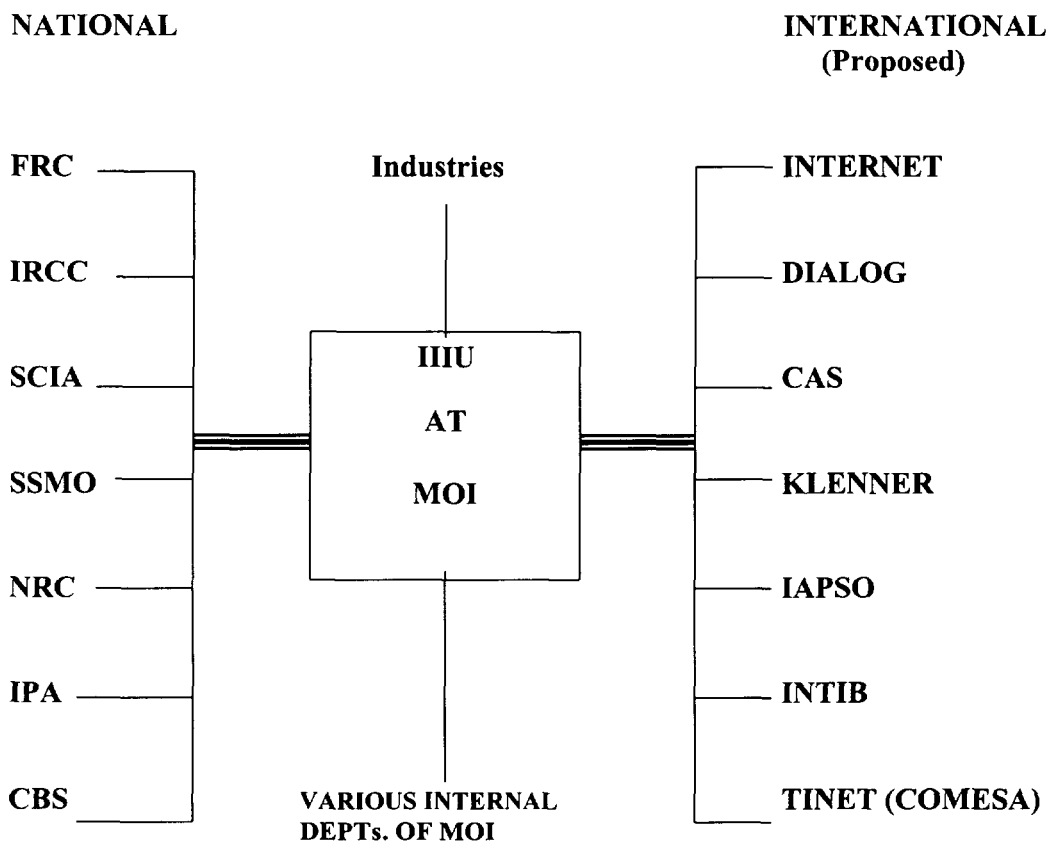


Figure 2

7. NATIONAL LINKAGES of IIIU & INFORMATION EXCHANGE

Industrial Information and Investment Unit shall have on-line computer to computer information network with the following national nodes and a regular flow of related information exchange should occur among them. These nodes shall act as information feeder to IIIU in order to strengthen its information base. The basic information which shall be exchanged regularly with respective nodes is as follows:

1. Sudanese Standards and Meteorological Organization (SSMO)

SSMO will compile all the manufacturing standards and put them in a computerized database. SSMO will provide IIIU the following:

i. Various Sudanese standards as well as international standards for various manufacturing products.

Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

ii. List of products for which it has already compiled the standards.

Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

IIIU will provide SSMO

i. Information about new products that are being manufactured imported or exported.

ii. Information about new international manufacturing standards of various products extracted through INTERNET or other international databases.

Period: Weekly.

2. Sudanese Chambers of Industry Associations (SCIA)

SCIA will provide IIIU the following:

i. Full information about the various industrial establishments which are its members.

ii. Information about new industrial establishments which join them.

iii. Various queries from industries.

iv. Results of various surveys it carries out time to time.

IIIU will provide SCIA the following:

i. Information about various investment opportunities that exist in Sudan.
Period: Monthly.

ii. Various technology offers it receives from various countries(received from partner institutes or extracted through INTERNET).
Period: Weekly.

iii. Information about trade opportunities (received from partner institutes or extracted through INTERNET or other resources).
Period: Weekly

iv. New technological developments by various research institutes in Sudan.

Period: Weekly.

v. Information about various incentives MOI gives to industry in various sectors.

Period: Quarterly.

vi. Information about various trade delegations it intends to organize to various countries.

Period: Initially at beginning of financial year then before the organization of each delegation.

vii. Other industry related information required by SCIA.

Period: As and when asked for.

3. National Centre for Research (NCR)

NCR will provide IIIU the following:

i. Information about all the technologies it has developed in the prescribed formats.
Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

ii. Information about new technologies it has developed.
Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

iii. Information about new researches it has carried out.
Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

iv. Information about various feasibility studies it has carried out.

Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

IIIU will provide NCR

i. Information about new researches that are being carried out in the world .

ii. Information about new products that are entering the market (received from partner institutes or extracted through INTERNET or other international professional databases available on INTERNET).

Period: Weekly.

iii. Any technology request for new products or for improvement of quality.
Period: As and when it comes.

iv. Request for research and development in production of any product.

Period: As and when it comes.

v. Information about various queries put by NCR time to time.

4. Food Research Centre (FRC)

FRC will provide IIIU the following:

i. Information about various food technologies it has developed till now.

Period: Quarterly (However initially they have to provide all the information which has been compiled till now).

ii. Information about new technologies it is developing.

iii. Various researches it has carried out.

iv. Various researches it intends to carry out.

IIIU will provide FRC

i. New request for technology for food products.

ii. Information about various researches carried out in the world in the related areas (received from partner institutes or extracted through INTERNET or other international professional databases available on INTERNET).

iii. Text, bibliographic information or abstracts in various technologies developed in the world (received from partner institutes or extracted through INTERNET or other international professional databases available).

iv. Information about various trade fairs, exhibitions.

v. Information about queries put by FRC time to time.

5. Industrial Research and Consultancy Centre (IRCC)

IRCC will provide IIIU the following:

i. Results of R & D on the exploitation of raw materials for industry.

ii. Various feasibility studies.

iii. Various technological details from INTIB.

iv. Different training programs for entrepreneurs.

v. New technologies developed by IRCC.

vi. Shall help IIIU in evaluation and selection of technology for entrepreneurs.

IIIU will provide IRCC

i. New technology requests.(Any request by entrepreneur for modernisation, upgradation or acquisition of technology shall be passed to IRCC)

ii. New technology offers.

iii. Various researches carried out in other countries in specific areas.

iv. Feasibility request for new industry, sector study.

v. Various patents.

6. Investment Promotion Administration (IPA)

IPA will provide IIIU the following:

i. Information about various investment opportunities that exists in Sudan.

ii. Investment maps showing the location of various industries.

iii. Availability and adequacy of raw material at national level.

iv. Demand and supply data.

v. Geographical information.

vi. Various reports showing the promotional efforts devoted to different industries and their results.

IIIU will provide IPA

i. Results of various surveys carried out by IIIU regarding

   (I) Investment.

   (II) Raw material availability at international level.

   (III) New projects coming up.

ii. Various queries put by IPA time to time.

7. Central Bureau of Statistics (CBS)

CBS will help IIIU in carrying out various industrial surveys

CBS will provide IIIU the following informations:

i. Information about various surveys carried out and their results.

ii. Information about literacy rate, skill rates, industrial and occupational classification of the workforce, geographical information.

iii. Information about the buildings that are factories, (this survey has already been done by CBS).

iv. CBS will help IIIU in sampling, data processing and in various statistical analysis.

IIIU will provide CBS only for statistical analysis

i. Various industrial informations.

ii. New request in various areas (only for statistical analysis).

iii. Provide the data required for computation of value added by manufacturing industry in the computation of GDP.

8. PROPOSED INTERNATIONAL LINKAGES OF IIIU & INFORMATION EXCHANGE

Industrial Information and Investment Unit, in order to extract various technological informations, shall have access to various international professional databases besides its link to INTERNET. Some recommended databases on technological information are the following:

i) DIALOG

DIALOG is a network of more than six hundred databases that provide various informations like technological sources, technological abstracts, patent information, trade opportunities, raw material informations, technical analysis etc. from various countries. DIALOG is accessible on INTERNET. There are login charges as well as charges on information retrieved.

ii) Chemical Abstract Services (CAS)

CAS provides scientific & technological information related to chemical & pharmaceutical industries. It provides informations like technological sources, technological abstracts, patent information, trade opportunities, raw material informations, technical analysis etc. from various countries. There are login charges as well as charges on information retrieved.

iii) **Klenner Technologies Inc.**

Klenner is a professional database in USA that provides technological sources, abstracts, full information etc from all over the world. Information provided is chargeable.

iv) IAPSO

Inter Agency Procurement Service Office of UNDP at Denmark, Provides information on various projects and products for which it has invited bids for various countries. It can be a useful information for various investment opportunities and trade opportunities abroad. It is accessible on the Internet.

v) TINET

Trade Information Network of the Common Market for East and South African states (COMESA) can provide useful trade opportunities that exist among these states.

9. ORGANIZATIONAL STRUCTURE INDUSTRIAL INFORMATION AND INVESTMENT UNIT

Organizational structure of IIIU can be divided into four functional layers. It is shown in Figure 3. First layer consists of Manager who will be the overall incharge of IIIU. Second layer will consists of three Information Officers who will be responsible for compiling and dissemination of various industrial informations to industry. Third layer will consists of Programmers, Network Engineer and Librarian. Fourth layer will consist of Data Entry Operators.

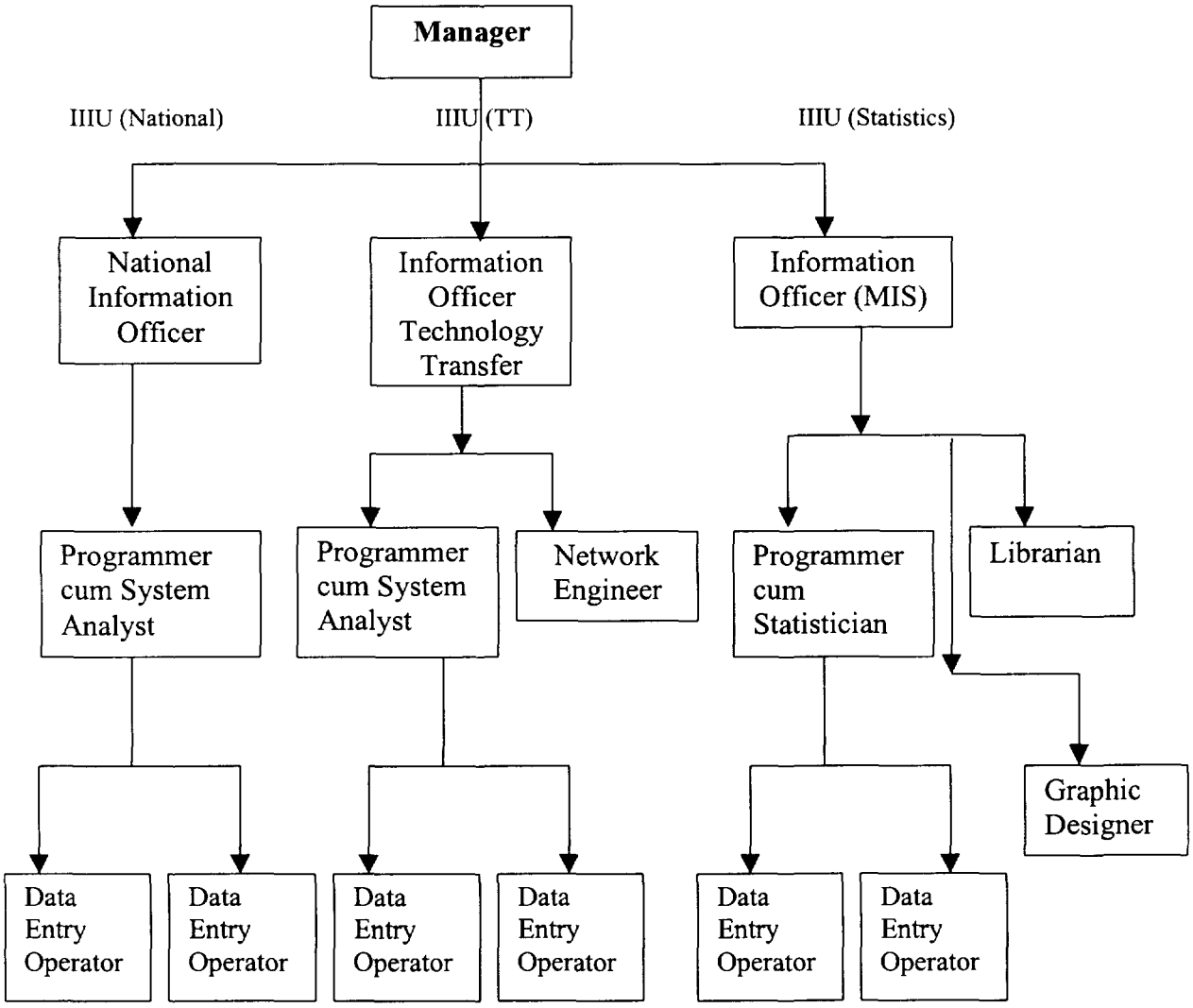


Figure 3

(i) Man Power Requirement

Manager	1
Engineers	2
Senior Statistician	1
Programmer cum System Analyst	2
Programmer cum statistician	1
Network Engineer	1
Librarian	1
Data Entry Operators	6
Graphic Designer	1
Total	16

(ii) Job Descriptions of Different IIIU Personnel

Manager :

i. Overall incharge of the Industrial Information and Investment Unit.

ii. Responsible for its Administration.

iii. Responsible for its smooth functioning to meet overall objectives of IIIU.

iv. Identification of partner institutions in different countries and liaison with them for technology transfers, partner matching.

v. Organization of trade delegations, technology expositions.

vi. Preparation of various projects related documents.

vii. Interaction with various UN Agencies for the promotion of small industries in Sudan.

viii. Liaison with Ministry of Industry for various policies for sustenance of industries in Sudan and also promotion of industry in Sudan, devise technology transfer policies.

ix. To regulate constant flow of information to and from various national nodes.

x. Evaluation of various technologies and investment opportunities.

xi. Generating awareness about IIIU in the Industry.

xii. Skill development of the existing staff.

xiii. Planning future functional strategies for IIIU.

National Information Officer

Will report to Manager
In charge of IIIU (National)
Should be an engineer preferably mechanical engineer

Responsibilities

i. Organization and collection of data about industries in Sudan according to prescribed formats (Annexure A) about national industry.

ii. Evaluation and cross checking of data.

iii. Will provide information to small and medium enterprises related to project ideas, project reports, machine manufacturers, raw material supplier etc. manufacturing standards.

iv. Preparation of databases related to industrial information, machine manufacturers in Sudan and outside, raw material supplier, goods being exported, imported etc.

v. Provide information related to government policies, incentives.

vi. Liaison with various departments of MOI especially Investment Development Department, Technology Transfer & Research Department, Industrial Production Department.

vii. Close coordination with National Nodes especially SCIA, SSMO.

viii. Information about how to start manufacturing industries (can be procured from UNIDO local office).

ix. Preparation of various information catalogues.

Information Officer (Technology Transfer)

Will report to Head
In charge of IIIU (Technology Transfer)
Should be an engineer

Responsibilities

i. Organization of data collection related to technology offers and requests according to prescribed formats.

ii. Will provide technological information to industries.

iii. Responsible for technology evaluation and suggesting the critical technologies that will enable the firm to achieve and sustain the competitive position.

iv. Location of potential business partners evaluation of potential entrepreneurs, preselection and final recommendations of business partner.

v. Liaisons with partner institutions abroad for technological information, trade opportunities.

vi. Access various international databases like project updates of IAPSO, DAILOG, KLENNER, CAS and various other trade related information on INTERNET according to specific queries.

vii. Generation of related databases.

viii. Organization of business delegations to other countries and also from other countries and organize one to one business meetings.

ix. Organization of trade fairs.

x. Close liaison and information with national technology generators especially IRCC, NRC, FRC.

xi. Information of Technology transfer policies of MOI liaison with various departments of MOI especially Technology Transfers & Research Department, Foreign Affairs & Technical Assistance Department.

xii. Creation and maintenance of home page on internet.

Information Officer (MIS)

Report to Manager
In charge of IIIU (Statistics)
Should be statistician preferably an industrial statistician.

Responsibilities

i. Organization of data collection.

ii. Supervise surveys in coordination with CBS.

iii. Provide statistical analysis to MOI through various analytical techniques.

iv. Provide development trends of industry in various sectors, areas and value addition through bar-charts, line-chart, pie-chart and other graphical representations using statistical analysis tools provided by UNIDO like IMPS, NISP application etc.

v. Provide various figures to MOI as and when required.

vi. Information to MOI about joint ventures, technology transfer, collaborations, etc.

vii. Analysis for future development.

viii. Smooth functioning of library.

Programmers in three sections will be responsible for

i. Smooth functioning of programs given by UNIDO like ARABWORD, IRMS, SYMPHONY, COMFAR etc.

ii. Development of new programs for data entry, information generation & retrievals etc. related to industrial information, technology offers and request, partner matching, statistical information etc.

iii. Organization of data entry, cross checking of data entered, report generation.

iv. Development of user-friendly programs for information retrieval and dissemination.

v. Creation and maintenance of home page on the INTERNET.

Data Entry Operators will be responsible for data entry.

Librarian

Will report to Information Officer (MIS)

Responsibilities

i. Collection of various trade journals, directories technological abstracts, magazines, periodicals etc.

ii. Cataloguing of information.

iii. Information collection from various embassies in Sudan and also from embassies of Sudan in various countries.

iv. Cataloguing of various informations collected by other units time to time using Micro CDS/ISIS software to feed text based information into the computers.

v. Documentation of current research on industry and technology.

vi. Publishing of monthly newsletter.

vii. Dissemination of information to its members.

viii. Coordinate information exchange with other libraries in other nodes especially IRCC, FRC, NCR etc.

Network Engineer

Will report to Information Officer (Technology Transfer)

Responsibilities

i. Should be responsible for proper functioning of Local Area Network within the office and between various nodes.

ii. Resolving hardware problems.

iii. Ensuring proper access to various international databases.

iv. Assisting programmers in their day to day work.

v. Maintenance of various computers and peripherals.

Graphic Designer

Report to Information Officer (MIS)

Responsibilities: Designing of various catalogues, Information brochures, newsletters, home page on Internet, Multimedia demonstration etc.

10. POSSIBLE PARTNER INSTITUTES IN VARIOUS COUNTRIES

IIIU can identify partner institutes in various developing or developed countries that represent various industries in their respective countries. These partner institutions can help IIIU in identifying various business partners for industries, Technology transfers, Trade opportunities. Besides this trade delegations to and from these countries can also be organized for business promotion. During these delegations one to one business meetings should be arranged by matching the profiles of visiting industrialists with that of host country.

The possible partner institutes can be following:

1. **National Small Industries Corporation Ltd, N.Delhi, India.**
2. **UN-Asian and Pacific Centre for Transfer of Technology, N.Delhi, India.**
3. **Taipei World Trade Centre, Taipei, Taiwan.**
4. **Small and Medium Industries Corporation, S. Korea.**
5. **BVMW, Germany.**
6. **NIMTEC, U.K.**
7. **Japan Small Business Corporation, Japan.**

11. RECOMMENDATIONS

To have constant flow of useful information among various nodes and dissemination of information to industries and also for sustenance and development of industries in Sudan, the following recommendations are made:

1. Sudan must define the definition of Small and Medium Industries and Large Industries (One way of defining can be based on investment on plant and machinery).

2. IIIU can identify various partner institutes in various developing or developed countries that represent various industries in their respective countries. These partner institutions can help IIIU in identifying various business partners for industries, Technology transfers, Trade opportunities, organization of trade delegations & one to one business meetings etc. Possible partner institutes have been mentioned in the report.

3. There is a need to develop network between IIIU at MOI, Khartoum and other industrial offices in different states for regular industrial information exchange.

4. It is suggested that Ministry of Industry shall take assistance of local agencies & nodes in compilation of information, preparation of project profiles, various directories, catalogues etc., and cross checking of the data.

5. The Manager of the IIIU and other senior officers should visit other countries to identify partner institutions to have technological exchange and develop trade opportunities. It is recommended that UNIDO may sponsor study tours of the concerned officers of IIIU to other countries such as India, Taiwan, Japan, Germany etc.

6. Information officers should get training in information collection, information handling and dissemination. Training can be given in India. Possible institutes can be National Small Industries Corporation (NSIC), Indian Scientific Documentation Centre, Council of Scientific and Industrial Research, UN-Asian and Pacific Centre for Transfer of Technology, Indian Statistical Institute.

7. Programmers should get training in latest programming tools, techniques and methodologies e:g ORACLE, OOPS, JAVA etc. These training can be organized locally with the assistance of an international consultant.

8. The IIIU should also acquire additional softwares like FOXPRO, ORACLE, IMPS, SPSS etc. for the development of different applications.

9. Once the information is compiled and computerized databases are ready, other related departments of MOI should also acquire computers for information retrievals and information exchange with IIIU.

10. In order to have consistency in information collection, retrievals & dissemination

    i. All the nodes should compile the information in the prescribed forms. They should use technology offer form for the technology they want to offer. They should use micro CDS/ISIS software for text, abstract and bibliographic information.

    ii. Technology request form should be filled for technology request.

    iii. Industrial Information Form should be used for collecting information about an industry.

    iv. Micro CDS/ISIS should be used for text based technological information.

    v. As per available skills, programmers should use FOXPRO for developing various programmes which can be later modified to ORACLE.

11. IIIU should also take steps to generate awareness among the industry about its services. This can be done by distributing brochures, team visit to various industries, participation in various trade fairs etc.

12. Once the network between IIIU & other nodes is fully operational, efforts should be made to widen the network by adding more nodes including financial institutes & industrial development banks and other identified institutes mentioned in the project document.

13. All identified nodes and other industrial development institutes should meet regularly to discuss & brain storm on industrial development related issues through mutual cooperation .

14. It is important to establish complete and up to date frame of industrial establishments. This can be done by pooling available information from different administration such as list of units compiled by Central Bureau of Statistics for 1993 census, registration office for companies, list of establishments paying taxes from the income tax department etc.

12. SUGGESTED WORK-PLAN FOR IIIU

In order to accomplish its goal, the following work strategy is suggested for IIIU:

i. IIIU should first prioritize the industrial segments for information collection. (e.g. Food Processing, Light Engineering, Energy etc.)

ii. Select the personnel from its various departments and local nodes and if need be from local agencies and constitute different teams for information collection & compilation, data processing, cross checking, preparation of various directories etc. Expertise of Central Bureau of Statistics can be utilised for industrial surveys.

iii. Time schedule

	Activity	Time Frame
a.	Compilation of information & data processing Designing of databases, Data entry programs, Information Retrieval programs etc.	six months
b.	Cross checking of data & correction	two months
c.	Trail run of the programs & Final implementation	one month
d.	Printing of various directories, catalogues Etc.	three months

iv. Regular monitoring (every month) of the work should be done by Project leader & should take necessary actions for meeting the schedule.

ANNEXURES

Annexure A

Industrial Information & Investment Unit IIIU
Ministry of Industry, Sudan

INDUSTRIAL INFORMATION FORM DATE _____ 1/2

<table>
<tr><td colspan="3">Company Name</td><td colspan="3">Chief Executive</td></tr>
<tr><td colspan="3">Factory Address</td><td>City Code</td><td>Tel</td><td>Fax</td></tr>
<tr><td colspan="3" rowspan="2">Contact Person
Street
Street
P.O. Box
City
State</td><td></td><td></td><td></td></tr>
<tr><td colspan="3">email</td></tr>
<tr><td colspan="3">Year of Establishment</td><td colspan="3">Production Commenced on</td></tr>
<tr><td rowspan="4">Total Present Assets
(in US$)

Investment on Plant and M/C
(in US$)

Gross Value of Production</td><td colspan="5" rowspan="4">Annual Turnover for Past 3years (in US$)
1996 1997 1998
Domestic sales
Exports
Profit Before Tax
Profit After Tax</td></tr>
<tr></tr>
<tr></tr>
<tr></tr>
<tr><td colspan="2">Main Products

1.
2.
3.
4.
5</td><td colspan="2">Installed production capacity
(Annual, No. of shift)</td><td colspan="2">Actual Production
(Annual,No. of Shift)</td></tr>
<tr><td colspan="2">By products
1.
2.
3.
4.
5.</td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td colspan="6">Main Market/Customers</td></tr>
</table>

INDUSTRIAL INFORMATION FORM contd 2/2

Type of Plant (Please tick)	Automatic ☐	Semi Automatic ☐	Manual ☐

MAN POWER

	Male	Female	Average Salary(US$)
Engineers			
Technicians			
Skilled labour			
Unskilled labour			
Other Staff			
Total			

Grand Total (Male+Female) =

LAND Covered Area sq.mt. Total Area (Open Area) sq.mt

UTILITIES

Electricity (Kw)		Steam (Kg/day)	
Water (Kl/day)		Fuel (Kg/day)	
Others			

Raw Material/Bought out Items Required

Raw Material	Annual Consumption	Cost.	Place of Purchase	Local/ Imported
1.				
2.				
3.				
4.				
5.				

Company Type

Public Company ☐

Private Company ☐

Public Concession Company ☐

Copartnership ☐

Type of Collaboration (Pl. Tick)

Joint Venture ☐

Technical know now ☐

Sub Contracting ☐

Technology Licensing ☐

Turnkey project ☐

From which Country ☐

Annexure B

Industrial Information & Investment Unit (IIIU)
Ministry of Industry, Sudan

TECHNOLOGY REQUEST FORM

<table>
<tr><td colspan="2">Company Name</td><td colspan="3">Chief Executive</td></tr>
<tr><td colspan="2" rowspan="2">Factory Address for Communication

Contact Person
Street
Street
P.O. Box
City
State</td><td>City Code</td><td>Tel</td><td>Fax</td></tr>
<tr><td colspan="3">email</td></tr>
<tr><td>Year of Establishment</td><td>Assets (in US$)</td><td>Annual Turnover
(US$)</td><td colspan="2">Employees</td></tr>
<tr><td colspan="2">Main product manufactured</td><td colspan="3">Industry Segment
Annual production Capacity</td></tr>
<tr><td colspan="5">Details of Quality Certificates held</td></tr>
<tr><td colspan="5">Title of Technology:
Brief Description of Technology Requested</td></tr>
<tr><td colspan="5">Type of Cooperation (Pl. tick)
☐ Joint venture ☐ Technical Know How
☐ Technical Licensing ☐ Turnkey Projects
☐ Subcontracting</td></tr>
<tr><td colspan="5">Investment amount (In US$) ☐

Countries Preferred for Cooperation
1. 2. 3.</td></tr>
</table>

Annexure C

Industrial Information & Investment Unit (IIIU)
Ministry of Industry, Sudan

TECHNOLOGY OFFER FORM 1/2

<table>
<tr><td colspan="2">Company Name</td><td colspan="4">Chief Executive</td></tr>
<tr><td colspan="2" rowspan="2">Factory Address for Communication
Contact Person
Street
Street
P.O. Box
City
State</td><td>City Code</td><td>Tel</td><td>Fax</td></tr>
<tr><td colspan="3">email</td></tr>
<tr><td>Year of Establishment</td><td>Assets (in US$)</td><td>Annual Turnover (in US$)</td><td>Employees</td></tr>
<tr><td colspan="2">Main product manufactured</td><td colspan="3">Industry Segment
Annual production Capacity</td></tr>
<tr><td colspan="5">Details of Quality Certificates held</td></tr>
<tr><td colspan="5">Title of Technology
Brief Description of Technology Offered</td></tr>
<tr><td colspan="5">Technical Advantages</td></tr>
</table>

TECHNOLOGY OFFER FORM contd . 2/2

Development Status (Pl. Tick)

☐	Feasibility	☐	Patented
☐	Laboratory Model	☐	Prototype
☐	Commercialized	☐	Others

Type of Offer (Pl. Tick)

☐	Manufacture Licensing	☐	Consultancy
☐	Patent for sale	☐	Sub contracting
☐	Joint venture	☐	Technical Know how
☐	Turnkey Project	☐	Distributorship

Inputs Required

Open Area	☐	sq.mt	Built	☐
Power (Kw)	☐		Water (Kl/day)	☐
Fuel (kg/day)	☐		Others	☐

Man Power

Engineer	☐	Skilled Labour	☐
Unskilled Labour	☐		

Raw Materials Required

Annexure D

Industrial Information & Investment Unit (IIIU)
Ministry of Industry, Sudan

WHO MAKES MACHINERY FORM

<table>
<tr><td colspan="3">Company Name</td><td colspan="3">Chief Executive</td></tr>
<tr><td colspan="3" rowspan="2">Factory Address for Communication

Contact Person
Street
Street
P.O. Box
City
State</td><td>City Code</td><td>Tel</td><td>Fax</td></tr>
<tr><td colspan="2">email</td></tr>
<tr><td>Year of Establishment</td><td>Assets (in US$)</td><td colspan="2">Annual Turnover (US$)</td><td>Employees</td></tr>
<tr><td colspan="5">Machinery Details

Name of machinery

Model

Selling Price (FOB)</td></tr>
<tr><td colspan="5">Specifications</td></tr>
<tr><td colspan="5">Area of Application</td></tr>
<tr><td colspan="5">Technical Advantages</td></tr>
<tr><td colspan="5">Other Information (if any)</td></tr>
</table>

Annexure E

Industrial Information & Investment Unit (IIIU)
Ministry of Industry, Sudan

RAW MATERIAL INFORMATION FORM

<table>
<tr><td colspan="2">Company Name</td><td colspan="3">Chief Executive</td></tr>
<tr><td colspan="2" rowspan="2">Factory Address for Communication

Contact Person
Street
Street
P.O. Box
City
State</td><td>City Code</td><td>Tel</td><td>Fax</td></tr>
<tr><td colspan="3">email</td></tr>
<tr><td>Year of Establishment</td><td>Assets (in US$)</td><td>Annual Turnover (US$)</td><td colspan="2">Employees</td></tr>
<tr><td colspan="5">Raw Material Details

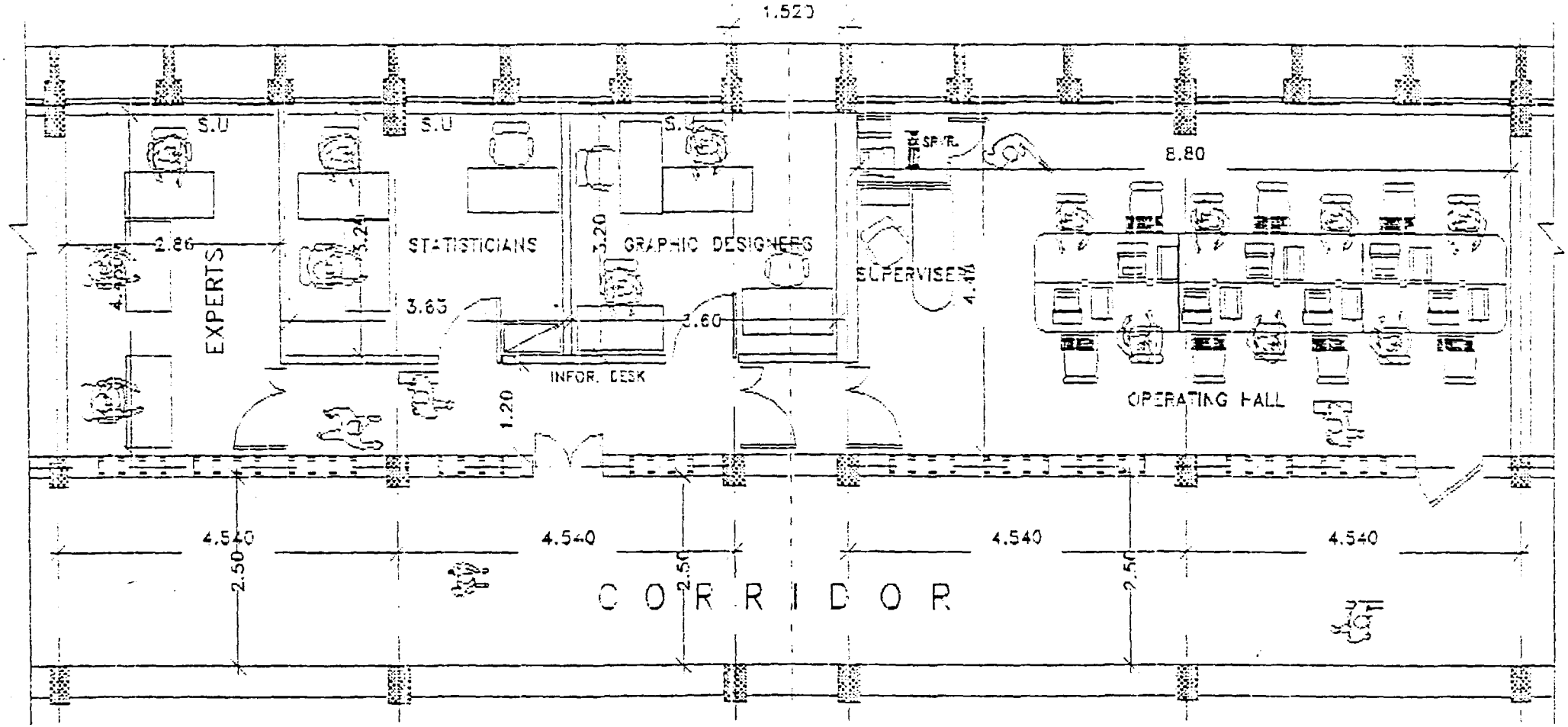
Name of Raw Material

Selling Price (FOB)</td></tr>
<tr><td colspan="5">Specifications</td></tr>
<tr><td colspan="5">Area of Application</td></tr>
<tr><td colspan="5">Other Information
Whether Manufacturer/Producer ☐ Importer ☐</td></tr>
<tr><td colspan="5">If Imported, State name of the country
Quantity of Imports (Annual)
Value of Exports (US$) Duty Paid(US$)</td></tr>
</table>

ANNEXURE I

SITE PLAN FOR IIIU

IIIU



PROPOSED INFORMATION CENTER

LAYOUT

ANNEXURE J

IIU NATIONAL NETWORK LAYOUT