



**TOGETHER**  
*for a sustainable future*

## OCCASION

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



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

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

## FAIR USE POLICY

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

## CONTACT

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

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

RESTRICTED

16913

DP/ID/SER.A/1J36  
13 July 1988  
ENGLISH

FEDERAL INSTITUTE OF INDUSTRIAL RESEARCH,  
INDUSTRIAL INFORMATION CENTRE  
PHASE II

DP/NIR/83/021

NIGERIA

Technical report: Training activities for  
the development of information services for industry\*

Prepared for the Government of Nigeria  
by the United Nations Industrial Development Organization,  
acting as executing agency for the United Nations Development Programme

Based on the work of J. Howard Petrie,  
Industrial information training expert

Backstopping officer: Juraj Pavlik,  
Institutional Infrastructure Branch

529

United Nations Industrial Development Organization  
Vienna

---

\* This document has been reproduced without formal editing.

TABLE OF CONTENTS

	page
Explanatory notes	3
Abstract	4
Introduction	5
Recommendations	5
I. Description of tasks related to training	9
II. Activities of the training centre/unit	10
A. Background	10
B. Progress made since the last mission	11
C. An integrated training centre for FIIRO	12
III. Training programmes executed during the 1988 mission	13
A. UNIDO organized courses	13
B. Other training during current mission	16
C. Future training of FIIRO INDICES staff	18
IV. Audio-visual and other equipment and facilities to support training	19
V. Preparation of teaching packages for training	20
VI. Training fellowships	21
 ANNEXES	
1. Job description of the Industrial Information Training Expert (IITE)	22
2. Programme for the course for chief executives	25
3. Programme for the course for middle managers	28
4. Programme for the course for heads of information services and libraries	32
5. Planned activities of the FIIRO INDICES Training Unit	37
 REFERENCES	 39

### EXPLANATORY NOTES

The currency in Nigeria is the Naira (\$US1 = 4 Naira approx.)

#### Acronyms and other shortened forms of names used in the report

AGRICOLA - A bibliographic data base from the United States National Agricultural Library. Used at FIIRO on CD-ROM.

CD-ROM - Compact Disc Read-Only Memory is a high capacity, low cost data storage medium.

CDS/ISIS - The name of a software package for the storage, management and retrieval of textual information.

dBASE III - A database management systems for microcomputers.

FAO - Food and Agriculture Organization.

FIIRO - Federal Institute of Industrial Research, Oshodi.

INDICES - The Industrial Information Centre and Extension Service of FIIRO.

IIA - Industrial Information Adviser.

IITE - Industrial Information Training Expert.

IAEA - International Atomic Energy Agency.

INIS - International Nuclear Information System.

NEPA - Nigeria Electric Power Agency.

NITEL - Nigeria Telecommunications.

PageMaker - A desktop publishing package.

Ventura - A desktop publishing system.

Wordstar 2000 - A word processing system.

ABSTRACT

Report on the project training activities accomplished during the second mission of the Industrial Information Training Expert (IITE) during the period 1988-04-24 to 1988-07-08. The role of the IITE was to develop facilities required for conducting information training courses at the Industrial Information Centre and Extension Services (INDICES). The report covers the establishment of a training unit, training courses in information resource management for chief executives and middle managers, and in managing a corporate information service. Also covered are the training of INDICES staff, training equipment and materials acquisition and use, use of CD-ROMs for training in on-line data base searching, and preparation of teaching packages. Future training needs to be continuous, related to management goals and the needs of INDICES customers. Courses will need to be repeated, and further CD-ROM data bases acquired. Each member of INDICES will need a programme of continuous training related to his or her job description.

## INTRODUCTION

This report covers the training activities carried out during the second mission of the Industrial Information Training Expert (IITE). The period of the mission was from 24 April to 8 July, 1988. A preliminary mission of one and a half months duration took place from 15 June to 23 July, 1987. An interim technical report<sup>1</sup> was prepared at the end of this first mission. Both the interim and this final report cover only the training aspects of the project. For a complete picture of the project, the reports of the Industrial Information Adviser and the Computer Expert should be consulted.

The objectives of the training activities are given in Annex 1. The extent to which they have been met is discussed in the substantive chapters of the report. No revision to the workplan prepared by the IIA for either the first or second missions, as far as training was concerned, was necessary.

## RECOMMENDATIONS

A set of recommendations was provided at the end of the first (1987) mission of the IITE. There were:

- the setting up of a training centre for FIIRO INDICES along the lines of that described in Phase I of the project was not recommended. However, the feasibility of developing an integrated training centre for the whole of the FIIRO training programmes needed to be studied;
- the setting up of a more modest industrial information training unit was recommended, and acted upon. A head of the training unit was nominated and an initial list of activities was recommended. It was further recommended that this list of tasks should be acted upon as soon as possible;

- accommodation for training was found to be far from ideal, and the construction of a lecture theatre for 40 persons was recommended.

The recommendations following the current and final mission of the IITE are:

1. the FIIRO INDICES staff has received a large amount of training under the current project. However, training is a continuous process, and hence each member of FIIRO INDICES needs to have an individual continuous training programme which is related to his or her function as defined in a job description and related to the information needs of INDICES users;
2. there is already an appreciation at management level of the value of training. Its importance needs to be made clear unequivocally to the staff, and the Head of Training needs the support of management to implement an effective planned training programme related to management goals;
3. the management skills of the professional staff need to be improved, especially in relation to the delegation of responsibility, project management and the drawing-up and execution of plans;
4. because of the relative isolation of Nigeria from the mainstream of developments, much of the future training will inevitably be self-taught or passed on by colleagues. It is essential that staff realise the value to everyone of an open approach to freely passing on expertise;
5. it is likely that individual staff will need to specialise in particular subject sectors and/or types of information sources, e.g. standards. Training will need to be linked to this need;

6. the teaching of on-line data base searching can only be effectively taught using CD-ROMs at present, hence acquisition of relevant CD-ROM data bases should be given top priority;

7. the recently held courses should be repeated after a reasonable time period, but the time gap between individual courses should be longer to allow preparation to be optimized. Audio-visual equipment and materials should be fully used in the courses;

8. every member of the FIIRO staff needs to be familiar and at ease with using computers for their job functions. Some training has already been given but this will need to be supplemented on a continuous basis by technical training. Knowledge of technical aspects of computers should not be confined to the Computer Centre;

9. locally-made tape-slide presentations of FIIRO INDICES services should be made for showing to customers, new members of staff, on courses etc. The possibility of joint production of videos needs to be investigated with Nigerian television and video companies;

10. training sessions need to be given by the Head of the Computer Centre to the staff on the management of data bases with CDS/ISIS, on the creation of appropriate inverted lists for searching and the search process itself;

11. the supply of industrial information specialists needs to be improved through increasing the teaching of industrial information subjects in universities. FIIRO should stimulate contacts and staff exchanges and secondments in both directions;

12. serious consideration should be given to the construction of more suitable accommodation for training and the founding of a larger, integrated training unit for the whole of FIIRO;

13. there is an urgent need in the country for courses on various aspects of computers. FIIRO could play a vital role by setting up a training centre equipped with microcomputers;

14. colour slides produced directly from the computer need to be incorporated into training activities when the Polaroid Palette slide-making equipment becomes operational;

15. efforts need to be made to monitor the professional journals to locate and acquire newly produced audio-visual materials relevant to INDICES on a regular basis.

## I. DESCRIPTION OF TASKS RELATED TO TRAINING

The overall goals of the project and the detailed workplan are described in the report following the first mission of the IIA<sup>2</sup>. In this workplan is outlined a series of tasks related to training. The training expert considered at the outset that the training tasks fitted in logically with the rest of the workplan and, in themselves, constituted a sound approach to the problem of training for this project.

The strategy adopted by the training expert during the first mission was to:

- carry out as many of the tasks as possible, bearing in mind the short time in the field (five weeks) and the priorities set in the overall Workplan.
- prepare as much as possible for the second and final mission, in order to ensure the success of the training activities to be held during that mission, and particularly the planned courses.

The tasks for the training expert, as outlined in the job description (see Annex 1) were to:

- study the needs for and the feasibility of the establishment of a Training Centre (Unit) within the Industrial Information Centre;
- prepare plans and assist in taking organizational measures for the establishment and operation of the regular activities of the Training Centre (Unit);
- assist in the organization and conducting of two, or more, training courses for the appropriate people outside FIRO on the provision and use of industrial information, with special regard to computerized services;

- advise FIIRO on the choice of audio-visual equipment, teaching programmes and materials as well as documents. Assist in purchasing this equipment and auxiliary material from the funds allocated to the project;
- prepare teaching packages consisting of subject-orientated modules to be used for the conducting of regular training courses;
- train the Centre's staff on the preparation of teaching packages and the management of the Training Centre;
- assist in the establishment and development of training programmes and facilities for the industrial information extension service;
- advise FIIRO on the place and duration of individual fellowships and assist in selecting fellows as well as identifying appropriate training programmes.

The progress made with specific tasks is described in the substantive chapters of the report below.

## II. ACTIVITIES OF THE TRAINING CENTRE/UNIT

### A. Background

A recommendation was made<sup>3</sup> by a training consultant in a previous phase of the project (DP/NIR/75/069) that a *Centre for Manpower Development in Industrial Information* should be established by the Federal Government at FIIRO within the industrial information service. This Centre was recommended to have six permanent staff, in addition to other supporting personnel. The recommendation was not taken up.

The IITE concluded during the previous mission that, whilst the need for a centre along the lines proposed during Phase I was evident, it is not the most cost-effective way to proceed at that time. The already inadequate staff resources needed to concentrate its efforts on establishing viable industrial information services, rather than having several staff members devoted full-time to the organization of training. However, it was concluded that the large scale approach, whilst inappropriate for FIIRO INDICES at the present time, might well be applied to the whole of the FIIRO training programme on an integrated basis, as part of a follow-up project at a later date. This is further discussed in chapter IIC below.

During the previous mission of the IITE, it was decided that one member of FIIRO INDICES be immediately assigned part-time to the position of Head of the Training Unit. The Head of Training was recommended to carry out a number of tasks, for instance the setting up of an ad-hoc training seminar series.

The IITE suggested the possibility of improving the supply of industrial information specialists through increasing the teaching of industrial information subjects in existing university courses and, possibly, starting new courses including the idea of FIIRO staff being associated with teaching in the appropriate university courses and the secondment of university teaching staff to FIIRO.

#### B. Progress made since the first mission of the IITE

The recommended job description and activities of the Training Unit, as formulated during the previous mission, are given in Annex 5. In assessing the progress made, it should be remembered that many of the INDICES staff attended training programmes abroad during the last half of 1987 and into 1988. Thus a full in-house training programme was not feasible in these circumstances. Even so, progress has not been as great as was hoped for.

The IITE found that the recommended regular training sessions had been started, but only a small number of sessions had been held. A new programme has been worked out and the first of the sessions was held during the current mission.

C. An Integrated Training Centre for FIIRO

The conclusions of previous UNIDO experts, particularly relating to the *Centre for Manpower Development* proposed during Phase I, were analyzed during the previous mission of the IITE. It was concluded that such a concept could be applied to the whole of the FIIRO training activities slanted towards industrial development. Courses in a variety of subjects, such as management, manufacturing management, design and production, maintenance, electronics and computer systems, as well as industrial information management, could be organized.

It was hoped that, during the present mission, a study of this topic could be made. However, time did not permit this to be done. In any case, it is recommended that the feasibility of establishing an integrated training centre for industry at FIIRO be investigated. Such a centre would handle the administrative aspects of the organization of training, and have expertise in training techniques and technology. The training itself would be carried out by the various divisions of FIIRO, together with outside speakers. In the case of industrial information, the training co-ordinator of FIIRO INDICES would work jointly with the Centre staff to organize the courses. This work would be an important part of any future institution-building project.

### III. TRAINING PROGRAMMES EXECUTED DURING THE 1988 MISSION

#### A. UNIDO-organized courses

The expansion of activities of FIIRO INDICES, with the consequent need to have adequate numbers of trained staff, and the need to stress the importance of industrial information management in Nigerian industry were two strong motivations for holding formal training courses.

The target organizations for these courses included:

- industrial companies,
- services, e.g. banks and utilities,
- research organizations,
- technological universities,
- government departments,

and the courses were aimed at three categories of personnel, i.e.:

- chief executives of industrial and other organizations of all sizes;
- departmental managers, most likely from larger companies;
- individuals operating, or setting up, an information department/library.

The courses were held directly after the official launching of FIIRO INDICES and opening of the Computer Centre by the Federal Minister of Science and Technology. Each course was opened by the Director of FIIRO, Dr. O.A. Koleoso. They were designed by the IITE and organized jointly by the IITE, and FIIRO staff. The Head of Training co-ordinated the administrative aspects. Presentations were made by the three UNIDO experts, the IIA (Mr. E. I. Vajda), the Computer Expert (Mr. A. S. Yeiser) and the IITE (MR. J. H. Petrie), and the Head of FIIRO INDICES (Mr.

R. O. Sodipe). FIIRO INDICES staff assisted in the practical computer sessions and by showing the attendees around the library and information centre. A charge of 150, 250 and 300 Naira per attendee was made for the first, second and third courses respectively.

The first course, of one and a half days, was aimed at managing directors of companies and other organizations. The main purposes of the course were to sensitize top managers to the value of information in their organizations, to the possibilities of obtaining information from external sources, and to the ways they might manage such developments. Details of the content of the course are given in Annex 2. Twenty four managers from a wide range of organizations in the private and public sectors attended, in addition to three senior members of the FIIRO staff.

A second course for departmental managers, charged with functions, such as research and development, technical and management services, or production within industrial companies and other organizations attracted thirty one attendees (nineteen from outside organizations, twelve from FIIRO). Details of this three-day course are provided in Annex 3.

The third course, designed for those individuals charged with the setting-up of information services or for those already responsible for those activities, lasted for four days. Details are given in Annex 4. This course also attracted thirty one attendees, of which ten were from the professional staff of FIIRO INDICES. The course therefore formed part of the formal training of the INDICES staff, as well as being open to outsiders.

The courses were generally well-received. The sizes of the classes were probably too large to allow optimal use of 'hands-on' training on the computer systems to be achieved. The number of available computers was not large enough to assign a single computer to each attendee. The students were generally of appreciative of the exposure to the computers.

It was extremely difficult to plan the level of attendance at such courses. Many attendees just turned up on the first day without registering in advance. On the other hand, advance bookings had been at a very low level. The possibility of cancelling the second course was seriously considered a few days before the starting date because of a low take-up of places. In the event, nineteen outsiders attended this course. This type of last-minute behaviour should be noted for planning of future UNIDO training courses of this type.

Relevant video and tape-slide productions were acquired before the courses began. Some of them were used in conjunction with the courses. Locally produced colour slides of equipment were also prepared. In addition, the video recording equipment acquired for the project was used to record the entire proceedings. The recorded lectures will be usable for future courses.

Data bases were acquired on CD-ROM and used to demonstrate on-line data base searching techniques. Attendees at the 'Operation of Corporate Information Services' course were given more than three hours of hands-on training in these techniques, together with exposure to word processing and spreadsheets.

It was noticed that the experience of the attendees of using computers was mostly nonexistent, although there were one or two notable exceptions. Basic keyboard skills were also rare. Hence, there is an urgent need for basic computer-appreciation courses to be held. FIIRO can play a valuable part with its new computing installation in putting on such courses in the future. However, the country needs to invest heavily in microcomputers at all levels of society. Training in this important technology cannot even be contemplated on a large-scale unless equipment is available and trainers are trained.

It was recommended during the previous mission of the IITE that a small lecture room be constructed for training. Present

accommodation is very unsuitable. This recommendation needs to be taken up. If basic training in computing is also to be carried out on a large scale, the room needs to be permanently equipped with microcomputers.

B. Other training carried out during the current mission

Plans for the level of training to be carried out during the current mission had to be reduced because of difficulties with the installation of equipment needed for the courses described above. Serious problems with computer equipment hampered the preparations both for demonstrations and hands-on sessions. The problems were overcome, though not entirely solved. These equipment problems constituted the most significant factor in the length of time required to implement software packages, CD-ROM data bases etc. for training.

The lack of success in obtaining the requisite international communication lines made it more essential to implement CD-ROM data bases, in order to teach on-line data base searching techniques and to demonstrate these techniques to course attendees and the INDICES staff. A good deal of effort was expended to locate suitable data bases, implement them on the new computers and prepare the requisite teaching materials.

In the event, several CD-ROMs were obtained: the INIS test CD-ROM from IAEA, three test discs courtesy of the British Council and the British Library, and the National Agricultural Library 'AGRICOLA' data base. This last data base proved to be the most valuable of all as it contains bibliographical details and abstracts of documents in the food processing field which are extremely relevant to one of the main research activities at FIIRO and the food industry in general in Nigeria.

Both the AGRICOLA and the INIS CD-ROMs were used as the basis for demonstrations and 'hands-on' experience during the courses and, subsequently, for individual (one-to-one) training

sessions for the FIIRO INDICES staff. These sessions were enthusiastically received. There is no doubt that the CD-ROM, together with the appropriate data bases, is an effective tool for teaching on-line data base searching, particularly in developing countries where the searching of data bases through international telecommunications links can be unreliable and expensive.

The audio-visual materials obtained for the project were used as a basis for the regular seminar series which was recommenced during the current mission. The IITE, together with the Head of Training, worked out a programme for a continuing staff seminar series for the rest of 1988, based on the available materials and expertise. The IITE also provided an informal tutorial for the Head of Training and a member of the extension service in project planning and management techniques.

Various software packages were ordered for the project but were delivered only at the very end of the current mission. Hence, no time was available to begin training in their use. For instance, one software management is for project and resource management and could form the core of a computer-orientated project management course. Informal training sessions were given on word processing to some of the FIIRO INDICES staff. Several of the recently delivered computer software packages have self-help tutorials. It is recommended that FIIRO staff spend time getting acquainted with at least the Wordstar 2000 system through the tutorials, and with PageMaker, Ventura and dBASE III.

A small amount of training in the use of CDS/ISIS was given, but there was little time available for this activity. The FIIRO INDICES Head of Computing is familiar with the system and should run training sessions for at least the professional staff involved in data base management and searching.

C. Future training of FIIRO INDICES staff

It was pointed out in the interim report that the training programme of INDICES staff must be closely related to the planned information services and to the need to use the existing staff to train each other. In addition, the question of training must be taken seriously. There is still a long learning curve before INDICES can be regarded as a modern and efficient industrial information service. In addition, an atmosphere conducive to passing on information, rather than withholding it, needs to be further encouraged among the staff. It is hoped that the very considerable expertise transferred to FIIRO INDICES staff during the current project will be passed on as much as possible to colleagues.

The goals of INDICES are ambitious. In the developed countries, responsibility for information services for different industrial sectors is usually split and hence expertise can be very specialized. This is not the case for INDICES which will need to cover most of the industrial sectors which are of interest to Nigeria. Thus the staff will need to have expertise in all relevant fields. It is recommended that individuals specialize in a specific range of sectors. It will also be necessary to develop expertise in types of information sources, e.g. on-line, patents, standards, trade literature. Specific training will be needed to be provided to build on that already accomplished.

Some training in the use of, and appreciation of computers has been given. This will need to be carried on continuously so that INDICES staff become familiar with data base management, on-line searching, word processing etc.

The IITE has noticed a lack of management skills and techniques. Of particular concern was the need to acquire skills in detailed project management and planning. More management skills need to be acquired by INDICES staff in general.

#### IV. AUDIO-VISUAL AND OTHER EQUIPMENT AND FACILITIES TO SUPPORT TRAINING

A range of new, up-to-date equipment was specified during the previous mission. These have now been delivered with the exception of a few items. In addition to being able to show tape-slide presentations and video tapes from a range of systems, it is now possible to produce training support material locally. The equipment featured strongly in the courses and it was possible during the courses to show their usage to the FIIRO staff in a practical way. The video equipment was used to record the entire nine days of courses, thus providing a valuable resource for further courses.

Not all equipment delivered is working correctly. Items not working include the Polaroid Palette (IBM PC XT/AT computer-compatible slide-making equipment). Thus, it has not been possible to produce the planned colour slides for the courses. Overhead transparencies had to be used instead. Contact has been established with Polaroid Corporation but the problem remains to be solved. Some colour slides were made with the camera supplied by the project.

The portable video recorder-player specified for the extension service has not been delivered. It has not, so far, been required but will be needed for field trips by the extension service.

Printed materials ordered for the library have arrived, although not all those ordered were supplied (out of print). Some will need to be re-ordered. It was hoped to do this during the current mission, but, in the event, there was not sufficient time available.

Audio-visual materials (tape-slides, videos etc.) were specified by the IITE between the two missions. They were used in conjunction with the courses and during other training sessions.

Instruction has been given to two of the staff on how to produce local tape-slide presentations. It is recommended that a tape-slide be made of the INDICES services which could be valuable for publicizing the services to existing and potential customers. Colour slides of the new computer equipment were made during the current mission using the new camera equipment.

Mention has already been made that the accommodation for training available at FIIRO is not ideal. It comprises a large meeting room with fixed furniture and simultaneous interpretation equipment, which is ideal for committee work, but not optimal for the training of groups of fifteen to thirty persons. There is also a small committee room also with furniture suited to its named function, rather than to training. More suitable accommodation, equipped with flexible furniture to allow a range of training activities to take place is needed.

The Computer Centre is exceedingly small but has been used to run training sessions for groups of up to 25 persons. It is particularly crowded with this number. More computers need to be moved to the Library so that the INDICES can obtain more experience with them. More of the staff need to be trained in some of the technical aspects of using and managing small computers.

#### V. PREPARATION OF TEACHING PACKAGES FOR TRAINING

The transparencies which were used for the training sessions carried out during the previous period in the field, were again used for both the courses and for training sessions. They were incorporated into teaching packages based on the formal courses. The packages comprise notes, worked examples, transparencies, videos (both recordings of the presentations and acquired), and tape-slides.

## VI. TRAINING FELLOWSHIPS

The major decisions on training fellowships were made before the start of the first mission of the IITE. There was no further activity by the IITE in this area.

UNITED NATIONS



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO

Federal Republic of Nigeria

JOB DESCRIPTION

DP/NIR/83/021/11-03/J1200

**Post title** Training Expert

**Duration** 4 months, in two split missions: 1.5 and 2.5 months respectively

**Date required** March 1987 (first part of the mission)

**Duty station** Lagos, with travel within the country

**Purpose of project** To strengthen the Industrial Information Centre within the Federal Institute of Industrial Research, Oshodi (FIRO). The functions of the Centre will be essentially to supply a wide range of information on industrial production technologies and to establish links with industrial information networks at the national, regional and international levels. The training expert's services are required to develop facilities that are required for conducting industrial information training courses at the Industrial Information Centre.

**Duties** The expert will be attached to the Industrial Information Centre within the Library, Information and Documentation Division of FIRO. His work will be coordinated by the Industrial Information Adviser responsible for the overall management of the project. He will be expected to:

1. Study the needs for and the feasibility of the establishment of a Training Centre (Unit) within the Industrial Information Centre. This Training Centre (Unit) would be responsible for providing basic and practical knowledge on industrial information systems and services to the appropriate personnel of all public and private sector organizations throughout the country;
2. Prepare plans and assist in taking organizational measures for the establishment and operation of the regular activities of the Training Centre (Unit);

---

Applications and communications regarding this Job Description should be sent to:  
Project Personnel Recruitment Section, Industrial Operations Division  
UNIDO, VIENNA INTERNATIONAL CENTRE, P.O. Box 300, Vienna, Austria

3. Assist in organizing and conducting two or more training courses for appropriate people outside FIIRO on the provision and use of industrial information with special regard to computerized services;
4. Advise FIIRO on the choice of audio-visual equipment, teaching programmes and materials as well as documents (books, periodicals to be used as the students' library). Assist in purchasing this equipment and auxiliary material from the funds allocated to the project;
5. Prepare teaching packages consisting of subject-oriented modules to be used for conducting regular training courses;
6. Train the Centre's staff on the preparation of teaching packages and the management of the Training Centre (Unit, courses);
7. Assist in the establishment and development of training programmes and facilities for the industrial information extension services;
8. Advise FIIRO on place and duration of individual fellowships and assist in selecting fellows as well as identifying appropriate training programmes.

The expert will also be expected to prepare a final report, setting out the findings of his mission and his recommendations to the Government on further action which might be taken.

Qualifications	University degree or equivalent in engineering and/or information/documentation science with extensive experience in planning, organizing training activities/courses in the field of industrial information
Language	English
Background Information	<p>The Federal Government of Nigeria recognises the importance of techno/economic information as a vital prerequisite for achieving the planned rapid economic growth. In pursuance of this (the government) signed an agreement with UNIDO for establishing an Industrial Information Centre in Nigeria, and has chosen FIIRO - a parastatal under the Federal Ministry of Science and Technology - as its location, in consideration of the appreciable contributions which the Institute has made in the field of scientific and technological information supply.</p> <p>The first phase in the execution of the agreement ran from 1979 - 1982, during which a number of activities were initiated. Amongst them are compilation of a Directory of on-going research projects in Nigeria; publication of: Technical Information Bulletins (Quarterly); Industrial Information Abstracts (Quarterly). Indexing and abstracting of current journals was also started and continued.</p> <p>The Federal Institute of Industrial Research and its Industrial Information Centre will have a major role to play in providing and guiding various institutions of private and public sectors in the use of industrial information.</p>

The present second phase project is designed to develop a full-fledged industrial information centre capable of supplying streamlined information and documentation services such as bibliographic services, current awareness services and selective dissemination of information and inquiry services to industries.

The effective use of industrial information services depends to a great extent on the availability of trained manpower to organize the provision and use of industrial information. End-users of industrial information should also be educated on its importance and how to make use of it. For these reasons, training facilities and industrial information extension services should be established at the Centre. The training consultant is needed to ensure that these activities are carried out.

ANNEX 2: PROGRAMME FOR THE COURSE FOR CHIEF EXECUTIVES

Information Resource Management

A one and a half day course for managing directors and other senior executives in industrial companies, commercial organisations (e.g. banks), public corporations (e.g. NEPA, NITEL), research institutes and government bodies.

FINAL PROGRAMME

Monday 6 - Tuesday 7 June

Monday 6 June - DAY 1

13.00-14.00 Registration

14.00-14.10 Opening statement by Dr. O.A. Koleoso, Director of  
FIIRO

14.10-14.15 Opening statement by Mr. R.O. Sodipe, Head of INDICES

14.15-14.45 Introduction to the UNIDO Industrial Information Project and the course. Mr. E. Vajda, UNIDO Industrial Information Adviser.

14.45-15.30 Introduction to the world of industrial information.  
Mr. J.H. Petrie, UNIDO Industrial Information Training Adviser.

This session will give an introduction to the information industry, pointing out the value of information to the organization. It will also describe the individual types of organisations, such as publishers, database producers and online information services which make up the industry. The

Euronet-DIANE video will be shown. It will explain the use of computers for accessing and retrieving information.

15.30-15.45 Break

15.45-17.00 Tour of computer systems and library

Mr. E. Vajda, Mr. A. Yeiser, Mr. J.H. Petrie

Mr. R.O. Sodipe and staff.

17.00 End of Day 1

Tuesday 7 June - DAY 2

09.00-10.00 Information Management in the Nigerian Context

Mr. E. Vajda

This session will examine the present state of development of information management and the provision of industrial information in Nigeria. It will cover the policies and programmes needed to develop them.

10.00-11.00 Information resource management within the company

Mr. J H Petrie

This session will describe the increasing trend in industrial companies and other organisations towards regarding information as a vital resource which needs to be managed and turned into assets. It will also show how companies in the information age are responding to opportunities for new markets and cover aspects of the growing information industry.

11.00-11.15 Break

11.15-12.15 Computer systems for information resource management

Mr. A Yeiser (UNIDO Computer Systems Expert)

The hardware, software and range of computer applications for management of the information of the company will be described. Emphasis will be placed on microcomputer systems.

12.15-13.30 Lunch

13.30-14.15 FIIRO INDICES - Information services for industry  
Mr. R.O. Sodipe (Head: FIIRO INDICES).

14.15-15.00 Open Forum - panel of four speakers

15.00-15.05 Closing statement by Dr. Koleoso, Director of FIIRO.

15.05-15.30 Refreshments

15.30 Course terminates

ANNEX 3: PROGRAMME FOR THE COURSE FOR MIDDLE MANAGERS

Information Resource Management : Industrial Development  
through the Harnessing of Scientific,  
Technological and Business Information

A three day course for personnel in research and development, production, technical or management services, information management in industrial companies, commercial organisations, such as banks, and public corporations.

Final Programme

Wednesday 8 - Friday 10 June

Wednesday 8 June - DAY 1

09.00-10.00 Registration

10.00-10.10 Opening statement by Dr. O.A. Koleoso, Director of  
FIIRO

10.10-10.20 Opening statement by Mr. R.O. Sodipe, Head of INDICES

10.20-11.20 Introduction to the UNIDO Industrial Information Pro-  
ject and the course. Mr. E. Vajda, UNIDO Industrial  
Information Adviser.

11.20-12.30 Introduction to the information society concept.  
Mr. J.H. Petrie, UNIDO Industrial Information  
Training Adviser.

This first session will concentrate on the so-called infor-  
mation society which is developing in the advanced nations  
and the role played by information, computers, communica-  
tions and technology in general. A video produced by the  
'New Scientist' will be shown.

12.30-14.00 Lunch

14.00-15.00 Computer systems for information resource management  
Mr. A. Yeiser (UNIDO Computer Systems Expert)

In this, together with two further sessions, Mr. Yeiser will describe the latest trends in computer hardware, software and applications for handling industrial and commercial information. He will concentrate on the low-cost microcomputer options now available.

15.00-16.00 An introduction to the information industry.  
Mr. J.H. Petrie

This session will give an introduction to some parts of the information industry by way of example. It will describe the individual types of organisations, such as publishers, database producers and online information services, and the roles they play. A video will show an example of the solution of a problem by information provision, in the food processing industry.

16.00 End of Day 1.

Thursday 9 June - DAY 2

09.00-10.00 Information resources : published literature and  
local data bases. Mr. E. Vajda

This session will describe the role of published literature, e.g. books, periodicals, reports, standards, patents and secondary literature, as well as factual collections, in the national and international contexts and will show their relevance to industry and commerce.

10.00-11.00 Retrieval of information for business & industry  
Mr. J. H. Petrie

This session will outline the range of databases of potential interest to Nigerian business and industry and the methods used to access them on online 'host' information services.

11.00-11.20 Break

11.20-12.20 Computer systems for information management (2).  
Mr. A. Yeiser

12.20-13.45 Lunch

13.45-16.00 Tour of computer and library facilities.  
Mr. E. Vajda, Mr. A. Yeiser, Mr. J.H. Petrie,  
Mr. R.O. Sodipe and FIIRO INDICES staff.

16.00 End of Day 2

Friday 10 June - DAY 3

09.00-10.00 Information resource management within the company  
Mr. J H Petrie

This session will describe the increasing trend in industrial companies and other organisations towards regarding information as a vital asset. Techniques for the management and the exploitation of information will be described. It will also show how companies in the information age are responding to opportunities to develop new markets with information products.

A video showing the importance of standards as a source of information and their role in quality etc. will be shown.

10.00-11.00 Information for Nigerian business and industry : the

FIIRO INDICES services for industry. Mr. R.O. Sodipe,  
Head : FIIRO INDICES

11.00-11.20 Break

11.20-12.20 Computer systems for information manage-  
ment (3). Mr. A. Yeiser.

12.20-13.45 Lunch

13.45-14.45 Information Management in the Nigerian Context  
Mr. E Vajda

This session will examine the present state of development of information management and the provision of industrial information in Nigeria. It will cover the policies and programmes needed to develop them.

14.45-15.30 Open Forum with a panel of the four speakers.

15.30 Course terminates

ANNEX 4: PROGRAM FOR THE COURSE FOR HEADS OF INFORMATION SERVICES  
AND LIBRARIES

Operation of Corporate Information Services :  
Acquisition, storage and retrieval of information  
in a modern library setting

A four-day course for information and library personnel in industrial companies, commercial organisations (e.g. banks), public corporations (e.g. utilities), research organisations, government departments, etc.

Tuesday 14 - Friday 17 June 1938

Final Programme

Tuesday 14 June - DAY 1

09.00-10.00 Registration

10.00-10.10 Opening statement by Dr. O.A. Koleoso, Director of  
FIIRO

10.10-10.20 Opening statement by Mr. R.O. Sodipe, Head of INDICES

10.20-11.20 Introduction to the UNIDO Industrial Information Pro-  
ject and the course. Mr. E Vajda, UNIDO Industrial  
Information Adviser.

11.20-12.30 Introduction to the world of industrial information.  
Mr. J.H. Petrie, UNIDO Industrial Information  
Training Adviser.

This session will give an introduction to the information industry. In particular it will describe the individual types of organisations, such as publishers, database producers and online information services, and the roles

they play. The food processing information video, describing the use of on-line databases to solve problems in industry, will be shown as a case study.

12.30-14.00 Lunch

14.00-15.00 Information sources : building the collection

Mr. E. Vajda

This session, together with the next, concentrates on published information, its characteristics, acquisition, recording and storage. Books, periodicals, reports, standards, patents, trade literature and other specific material will be covered. Methods of obtaining documents will also be discussed.

15.00-16.00 Retrieval of on-line information from CD-ROM data bases

Mr. J.H. Petrie

This session will demonstrate how on-line information techniques can be employed locally using microcomputers and CD-ROM data bases. The AGRICOLA and INIS data bases will be shown. In addition a class demonstration of the CDS/ISIS software together with some FIIRO INDICES data bases will be shown.

16.00 End of Day 1

Wednesday 15 June - Day 2

9.15-10.15 World-wide/local current awareness and information retrieval services. Mr. E. Vajda.

This presentation, together with one other, will explain the use of secondary literature sources, such as abstracting and indexing publications and bibliographies, together with guides to the literature. The characteristics of these serv-

ices will be described, as well as their role in industrial information provision. Methods of dissemination of information on a current-awareness basis and specific information services (SDI, retrieval) will also be described.

10.15-11.15 Computer systems for information management

Mr. A. Yeiser

This is the first of two presentations covering the basics of computer systems. It will concentrate on microcomputer systems. As well as the use of computers for managing bibliographic data bases, uses for word processing, spreadsheets, data base management etc. will be covered.

11.15-11.35 Break

11.35-12.35 World-wide/local current awareness and information retrieval services (2). Mr. E. Vajda

12.35-14.00 Lunch

14.00-15.00 On-line information retrieval services, data bases and systems. Mr. J.H. Petrie

In this presentation, the range of data bases available from the large computer centres ('on-line hosts'), and other developments in electronic publishing, such as the CD-ROM, will be described .

15.00-16.00 Computer concepts

Mr. J. H. Petrie

An explanation of the way a computer works from a non-computer experts point of view.

16.00 End of Day 2

Thursday 16 June - Day 3

09.15-10.15 Practical session with the microcomputer with sample with experience of searching online data bases on CD-ROM.

10.15-11.15 Creating in-house databases  
Mr. E. Vajda

Abstracting and indexing services build data bases in the computer, from which they produce their printed products or store in the computer for immediate retrieval. It is also possible to do this in-house. This presentation, with one other, will explain how this is undertaken.

11.15-11.35 Break

11.35-12.35 Computer systems for information management (3)  
Mr. A. Yeiser

12.35-14.00 Lunch

14.00-16.00 Further practical session in the Computer Centre

16.00 End of Day 3

Friday 17 June - Day 4

09.15-10.15 Creating in-house databases (contd.)  
Mr. E. Vajda

10.15-11.15 FIIRO INDICES - Information services for industry.  
Mr. R.O. Sodipe.

11.15-11.35 Break

11.35-12.35 Library housekeeping - computer software for library systems (brief pointer to sources of information). Introduction to Information Resource Management. Mr. J.H. Petrie.

12.35-14.00 Lunch

14.00-15.00 Open forum

This will be an opportunity to discuss any important points which arise from the course, with all four speakers present.

15.00 End of course

ANNEX 5: PLANNED ACTIVITIES FOR THE FIIRO INDICES TRAINING UNIT

RECOMMENDED JOB DESCRIPTION AND ACTIVITIES FOR  
HEAD OF THE INDUSTRIAL INFORMATION TRAINING UNIT

The Head of the Training Unit (initially a part-time position, but with at least 50% of available time) will be responsible to the Head of FIIRO INDICES for the organization of the training for the INDICES staff and for appropriate personnel in private and public organizations. Specific responsibilities will be to:

- organize a regular (monthly) training session/seminar series for INDICES staff, involving internal FIIRO staff and outside speakers;
- draw-up training programmes for the individual training needs of INDICES staff, propose solutions to satisfy those needs, and ensure training decisions relating to those needs are implemented;
- organize repeats of the courses given during the last mission of the IITE using local speakers and the course material provided, develop publicity material, etc.;
- develop links with industrial organizations, universities, research institutes, and government bodies in order to arrange training exchanges in industrial information handling. Help support the development of industrial information courses in universities and elsewhere by organizing for FIIRO INDICES staff to give courses at these institutions and arrange for student placements at FIIRO;
- further develop the collection of training materials, such as tape-slides, videos and be responsible for its care.

- ensure that the equipment used for training is kept in good order;

- help develop activities related to industrial information provision and management within existing or new professional bodies in the country;

- undertake other training activities as required by the Head of FIIRO INDICES;

- provide a three-monthly report detailing activities carried out in the previous period and including a plan outlining future training activities for the next period.

The Head of Training needs to be provided with a realistic budget to effectively carry out the above activities. Policies relating to training need to be set-up and implemented by management.

REFERENCES

1. Federal Institute of Industrial Research, Industrial Information Centre, Phase II. DP/NIR/83/021. Technical Report: Training activities for the development of information services for industry (interim report), based on the work of J. Howard Petrie, Industrial Information Training Expert, Vienna, UNIDO, 21 July, 1987.
2. Federal Institute of Industrial Research, Industrial Information Centre, Phase II. DP/NIR/83/021. Technical Report: Planning, designing and starting the development of information sources, technologies and services, based on the work of Erik I. Vajda, Industrial Information Adviser, Vienna, UNIDO, 9 December 1986.
3. Lazar, P., System and Centre for Manpower Development in Industrial Information in Nigeria, Description and Recommendations, Oshodi, Lagos, May 1981.