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SUDANESE INDUSTRIES ASSOCIATION

DATA UNIT

XP/SUD/90/020

SUDAN

Technical report:
Findings and recommendations*

Prepared for the Government of the Republic of the Sudan by
the United Nations Industrial Development Organization

Based on the work of Ahmed Saidane,
Industrial Information Adviser

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* This document has not been edited.

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EXPLANATORY NOTES

The Sudanese Pounds has two official values:

1) Administration and International Organizations

rate : 1 \$ = 4.30 S.P.

2) Commercial rate : 1 \$ = 12.10 S.P.

ACRONYMS AND SHORT TERMS

SIA	Sudanese Industries Association
IRCC	Industrial Research and Consulting Centre
CD-ROM	Compact Disc - Read only Memory used for the storage of large amount of data on a small machine readable disc
CDS-ISIS	Computerized Documentation System - Integrated Set of Information Systems: a data base management software developed by UNESCO for storage and retrieval of textual data. It was arabised by the Arab League Documentation Centre.
INTIB	Industrial and Technological Information Bank of UNIDO.

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Working with the Sudanese during this very short three months was for me a pleasure.

I recommend them to continue and I am sure that they are going to make the maximum profit from my intervention.

A B S T R A C T

Personal Author : Ahmed Saidane
Corporate Author : UNIDO
Corporate Author Place : Vienna
Date : June 1990
Project number : XP/SUD/90/020
Title of the project : Establishment of an Industrial
Documentation and Information Data Unit

The objective of the Industrial Information Adviser mission was to implement an Industrial Documentation and Information Centre, to prepare a master plan for the organization and the operation of the Unit, to supervise installation and putting into operation of equipment, to organize a data collection procedure and establish regular contacts with industries, to assist in designing and developing computerized data bases, to organize on-the-job training for the national counterparts to identify the best ways to link the Unit to international information sources, to initiate the issuance of a periodic publication for dissemination of industrial and technological information.

The objectives were attained and recommendations were made for the development of advanced data bases based on a general survey covering the industrial establishments in Sudan.

INTRODUCTION

This report presents the results of three months consultancy in the Sudanese Industries Association (SIA) Khartoum, Sudan.

The mission was executed within the project XP/SUD/90/020, establishment of an Information and Documentation Unit within SIA, and started on March 9, 1990.

It covers the SIA Industrial Information Centre implementation (data collection, storage, retrieval and dissemination of information)

The objectives of this mission are presented in the job description (duties).

The work done is presented in the sections 1 to 6.

A summary and recommendations are included at the end of this report.

Annexes are provided at the end of this report to give a more comprehensive picture and sample of the work done.

They are an integrated part of this report.

BACKGROUND

At the present time there are two information and documentation units in Sudan, the services of which are to some extent related to the industry.

The first, established within the National Council for Research, serves primarily the scientific community and therefore its information data bases are prevailingly related to the basic and applied research: this unit consists of a library, a microform section, a documentation section and presently is being equipped with the IBM microcomputer.

The second one is the Information and Documentation Department in the Industrial Research and Consultancy Centre (IRCC).

The IRCC has been established with the assistance of UNIDO and represents a technical arm of the Ministry of Industry. The Information and Documentation Department of the Centre comprises a library, an information and publication, documentation and printing and binding sections. The library has a collection of 6,000 books, international standards and around 115 periodicals.

Due to serious financial constraints and lack of foreign exchange the acquisition of books, standards and subscription of periodicals has been discontinued in the past nine years.

The Ministry of Industry plans to strengthen the Standardization and Quality Control and Documentation and Information Departments in the future and will probably seek a technical assistance from UNIDO in this respect.

The intention of the Ministry is to establish within the IRCC a National Information Centre that would collect all sorts of industrial information from Sudan and abroad.

The informational data collected and processed by this Centre would serve primarily the policy and decision makers particularly the ministries of industry and planning and the professional staff of the IRCC.

This is, however, a need to have in the country an Information and Documentation Unit that would promptly provide the industrial entrepreneurs, local and foreign investors with reliable and up-to-date information on the industry; i.e. technical, economical, technological information data on manpower, raw materials, production indicators, exports, imports, exchange rates: cost of manpower, building materials, construction works, statistical data.

All such data and many others must be readily available in order to run the existing industry efficiently to improve utilization of its capacity and to enable preparing sound and realistic new investments in the industry.

The need for establishing of such Unit within the Sudanese Industries Association was felt intensively by its management and also recognized by the Ministry of Industry.

A draft project document on establishing of such an Unit had therefore been prepared with active participation of the SIDFA and UNIDO was officially approached for a technical assistance.

This project document is based on the draft prepared and submitted by the Government and the findings of the short-term advisory mission fielded in Sudan on recommendation of the Project Review Committee of UNIDO.

After assessing the above outlined information needs and existing situation in the country regarding provision of information on and to the industry, the mission came to the conclusion that most appropriate place for housing of the Information and Documentation Data Unit is the Sudanese Industries Association .

This association represents over 1100 industrial units in textile, vegetable oil and soap, engineering, chemical and pharmaceutical, foodstuff and canning, leather and shoe, printing and publishing and miscellaneous industries.

It is a representative body of the private industrial sector recognized both by the Government and industry. Moreover the Association has already made available suitable premises to accommodate the Unit and is prepared to assure proper staffing and financing.

Duties of the Mission

The project XP/SUD/90/020 - establishment of Industrial Information and Documentation Centre was executed by U.N.I.D.O. in SIA.

A consultation in Industrial Information processing was provided for three months.

The terms of the job description are:

1. Assess the information needs of potential users of the Data Unit, identify the information sources existing in the country and organize work related to collection, processing, storing and dissemination of information;
2. Prepare a master plan for the organization and operation of the planned Unit, including organizational chart;
3. Supervize installation and putting into operation of equipment;
4. Prepare guidelines and organize extension services and establish regular contacts with industries;
5. Assist in designing and developing computerized data bases;
6. Organize on-the-job training and prepare appropriate training programmes for the national counterparts abroad;

7. Identify the best ways and means of establishing links with other national data banks and international information sources, including UNIDO's INTIB;
8. Organize seminars/presentations on selected topics in the field of industrial information;
9. Initiate the issuance of a periodic publication/newsletter for dissemination of industrial and technological information.

FINDINGS

The SIA Industrial Information and Documentation Centre is in the SIA building.

Three rooms are assigned for the Centre, one for the library, and the reproduction equipments, the second for the computer, the third for the audio-visual equipments, the conferences and the data collection groups.

All the equipments are received on the beginning of 1989 and were still in their packages.

The staff of the SIA Information Centre was trained in Sudan and abroad and is composed of four young and dynamic persons.

The books in the library are stored without any registration or classification.

There are small libraries in the SIA decorating the directors offices.

Nobody knows the quality of the documents stored in SIA libraries.

There is no loan system for the circulation control of documents.

There is no data collection sheets or cards catalogue for the library.

The periodicals existing in the library are received as gift and there is no subscription to any technical review.

The information existing about the Industrial Companies or factories are very limited.

A register is maintained with the list of 917 Industrial Units, members of the SIA.

A very short questionnaire was sent by SIA to the members and only 240 was received back.

The data are in arabic and the computer was ordered without arabic characters.

ACTIVITIES AND OUTPUTS

Section 1 : Equipment and Software Installation

1. Equipment Installation:

The equipment received by SIA for this project are listed below:

- One Photocopying machine.
- One Slide Projector.
- One Overhead projector.
- One Micro computer IBM PS2/50 Z.
- One Laser Printer.
- One CD-Rom drive system.
- One Modem.

All these equipments were installed during the first week of the mission.

The SIA personnel participated in the installation.

For the computer, the installation was performed with the assistance of the IBM representative in Khartoum.

2. Software Installation:

All the computer hardware components are successfully installed.

- a. The Operating System DOS 4.0 was installed, with some utilities (PCTOOLS, NORTON...).

- b. The computer was delivered with the latin characters only.
The SIA applications are almost in arabic.
With the assistance of the IBM representative in Sudan, the Arabic Kit was successfully installed and the Latin keyboard was exchanged by a bilingual one with the helpful cooperation of the UNDP office in Khartoum.
- c. The data base management system CDS/ISIS 2.3 Latin version was installed in the beginning and the Arabic Version 2.3 was implemented later on.
- d. The DBASE 4.0 software was received and some problems are declared in this version, added to the absence of the English documentation (the documentation received was in German), for that the Dbase3 was installed.
- e. The Wordprocessor Word Perfect was successfully installed using the laser printer and the IBM proprinter X24.
- f. The UNIDO-INTIB system, received at the end of the mission was installed but the SIA staff was not enough trained on it.

Section 2 : The Bibliographical Information System

Part I: Library Organization and Automation

1. Data Collection

1. Registration System

To facilitate the inventory of the library contents a registration system was implemented and all the documents registered (898 documents).

2. Identification

A stamp was manufactured and put on each document with the following informations:

- Registration Number
- Registration Date
- Location
- Class number
- MFN (Computer number)

3. Data Collection Sheet

To allow the data collection, a sheet was designed and implemented. It contains the following informations:

- Registration Number
- Registration Date
- Location
- Class Number
- Type of Document

- Main Title
- Second Title
- Personal Author Name
- Corporate Author Name and Place
- Collation (Page)
- Edition
- Publishing Data (Name, Place, Date)
- ISBN
- ISSN
- Ancillary Notes
- Descriptors

A workshop was held to train the counterparts on the using of the library data collection sheet.

4. Classification System

Because there is no classification system used by SIA Library, and after consultation of the systems available, the Dewey Decimal Classification was selected.

It is the same system used by IRCC.

A list of the most current classification numbers was established and the counterparts were trained on its use within a workshop.

The class number is registered on the document, and on the data collection sheet.

5. Indexing and Abstracting

Approximately all the documents existing in the library are processed and a data collection sheet established for each document. The keywords are selected from the text without any standard. It is urgent for the SIA Information Center to provide the acquisition of the UNIDO thesaurus or the AIDO multilingual thesaurus to standardize the keyword selection.

6. Reshelving

All the documents are reshelved according to the new classification system.

II. Data Base Design and Construction

The CDS/ISIS data base management system was installed in the IBM Micro Computer assigned for the Information Centre.

1. Library Data Base: SILIB

According to the library data collection sheet, a data base was built using the CDS/ISIS software. Some fields are selected to be inverted and used for the information retrieval: class number, title, author, descriptors.

Two display formats were designed to be used for retrieval and printing of information.

- a) Display Format SILIB: Field/line format, useful for the data verification.
- b) Display Format SILIB1: ISBD format, respecting to the international standards.

2. Classification Data Base: CLASS

To help the documentalist in the classification and in the retrieval services, a data base for the selected classes was built and the class numbers stored on it.

A directory sorted by designation was printed to help the indexers in the library.

III. Data Storage

An on-the-job training was held to make the counterparts familiarized with the data entry and update in the data bases.

240 records are entered in the library data base and the data entry has to be continued to store the whole document (more than 1000).

974 records are already stored in the CLASS data base and used for the automatic classification.

IV. Information Retrieval

The Library data base is retrievable on all the inverted fields:

- Class number
- Title
- Author
- Descriptors (Key-Words)

A dictionary was built by the system to be used for the retrieval argument selection.

The retrieval result is displayed on the screen. A combination of arguments can be done with the Boolean operators.

V. Sorting and Printing

The CDS/ISIS software gives sorting and printing facilities.

Samples of Library directories were printed.

An on-the-job training was held for counterparts to familiarize them on the sorting and printing techniques.

VI. Information Services

The Bibliographical Data Bank is built to serve the users of the SIA Information Centre. The services are:

1. Reader services: for the visitors of the library
2. Answering enquiries:-
 - for SIA staff
 - for external users

This will be done using the computerized facilities.

3. Current awareness: for all the new acquisitions.
4. Selective dissemination of information: profiles of the regular clients of the library will be established and automatic distribution will be provided for these clients according to their profiles.
5. Directories, bulletins will be printed from the computer periodically and used as the main tools for the Library.

6. Reference services.

The librarian and the information officers were very well trained to assume these tasks.

VII. The Loan System

Before this project there was no loan system in the library and any user could take the documents without any efficient control system.

A new loan system is now implemented and has two objectives:

1. To know where the borrowed books are;
2. To know for each borrower, what document he took from the library and when.

For this, two cards are established for every document.

They contain the following informations:

- Registration number
- Class number
- Title of document
- Author
- Borrower name
- Loan Date

- Signature
- Return date

An envelope is fixed on the last page of the document or on its cover.

For each document the two cards are placed inside this envelope.

When the book has to be given for a borrower, a line of each cards must be filled with these information:

- Name of borrower
- Loan date
- Signature

One card must be put in a file sorted alphabetically of the document title. The other card is put on the borrower file sorted alphabetically by borrower names. Each file is put in a special box in the library. The last column of the loan card (return date) will be filled when the document is returned to the library.

The librarian must put the cards back in the special envelope fixed in the book.

Part II. The Periodicals

I. Inventory

The periodicals are an important tool for the up-to-date information and for the dissemination and transfer of new technology.

An inventory of the existing periodicals shown that there are 84 different titles (40 in Arabic and 44 in English).

The existing periodicals in the library are received as gift. There is no file or card catalog for the periodicals registration.

II. Cardex Card Design

The necessary Cardex card was designed and implemented in the library. For each periodical, one cardex card was filled to allow the follow up of the periodicals received, by subscription or gift.

III. Data Base Design: SISER

According to the Cardex Card, a data base was built in the computer using the CDS/ISIS data base management software with the following fields:

- Title of serial
- Publisher name and address
- Frequency

- Acquisition mode
- Year of last number recorded
- ISSN
- Number of copies
- Subscription period, price
- Circulation
- Registration

A display format was also designed to be used for the data retrieval or printing.

IV. Data Storage

The data of all the 84 existing periodicals in the library are stored in the data base.

V. Information Retrieval and Printing

The periodicals data base is retrievable on the inverted files:

- Title of serial
- Year of last number recorded

A catalog was printed from the SISER data base sorted by title.

VI. Articles Indexing and Abstracting

An on-the-job training was organized to familiarize the documentalists about the indexing and abstracting of the periodicals articles and their storage in the library data base.

Section 3 : Industrial Information System

One of the main objectives of the SIA is to increase the efficiency of the Industrial Sector in Sudan.

The SIA Documentation and Information Centre has to provide the appropriate information to help the SIA in the preparation of the right official decisions.

I. Existing Data Collection Sheet

1. Data Collection

The Industrial Information Section had already made an essay of data collection by sending a Data Collection Sheet to the enterprises with a minimum data (enterprise name, location, owners, products).

About 240 sheets were received back.

2. Data Base Design and Construction

A data base (SIENT) was built using the CDS/ISIS system for the storage and processing of the enterprises data.

3. Codification and classification

The Industrial Chambers and the regions were codified to allow the sorting by type of activity and by region

4. Data Entry (Storage)

After the codification, all the available data were stored in the data base and the inverted files built automatically.

5. Information Retrieval, Sorting and Printing

A display format was designed and used in the retrieval and printing services.

A Directory by sector and another by region were printed.

A third Directory was printed where the enterprises are presented by SIA subscription number. This directory is useful for the Administration and Financial Department who is responsible of the subscriptions.

The data of the remaining enterprises will be stored in the data base to complete the Directory.

II.SIA Data Bank

1. The New SIA Data Collection Sheet

Working sessions were organized to design a new Data Collection Sheet covering all the data needed by SIA.

This sheet is divided into five sections:

- Description data: general data about the enterprise (name, owners, address, legal organization...).
- Employment and earnings.
- Inputs (raw material, spare parts, consumable and services...).
- Outputs (products, services)
- Taxation and statistics.

The sheet was tested with sample data and was accepted by the SIA Management.

2. Codification - Classification

A codification System was implemented and concerns:

- Chamber Code.
- Industry Code.
- Region Code.
- ISIC Code for the products.

3. General Survey

To collect the data from the source, the enterprises themselves, an arrangement with two Universities was organized:

- The Ahfad University.
- Om Dorman University.

Two workshops about Data Collection and codification was attended by 26 students from Ahfad University and 32 students from Om Dorman University to familiarize the students to the details of the Data Collection Operation.

A General Survey was started covering the 917 enterprises members of SIA.

This operation is planned for two months minimum. The follow up is allocated to the Industrial Information Section.

Two statistical tables were established for 765 enterprises and give an idea about the enterprises distribution in Sudan:

- 595 enterprises in Khartoum
- 170 enterprises in the provinces

The major part of the enterprises are from the Oil and Soap Chamber (167 with 91 enterprises in Khartoum) and from the Food Processing Chamber (223 with 180 enterprises in Khartoum).

Section 4 : Dissemination of Information

1. Computer Outputs

Some output formats are designed for each data base and are used to display or print informations.

The library:

- A directory is printed by class showing the contents of the shelves and presenting a bibliographic description of the documents
- An ISBD (International Standard format is designed and used to print the records to be published by subject in the SIA periodical review.

The Periodicals :

A Directory is printed to be kept in the library and used for the follow up and information about the periodicals.

Industrial Information:

Three directories are printed from the SIENT (Enterprises) data base and are available in the Industrial Information Unit:

- A Directory by Industrial Sector (Chamber).
- A Directory by Region.
- A Directory by Registration Number

The retrieval by product can be made when necessary.

2. SIA Periodical Review

A review is implemented in SIA. The first number is distributed during the Seminar presenting the SIA Information Centre held on June 2nd, 1990. It contains:

- SIA presentation.
- SIA Information and Documentation Centre.
- Sector file: The Plastics.
- The Industrial Data Collection Survey.
- Current awareness.
- The library bulletin.
- News
- The International Fairs.

The review is reproduced in 150 copies.

3. Selective Dissemination of Information

An Address Data Base (SIADR)

was built to store the addresses of the clients interested by the Industrial Information.

One of the fields of this data base is reserved for "field of interest" and will contain the profile of the client to be used for the selective dissemination of Information (SDI).

Section 5 : Training and Workshops

During the mission, workshops and trainings (annex 1) are organized to develop skills among the counterparts in the use of the information processing techniques implemented in SIA Information Center, and provision of information services and application of computerized management information systems.

On-the-job trainings are also conducted to familiarize the counterparts to the data base management exploitation and maintenance.

A computer training course was held to initiate the SIA technicians to the CDS/ISIS Data base management system.

The workshops and trainings are listed below:

1. Workshop about library data collection, abstracting and indexing.
2. Workshop about library classification using the Dewey Decimal Classification.
3. Computer training course: Initiation to CDS/ISIS Data Base Management System.
4. Workshop about the SIA data collection and codification
5. On the job training in Data Storage, Information Retrieval, Sorting and Printing.

6. Workshops about the enterprises Data Collection ,
Classification and Codification held for the students:
 - Ahfad University (26 students)
 - Om Dorman University (32 students)

7. Seminar: Presentation of the SIA Industrial
Documentation and Information Centre.
Statistics about the participation to the trainings and
workshops are presented in the following table:

INFORMATION SYSTEM TRAINING AND WORKSHOPS
PARTICIPATION

Personnel Trained

Subject	As Counterparts	Through Workshops	Total
Data Collection	4	14	18
Data Classification and Codification	4	58	62
Data Storage	4	2	6
Data Retrieval	4	2	6
Data Sorting and Printing	2	2	4
Computer Training: Data Base Management (CDS/ISIS)	4	11	15

Section 6: The Organization and Structures of the SIA Information Centre

A proposal for the organization of SIA Information Centre was presented to the SIA Management (annex 2). This is to ensure the success for all the actions and procedures implemented, and realize the objectives of the Information Centre.

I. Objectives :

1. Provision of information required by the enterprises in the industrial sector.
2. Assistance of enterprises by providing feasibility studies, technological information, new processes, patents, standards, etc.
3. Provision of processed information required by official institutions and decision makers.
4. Development of capable trained staff in the field of information system.

II. Functions

To realize these objectives, the SIA Information Center will perform the following functions:

1. Selection and acquisition of the documents and information in different forms.
2. Organizing surveys to collect up-to-date informations.

3. Processing of these informations using modern technology.
4. Dissemination and diffusion of information:
 - Constitution of sectorial files
 - Selective dissemination of information
 - Current awareness
 - Publishing and diffusion of directories, reports
5. Assuming enquiry answering
6. Training internal staff on the up-to-date techniques of information processing.
7. Organizing workshops to inform and train external users of the SIA Information Centre services.
8. Coordination with other national institutions for complementarity and to avoid duplication.

III. Components of the SIA Information Centre

The SIA Information Center Units presented in Annex 2 and detailed below:

1. The Library Unit

This unit has in charge the management of the library and is called to assume the following functions:

- Providing the reader services
- Acquisition, storage, retrieval and servicing the documentary materials

- Acquisition of periodicals, reports, feasibility studies, guides, directories and all reference materials.
 - Acquisition of visual and audio visual materials: micro-forms, video cassettes...
 - Management of special collections.
 - Collection of press clippings
 - Preparing and publishing a library bulletin to inform the users of the new acquisitions of the library, books, serials..
 - Loan services
 - Shelving and maintenance of the documents
 - Preparation of the data collection sheet for the descriptive data and indexation.
 - Data entry in the library and the Periodicals Data Bases
2. Documentation and Information Services
- Document analysis
 - Indexing and abstracting
 - Current awareness services
 - Selective dissemination of Information (SDI)
 - Enquiry services
 - Establishment of guides and directories
 - Preparation of bibliographics and sector files

3. Industrial Information System

- Follow up the development and updating of the SIA data bank
- Organizing surveys, selection of informations
- Data collection and codification
- Development and follow up of the Technological data bank
- Storage and retrieval
- Establishment of guides, directories from the statistical and technological data banks
- Enquiry services

4. Computer Processing Unit

- Data base design and building
- Data base maintenance
- Display formats and output design
- Inversion service
- Sorting and printing
- Assistance of the other units in information retrieval

IV. Requirements

Sufficient funds have to be assigned for the Information Center to allow new acquisition for:

- The books
- The periodicals
- The microfiche library which is actually non existent

Microfiche reader - printer must be implemented in the library.

SUMMARY AND RECOMMENDATIONS

A. SUMMARY OF ACTIVITIES CARRIED OUT

1. Equipments Installation.
2. Software installation.
3. CDS/ISIS Installation.
4. Implementation of the bibliographical Data Bank :
 - a. The Library
 - Design of the library data collection sheet
 - Design of library registration system
 - Selection of classification system
 - Establishment of classification list
 - Implementation of the registration system
 - Supervising the registration of the SIA library documents (898 documents)
 - Implementation of:
 - data collection
 - classification
 - abstracting
 - b. Design and implementation of a loan system
 - c. The periodicals
 - Design of periodicals data collection sheet (cardex card)
 - Periodicals registration and data collection (84 periodicals)

d. Computer application

- Design and building of the data bases on the computer using CDS/ISIS software, for the:

- Library
- Classification
- Periodicals

- Supervising the library data entry in the data base
- Retrieval system installation
- Dissemination of information
- Printing Directories

e. Reshelving the documents in the library according to the new classification (books, reports, collections, periodicals)

5. Implementation of the Industrial Information System:

a. Existing Data Collection Sheet:

- Codification
- Data Base design and building
- Supervizing data entry
- Printing directories
- Retrieval and dissemination of information system installation

b. Industrial Data Collection Sheet

- Design of the Data Collection Sheet :
 - Description
 - Employment and Earnings
 - Inputs
 - Outputs
 - Taxation and Statistics
- Organization of a General Data Collection Survey
- Classification and Codification System.

6. Training and Workshop Conducted

On-the-job training about the SIA Review preparation and reproduction:

- Workshop on library data collection
- Workshop on classification and abstracting
- Training counterparts regarding computerized storage and retrieval of bibliographic data using CDS/ISIS.
- Training on printing of library catalogues by titles, by authors, by keywords.
- Workshop on the SIA data collection and codification
- On-the-job training for counterparts regarding computerised:
 - Data entry and updating
 - Retrieval
 - Sorting and printing

- Computer training course on CDS/ISIS (Data base Management System):
 - Initiation to data base design and definition
 - Data entry
 - Inversion of files and retrieval services
 - Display formats
 - Sorting and printing
- 7. Seminar: General presentation of SIA Information System
 - Utilization
 - Maintenance
 - Perspectives
- 8. Issuance of a periodical publication, the SIA REVIEW.

B. RECOMMENDATIONS FOR FUTURE ACTION

1. Library acquisitions

- Allocation of the necessary funds for the library new acquisitions :
- Establishment of document lists for the new acquisitions :
 - Books
 - Periodicals
 - Micro forms

2. Preparation of sectorial files for the main fields covered by SIA:

- Oils and Soap
- Textiles
- Chemicals
- Food processing
- Printing - Packaging
- Leather and shoes
- Engineering

3. Establishment of user profiles for the Selective Dissemination of Information (SDI) sources.

4. Technological Information System

It will be useful to provide information on any available support (paper, microform, magnetic support), about:

- a. Project data
- b. Products design: for some products in the most important sectors supported by SIA
- c. Supplies of production techniques - machinery - new technologies.
- d. International Standards :
A contact must be established with the International Standardization Organization (ISO) to collect the International Standards object of interest of the SIA members.
- e. Patents: a contact must be established with (INPADOC) International Patents Documentation Centre to receive documentation about Patents.
- f. Files and documentation must be established about the:
 - Industrial operators
 - Sources of Supplies (Spare parts, raw materials, etc.)

5. Acquisition of a microfiche copy of a part of the UNIDO library, related to the main sectors covered by SIA.
6. To help the indexors and the information officers, the acquisition of a copy of the UNIDO or AIDO multilingual Thesaurus is recommended.
7. Continuation of the training for the SIA personnel and the Information Centre users about the use of the information services.
8. Microfilm and microfiche equipments are to be purchased in case of microforms acquisition.
9. Due to the problems of transport in Khartoum, it is recommended to purchase some cheaper vehicles like Motor Cycles, scooters or equivalent to facilitate the data collection and update.

10. Due to the time limit for this project and the absence of any realization before this period the industrial information system installed covered only the general description informations of the enterprises. It is an evolutive system.

A new Data Collection Sheet was implemented and a General Survey started. It needs about three months to be completed.

New Data bases have to be implemented to hold the new system.

The SIA must find the appropriate solution to realize this part of the project to have a veritable Industrial Data Bank.

A N N E X E S

ANNEX 1 : Workshops and trainings conducted

Annex 2 : SIA Information Centre organization

A N N E X 1

WORKSHOPS AND TRAININGS CONDUCTED

**PROGRAMME OF THE TRAINING COURSE AND THE WORKSHOP
ABOUT LIBRARY DATA COLLECTION ABSTRACTING
AND INDEXING**

Duration : Two days

Date : 18 - 19/3/90

Number of participant : 18

Programme:

- 1) Objectives of a bibliographic data bank
- 2) Presentation of the data collection sheet
- 3) Explanation of the fields content
- 4) Training on the filling

of the descriptive
informations :

- Main title
 - Secondary title
 - Title of document of origin
 - Personnel Author name
 - Corporate Author name and place
 - Collation
 - Edition
 - Publisher name, place and publishing date
 - Ancillary notes
- 5) Practical use and exercices
 - 6) Objectives of :
 - Registration number and date
 - Classification number
 - location
 - 7) Examples
 - 8) Training on searching descriptors (keywords)
 - 9) Exercices
 - 10) Exercices about the full using of the library data collection sheet
 - 11) Presentation of the codification used for :
 - Classification (Dewey)
 - location (local)
 - 12) Exercices and test
 - 13) Distribution of certificates

List of Participants to the Training
course about the
Library Data Collection, Abstracting and indexing

- | | |
|------------------------------|------------------------|
| 1. Omer Hussein Abdel Gader | SIA |
| 2. Abdel Wahab A. Al Hussein | SIA |
| 3. Wafa El Sir Hassan | SIA |
| 4. Mona Youssif Salama | SIA |
| 5. Haiki Airmont | SIA |
| 6. Hayat Mohamed Al Hassan | SIA |
| 7. Iqbal Ibrahim | SIA |
| 8. Layla Muzzamil | SIA |
| 9. Izzeddine Bilal | Khartoum University |
| 10. Osman A. Rahman | " " |
| 11. Niemat Taha | Management Institute |
| 12. Adnan Ahmed Babour | " " |
| 13. Salah Edine Sultan | Journalist |
| 14. Sarra Omer Mahgoub | General Sewing Company |
| 15. Mawia Youssif El Batry | Administration |
| 16. Amal Mansour | Al Bitar Company |
| 17. Asaad Mohamed Al Birri | IRCC |
| 18. Isam Al Fadhel Ibrahim | IRCC |

PROGRAMME OF THE COMPUTER TRAINING COURSE
CDS/ISIS DATA BASE MANAGEMENT SYSTEM
HELD AT SIA - KHARTOUM
BY MR AHMED SAIDNE, INDUSTRIAL INFORMATION
ADVISER

Duration : Three days

Date : 20 - 22 / 3 / 90

Number of participants : 15

Programme :

March 20 : 1) Data base structure
2) System architecture
3) The field definition table (FDT)
4) The field select table (FST)

March 21 : 1) Data entry and update
2) The Formatting Language
3) Practical exercices

March 22 : 1) Inverted files
2) Retrieval Services
3) Sorting and printing
4) Practical exercices
5) Distribution of Certificates

PROGRAMME OF THE WORKSHOPS ABOUT

ENTERPRISES DATA COLLECTION AND CODIFICATION

1) AHFAD UNIVERSITY

Duration : Two days
Date : 9 - 10 / 5 / 90
Number of participants : 26

2) OM DORMAN UNIVERSITY

Duration : Two days
Date : 12 - 13 / 5 / 90
Number of participants : 32

PROGRAMME :

- 1) GENERAL INFORMATIONS
- 2) EMPLOYMENT AND EARNINGS
- 3) INPUT INFORMATIONS
- 4) OUTPUT INFORMATIONS
- 5) TAXATION AND STATISTICS
- 6) CODIFICATION AND CLASSIFICATION

A N N E X 2

S I A I N F O R M A T I O N C E N T R E O R G A N I Z A T I O N

INDUSTRIAL INFORMATION
SERVICES

Mr Omer H. A. Gader

Mrs Mona Y.
Salama

- Data collection
- Data updating
- Data entry
- Answering Enquiries
- Current Awareness
- SDI
- Reports, Directories
- Referral services
- Sectorial files

LIBRARY

Mr A. W. Al Hussein

Miss Wafa El
Sir Hassan

- Acquisition
- Classification
- Cataloging
- Indexing
- Abstracting
- Data Entry
- Loan Service

COMPUTER UNIT

Miss Wafa E. S. Hassan Mrs Mona Y.

Salama

- Data base design
- Data base maintenance
- Format design
- Inversion
- Sorting and printing
- Development of new applications
- Follow up of data entry and update

GENERAL APPLICATIONS

Mrs Mona Youssif
Salama

Miss Wafa E.S.
Hassan

- Word Processing
- Administrative applications