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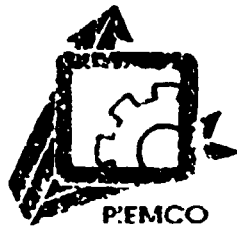
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PRODUCTIVITY IMPROVEMENT
INDUSTRIAL ENGINEERING
MANAGEMENT DEVELOPMENT

FINAL REPORT
TRAINING OF THE GOFI STAFF IN THE
PREPARATION OF PROJECT PRE-FEASIBILITY,
FEASIBILITY AND INDUSTRIAL PROFILES

United Nations Industrial Development Organization (UNIDO)

United Nations Programme for Development

Project No. (21/01)

Contract No. 91/108G, Amendment No. (1)

Oct., 1992

FINAL REPORT
GOFI SECOND TRAINING PROGRAM

FOR

**THE PREPARATION OF TECHNICAL AND
ECONOMIC FEASIBILITY STUDIES**

UNIDO PROJECT

**UNITED NATION PROGRAM FOR
DEVELOPMENT**

SUPPLEMENT TO PROJECT NO. 21/1

EXECUTIVE SUMMARY

This report includes a detailed description of the phases on which the second training program for the preparation of GOFI technical staff was implemented (supplement to Project No. 21/01). It presents the following:

- I. The program consisted of 12 training units to be implemented in 12 weeks starting June 21, 1992, and ending September 9, 1992. The following subjects were covered:
 1. The Scope of Work for Project Economic Feasibility Studies.
 2. The Technical Aspects in Project Feasibility Studies.
 3. Introduction to Computers and Computer Operation.
 4. Project Financial and Economic Feasibility Study.
 5. Lotus 123.
 6. Computer Applications in the Preparation of Feasibility Studies using PROPSPIN Method.
 7. dBase III+.
 8. Advanced dBase III+.
 9. Computer Applications in Statistical Data Processing.
 10. Computer Applications in the Preparation of Feasibility Studies using COMFAR Method.
 11. Completion of Computer Applications in the Preparation of Feasibility Studies using COMFAR Method.
 12. Preparation of Small and Medium Industrial Models.

II. The trainees were evaluated to test their knowledge before training. Upon training completion, the same test was used in order to examine how much have they benefited from training. In addition, their computer skills were tested. A copy of the results of these evaluations is herewith attached.

III. Based upon the trainees' response, interaction, and interest in both the first and second training courses; it is obvious that the continuation of this program is very beneficial by using the same past training units in addition to some development based upon the two previous evaluations and the expansion of the private sector participation.

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BASIC BACKGROUND

- A contract was made between the United Nation Industrial Development Organization (UNIDO) and the Engineering and Management Consulting Office (PIEMCO) for the implementation of Project No. 21/01. This contract is for the development of a comprehensive training program based on the assessment of needs for training a group of specialists in GOFI to prepare technical and economic feasibility studies for industrial projects; as well as the methods of preparing industrial models for small projects. This is done within the framework of a program for the development of GOFI based upon the following:
 1. The program is 12 training weeks covering the economic, technical, and financial sides of project feasibility study and preparation of industrial models.
 2. Development of 10 case studies to cover all the application sides of the Program.
 3. Training on computer applications in the field of feasibility studies using PROPSPIN and COMFAR methods.
 4. Evaluate trainees to make sure that they acquired both the theoretical and practical knowledge and skills.

- Parallel to this program, was another program in information systems; and display and recall of computerized information. Two programs of this kind were implemented in 24 weeks. As such, one week of feasibility studies was presented followed by another week of information systems.

- After the implementation of the agreed upon Project Contract No. 21/01 by PIEMCO Firm, and the delivery of the detailed final report on the training implementation and results. Also, as a result of the trainee evaluation and questionnaires made by the GOFI, it was thought in agreement with UNIDO to make a supplement for Project No. 21/01. This supplement includes a second training program for the preparation of project technical and economic feasibility studies using the computer applications in information systems, and display and analysis of the data needed for the preparation.

Accordingly, a contract was made between PIEMCO and UNIDO for the implementation of the second training program representing the supplement of Project No. 21/01.

I. Basic Agreement on the Second Training Program (Supplement of Project No. 21/01)

The following was agreed upon:

1. An intensive training program is to be prepared covering two sides:

First

Development of technical and economic feasibility studies for industrial projects.

Second

Information systems, display of information using computers, and computer applications in the field of feasibility studies using PROPSPIN and COMFAR methods. Consequently, the second program will include all what was presented in the first program in the fields of feasibility study and information systems. This means that what was presented in 24 weeks will be condensed to be presented in 12 weeks (i.e. half the period of time).

2. The training materials and case studies of the first program will be used after being modified, re-designed, and reorganized in the light of the results of the first program's evaluation.
3. The part of the information systems, information display, and computer applications in the field of feasibility studies should be re-designed so as to magnify its benefit.
4. The participation in the second program from outside GOFI should be expanded (i.e. private sector or official sector directly related to the subject of feasibility studies preparation).
5. Make use of the past consulting work experience offered in the first program regarding the work plan, trainee selection, trainee testing, trainee evaluation, then design development and implement the second program accordingly.

II. Trainee Evaluation

The procedures and criteria of the first program were used with some modifications made in light of the evaluation of the first program experience as follows:

a. Criteria

Trainee Age

Was fixed at 40 years maximum 50 vs years in the first program. This aims at increase in training specialists and executives.

Job Level

The job level should not be lower than the third level (sixth grade).

Job Experience

Past experience should not be less than five years. Three years of which (at least) should be in activities and tasks directly related to the training fields.

Education (Qualifications)

Trainee education should be one of the following:

- Engineering, all branches and fields of specialties.
- Commerce, all branches and different specialties.
- Economics, statistics.
- Science, all branches and different specialties.
- Agriculture, all branches and different specialties.

This in addition to other criteria related to work discipline, job performance (personnel efficiency reports), and relationship with supervisors. All of these were used by a project manager in the trainee selection.

Nomination Procedures

GOFI Project Management advertised the training program inside the organization. Then contacted some of the Private Sector companies, official agencies such as the information center

at the Minister's Cabinet and Industrial Development Bank. This was done in compliance with the previously mentioned selection criteria. A large number of GOFI eligible staff expressed their interest. In addition, some other authorities nominated some candidates to join the program. But due to the increasing number of trainees and the determination of the nominees, to join; GOFI formed two groups of trainees:

First Group: Consisting of 22 trainees. This Group was considered by PIEMCO the main original group which they are fully responsible for their training and certification.

Second Group: Consists of 18 trainees and PIEMCO agreement was as follows concerning these trainees:

- a. This group will attend the theoretical lectures.
- b. PIEMCO supervises their computer training.
- c. GOFI prints their training materials.

Accordingly, the second group attended the theoretical lectures together with the first group. They were assigned another period for their computer training supervised by other trainers who attended the first program and proved to be able to train others.

PIEMCO experts trained a group of trainers for the second group by providing them training in directing them, and giving them the training material, and explaining to them how to be used in training others. PIEMCO experts were responsible for general supervision by means of attending and participating in training the second group on a short term basis.

III. Design and Implementation of the Second Program

Based upon the previously mentioned basics, and the articles of the second program agreement, the following basics were developed for the program:

1. Condensing the theoretical part concerning the project economic and technical feasibility studies in four weeks, as well as the part of computers and applications in information systems, data display, and PROPSPIN and COMFAR methods in feasibility studies.

2. Inclusion of some case studies and special exercises relevant to each subject in the part of project technical and economic feasibility studies used in the first program.
3. Measuring the trainee knowledge before and after training session using the form previously used in the first program. This will serve in measuring the trainee progress and benefit from the program.

This in addition to testing their computer skills in the respective subjects.

4. Consequently, the units of the second training program were designed, divided and implemented so as they include 12 training units representing 12 training weeks as follows:

Unit (1): General Framework for Project Economic Feasibility Studies - The Outside Environment - (The Market)

This was carried out Sunday, June 6, 1992 to Thursday, June 25, 1992, and included the following subjects and procedures:

1. Application of knowledge measurement form on trainees before the beginning of the program.
2. General scope of work for the study of existing projects and establishments.
3. Motives and obstacles in the private industrial sector investments in Egypt, and how to propagate projects.
4. Environmental pollution resulting from 'he factories' wastes, the cost of its disposal, and the effect of this issue on the Projects primary feasibility studies.
5. Market studies and analysis of demand for new projects.
6. An application case in the analysis of demand for new projects (The case of Demand on Macaroni).

Unit (2): The technical sides in the Project Feasibility Studies:

This training unit was carried out Sunday, June 27, 1992 to Thursday July 1, 1992. It included the following subject:

1. Dimensions of technical feasibility study.
2. Products and production capacity assessments.
3. Selection of relevant technology and determination of production operations.
4. Labor needs assessment.
5. Machinery needs assessment.
6. Factory planning.
7. Raw material needs assessment.
8. General framework for the preparation of the final report for the technical feasibility study.

The following case studies were used during this training unit:

1. Machinery calculation
2. Raw material calculation
3. Labor needs assessment

Unit (3): Introduction to Computers and Computer Operation

This unit was carried out July 5 to July 9, 1992. It included the following subjects:

1. Introduction to computers and historic development of computers.
2. Computer operation.
3. Computer programs and applications.
4. Dealing with hard disk and floppy disks.
5. Dealing with computer files.
6. Dealing with directories and sub-directories.

The main objective of this unit was practicing on the available computers.

Unit (4): Project Financial and Economic Feasibility Study

This was implemented July 12, to 16, 1992. It included the following subjects:

1. Total Investment Cost.
2. Working Capital.
3. Operations Expenses.
4. Funding Structure.
5. Sales Revenues.
6. Net Profit.
7. Investment Profit.
8. Average Internal Investment Profit.
9. Period of Capital Recovery.
10. Cash Flow

A case study for a meat manufacture project financial and economic feasibility study was used.

Unit (5): Lotus 123 Spread Sheets

Implemented on July 18, to 22, 1992. This program was designed so as training on spreadsheet (Lotus 123) is held in the week preceding computer applications in financial feasibility studies using PROPSPIN method. Also, after the trainees receive unit (4) training on project financial feasibility study because using PROPSPIN method requires awareness with Lotus spreadsheets and the financial feasibility study. This unit included the following subjects:

1. Introduction to Lotus 123 spreadsheets.
2. Operating spreadsheets and files.
3. Type of data dealt with in Lotus 123.
4. Simple calculus operations and equations.
5. Graphics.
6. Dealing with data through data base.
7. Statistic and financial equations in spreadsheets.
8. Applications.

**Unit (6): Computer Applications in the Preparations of Feasibility Studies using
PROPSPIN Method**

Implemented on July 26 to July 30, 1992 after the training on Lotus 123 spreadsheets which enabled the trainees to deal with the tables of project feasibility studies and special reports using PROPSPIN method. This program included the following:

1. General orientation with the program.
2. Explaining the program's screens and how to move through them.
3. Dealing with the different financial statements in the program.
4. Analysis of the program results (outputs).
5. Case studies.

This unit training revealed an increasing interaction between the trainees and computers, in addition to a considerable increase in the skills of the majority in using this program.

Unit (7): dBase III+

Carried out on August 2, to 6, 1992. This unit represents stage I in dealing with data base, and has a special importance in the dealings of GOFI with the technical and economic data. The unit includes the following:

1. Definition of data base.
2. Definition of screens and sub-directories.
3. Creation and modification of files.
4. Creation and modification of the forms of data display.
5. Issue of reports.
6. Categorizing and organizing data.
7. Investigations and establishment of research reports.
8. Case studies.

Unit (8): Advanced dBase III+

Carried out on August 9 to 13, 1992. This unit represents stage II in dealing with data base. Through this unit the training dose was increased in the subject, and included the following:

1. Concept of programming.
2. Inter-relations in creating the different programs.
3. Flow-chart of operations.
4. Dealing with computer files through the programs.
5. Program development for data entry, modifications, and data display.
6. Preparation and printing of reports.
7. Preparation of program menus and their selection.
8. Relating the different programs.

This unit included several exercises which raised the trainees' reaction to the extent that the majority of trainees continued the computer training after the fixed time for long hours.

Unit (9): Computer Applications in the Processing of Statistical Data

Carried out on August 16 to 20, 1992. This unit is the extension and the logic sequence of training, because it is important to complete dealing with data by means of statistical processing. This unit included the following:

1. Identification and categorizing of data.
2. Quantity and statistical description of data.
3. Dealing with numerical and non-numerical data.
4. Establishing statistical relationships.
5. Graphics presentation.
6. Dealing with more than one variable data.
7. Analysis and comment on the results of statistical processing.
8. Case studies.

At the beginning of the training some difficulties appeared concerning dealing with some statistical applications. By using additional case studies and applications, the interaction and response to the program increased.

Unit (10): Computer Applications in the Development of Feasibility Studies Using COMFAR Method

Implemented during August 23 to 27, 1992. This unit represents part I of COMFAR method training which is considered one of the most important computer applications in the development of feasibility studies. Dr. Jadronko Bendekovic UNIDO Expert attended and supervised this training. He met with PIEMCO experts and coordinated work so as he covers the subjects that were not covered in the first program held on March 92 and PIEMCO covers the other subjects of program I. This unit included the following subjects:

1. Explanation of the program and how it is operated.
2. Explanation of the screens and how they are handled.
3. Data required for the project and how they are entered.
4. Data entry board.

5. Data entry and modification.
6. Storage and recalling of data.

Unit (11): Completion of Computer Application in the Preparation of Feasibility Studies Using COMFAR Method

Implemented on August 29 to September 2, 1992 and is representing Part II training on COMFAR method. Dr. Jadronko participated in this session for 3 days and left Cairo on September 1, 1992 whereas PIEMCO experts completed the program. Part II training of this unit included the following:

1. Calculations and analysis of data.
2. Issue of different accounting and financial reports.
3. Comments on the reports issued on the program and their analysis.
4. Issue of different kinds of graphics.
5. Analysis and comments on graphics.
6. Case studies.

The trainees responded and interacted with this program during its two parts and ensured its suitability for project evaluations and GOFI activities.

Unit (12): Model Preparation for Small and Medium Industrial Projects: Review of Feasibility Studies Preparation: and Evaluation of the Theoretic Knowledge in the Program

Carried out on September 5 to 9, 1992. Included were the following subjects:

1. Preparation of models for small and medium industrial projects.
2. Applications on the preparation of small industrial projects models (case of establishing a workshop for the manufacture of school furniture).
3. Review of the preparation of comprehensive feasibility studies with an application on a meat manufacture factory. (Reinstated for revision and handling of the technical aspects in the respective factory).
4. Evaluate the training knowledge using trainee knowledge evaluation form previously used in the first program and the beginning of the second program.

As such, the second program has completed the planned 12 weeks. PIEMCO experts found out that the computer subjects need review and more practice in addition to evaluation of the trainee computer knowledge and skills. Therefore, an additional training unit was added. (Unit 13).

Unit (13): General Review

Carried out on September 12 to 14, 1992. It included the following:

1. Comprehensive review of the subjects concerned with computer data display and processing.

2. Comprehensive review of PROPSPIN and COMFAR methods.
3. On September 7, 1992, the trainees were delivered case studies to prepare the required data and process it using PROPSPIN and COMFAR methods on computers (data entry and report production).

This was used to evaluate the trainee computer skills in this program.

In fact, the trainees went through this required test. Results were recorded and evaluated and were included into the program final evaluation (part concerned with evaluation of computer knowledge and skills).

IV. Modifications on Training Materials

In light of the first program, and due to condensing the time of environmental and marketing sides of the project feasibility studies in addition to their technical, financial and economic dimensions. Also, due to the preparation of the small and medium industrial project models being reduced from 9 to 4 weeks; the following modifications were made on the training material:

1. Re-writing of the basic concepts in the feasibility studies of the industrial projects and condensing it to deal directly with these fundamentals.
2. Re-writing the part concerning the motives and obstacles of investment in the private sector in Egypt. Then summarizing of them to directly deal with motives and obstacles without entering into theoretic details.
3. Addition of a material about pollution and how to dispose of the factories' wastes as being an integral part of the feasibility study.
4. Re-writing the part of the technical dimensions in feasibility studies, condensing it, emphasizing the procedural dimension, and deleting theoretic details so as to suit the time fixed for this part of the second program.

5. Re-write the part concerning the financial, economic dimensions, delete the part that the trainees could not respond to or acquire in the first program, relate this part to the parts and subjects dealt with by PROSPIN and COMFAR, and the applications.

V. Case Studies Practiced in the Second Program

Due to condensing the time of the second program in dealing with the concepts of preparing the technical, economic, and financial studies, in addition to evaluating the potential market for these projects; it was impossible to use all the designed applications and case studies dealt with in the first program. Therefore, the most suitable case studies leading to ensuring and acquiring the knowledge of the program in the available time were selected. The following case studies were presented in the second training program:

1. Case study on the demand on Macaroni (a small factory).
2. Calculation of machinery.
3. Calculation of raw material.
4. Case study in labor needs assessment.
5. Case study on the economic and technical evaluation of meat packing factory (medium factory).
6. Case study on establishing a project for school furniture production (this case is an industrial model for the establishment of a small project) it was attached with the final report of the first training program.

VI. Training Process

The training process was divided into theoretic training, and practical training. The theoretic training was given to two groups in the same time and in a hall equipped for the purpose. An overhead projector was used as a teaching aid for explaining the main points of the subjects under study.

As for the practical training on the computers which represents the basics of the program, it was carried out in the training hall of GOFI. The available computers were as follows:

- Some (10) personal computers with a colored monitor.
- One personal computer, monochrome.

- One parallel printer, 132 Chr, E1.
- One overhead projector.
- One data display show

In addition to a white board.

This shows that the equipment needed for the success of the training process was available and sufficient. Preparations were made for the 22 trainees that PIEMCO was responsible for and one computer was assigned for each 2 trainees. The training unit lasted 5 days, Sunday to Thursday from 9:00 am. to noon with a 30 minutes break from 11:30 to 12:00 in the weeks of the basic concepts in the technical and economic feasibility studies for the first and second groups together.

As for computer training; it started at 8:30 am till 1:00 pm for the first group and from 1:30 pm till 4:00 pm for the second group. PIEMCO experts participated in supervising the second group by attending their training till 2:30 pm.

VII. Trainee Evaluation (Training Results)

In the process of making use of the tools used in the first program, the trainee knowledge evaluation form (previously used and proved to be relevant for the purpose) was used. But in the meantime, a basic change was made in the method of evaluation, which is using the same form in the trainee evaluation before and after the program. This will help in identifying how much they grasped the program knowledge. (Attachment (1) is the test form used for the evaluation).

In addition, an application case representing a cluster of data for the status of an investment project needing an economic evaluation by using COMFAR and PROPSPIN methods each separately was employed.

Attachment (2) is a model of an application case upon which trainees were evaluated. Trainees were evaluated on computer skills depending upon the treatment of this case and its processing using computers as well as finding the results of their evaluation.

Following are the results of the first group of trainees which PIEMCO is responsible for their training (22 trainees). They are based upon evaluation before and after training.

| No | Name | Results Before Training | Results After Training |
|----|-----------------------------|-------------------------|------------------------|
| 1 | Kamal El Dia Mohamed Abdou | 46% | 80% |
| 2 | Nehad Khairy Nazir | 42 | 88 |
| 3 | Abdel Moncim Mohamed | 42 | 86 |
| 4 | Afaf Mohamed Sayed | 42 | 78 |
| 5 | Mohamed Ali Oweis El Sayed | 39 | 73 |
| 6 | Ahmed Ali Omran | 39 | 66 |
| 7 | Ragaa Abdel Sattar | 37 | 80 |
| 8 | Faten Abdel Samei Emara | 37 | 62 |
| 9 | Aziza Ali El Sayed | 37 | 86 |
| 10 | Aziza Abdel Wahab Ahmed | 35 | 77 |
| 11 | Mohamed Mohamed Ahmed | 35 | 76 |
| 12 | Mardi Ahmad Ibrahim | 34 | 72 |
| 13 | Hoda Ahmed Mohamed El Sayed | 34 | 86 |
| 14 | Nabil Ahmed El Soghayar | 30 | 71 |
| 15 | Sobeir Helmi Shohdi | 30 | 82 |
| 16 | Mohamed Hafiz Rostom | 29 | 75 |
| 17 | Ahmed Abdel Moncim Shehata | 29 | 69 |
| 18 | Mostafa Ahmed Fayek | 28 | 59 |
| 19 | Amna Abdel Aziz | 24 | 86 |
| 20 | Wafaa Mounir Ibrahim | 19 | 80 |

| No | Name | Results Before Training | Results After Training |
|----|-------------------------|-------------------------|------------------------|
| 21 | Mostafa Mohamed Mohamed | 18 | 61 |
| 22 | Youssry Mohamed Morgan | 18 | 91 |

The following lists show the basic data of the trainees of the first group (original group) that PIEMCO was fully responsible for their training, in addition to the results of their evaluation before and after training. Following are the various fields and subjects covered in the second training program.

Table (1) shows the trainees' data (names, organization, department, position, date of joining current job, qualifications, specialty).

Table (2) shows the results of trainee evaluation before training program.

Table (3) represents the trainee evaluation results in the basic concepts of feasibility studies subject.

Table (4) represents the results of trainee evaluation in the subjects related to market and marketing in feasibility studies.

Table (5) represents results of trainee evaluation in the subjects related to the technical sides of feasibility studies.

Table (6) represents results of trainee evaluation in the subjects related to financial aspects in feasibility studies.

Table (7) shows the trainee results in the subjects related to computer skills.

Table (8) represents the final trainee evaluation in the training program as a whole including theoretical subjects and computers.

No (1)

TRAINEE'S MAIN DATA

| NO. | TRAINEE'S NAME | ORG. | DEPT. | JOB | JOB DATE | EDUCATIO. | SPECIALIT |
|-----|-----------------------------|-----------|------------|------------|----------|-----------|-----------|
| 1 | ABDUL MONEIM MOHAMED | GOFI | PROJECT | SPECIALIST | 1988 | DIPLOMA | MARKET |
| 2 | AFAF MOHAMED MOHAMED SAYED | GOFI | S. S. IND. | SPECIALIST | 1992 | B. SC. | CHEMISTRY |
| 3 | AHMED ABDUL MONEIM SHEHATA | GOFI | LOCAL IND. | SPECIALIST | 1980 | B. SC. | MECHANICS |
| 4 | AHMED ALI OMRAN MOSTAFA | GOFI | FOOD IND. | SPECIALIST | 1980 | B. SC. | AGR. |
| 5 | AMNA ABDUL AZIZ ALI | GOFI | CHEMICAL | CHEMIST. | 1985 | B. SC. | SCINCE |
| 6 | AZIZA ABDUL WAHAB AHMED | GOFI | POWER | ENGINEER | 1986 | B. SC. | COMMUN. |
| 7 | AZIZA ALI AL SAYED | GOFI | ECONOMIC | RESEARCH | 1981 | B. SC. | ECONOMICS |
| 8 | FATEN ABDUL SAMIEA EMARA | GOFI | ECONOMIC | ACC. | 1980 | B. SC. | COMMERCE |
| 9 | HODA AHMED MOHAMED AL SAYED | GOFI | PROJECT | SPECIALIST | 1987 | B. SC. | COMMERCE |
| 10 | KAMAL ELDIN MOHAMED ABDOU | GOFI | POWER | SPECIALIST | 1989 | B. SC. | MECHANICS |
| 11 | MOHAMED ALI EWESS AL SAYED | D.I.B.E. | CREDIT | BANKER | 1990 | B. SC. | COMMERCE |
| 12 | MOHAMED HAFEZ ROSTUM | D.I.B.E. | COMPUTER | V. MANG. | 1988 | B. SC. | COOP. |
| 13 | MOHAMED MOHAMED AHMED | GOFI | S. S. IND. | SPECIALIST | 1985 | B. SC. | AGR. |
| 14 | MORDY AHMED IBRAHIM | GOFI | LOCAL IND. | ENGINEER | 1981 | B. SC. | MECHANICS |
| 15 | MOSTAFA AHMED FAYEK | PRIVATE | OWNER | MANAGER | 1983 | B. SC. | MECHANICS |
| 16 | MOSTAFA MOHAMED MOHAMED | BENHA CO. | BUDGETING | MANG. | 1979 | B. SC. | COMMERCE |
| 17 | NABIL AHMED AL SAGHEER | GOFI | ENG. PRO. | SPECIALIST | 1980 | B. SC. | MECHANICS |
| 18 | NEHAD KHAIRY NAZEER | GOFI | S. S. IND. | SPECIALIST | 1982 | B. SC. | APP. ART |
| 19 | RAGAA ABDUL SATTAR | GOFI | S. S. IND. | SPECIALIST | 1982 | B. SC. | AGR. |
| 20 | SOUHIL HELMY SHOUIDY | GOFI | S. S. IND. | SPECIALIST | 1984 | B. SC. | CHEMISTRY |
| 21 | WAFAA MONIR IBRAHIM | D.I.B.E. | COMPUTER | BANKER | 1985 | B. SC. | COMMERCE |
| 22 | YOUSRI MOHAMED MORGAN | GOFI | IND. REC. | SPECIALIST | 1980 | B. SC. | COMMERCE |

(17)



APPENDIX (1)

**PROJECT OF TRAINING THE TECHNO-ECONOMIC
STAFF IN G.O.F.I.**

**United Nations Industrial Development Organization
"UNIDO"**

Project No 21/01

"Trainees Evaluation Test"

**Training Program on
Techno-Economic Feasibility Studies**

Trainer data:

1. Trainer's name:
2. Enterprise's name:
3. Department's name:
4. Current job:
5. Date of accupying the current job:
6. Qualifications:
 -
 -
 -
 -

This test:

- This test represent one of the most important tools to evaluate the trainers in the programe of preparing the techno-economic feasibility studies of projects. It is held over 12 training weeks and offered through them 8 training units cover the following subjects:

- * The basic concepts of studying the projects and the exciting projects.
- * Hindrances and obstacles of investement.
- * The market study.
- * The technical aspects in feasibility studies.
- * The economic and financial evaluation of projects.
- * The computer's applications in the feasibility studies area by C.O.M.F.A.R. technique.
- * The computer's applications in the feasibility studies area by P.R.O.P.S.P.I.N. technique.
- * Preparing small projects profiles.

- This test measure the trainer's knowledge in those subjects through (76 questions) divided among (4 groups) and the trainer should answer these questions according to

the instructions in each group within 3 hours.

A practical test will be done in addition to the previous test on the skills of COMFAR and PROPSPIN techniques after completing the training on them.

Questions

First: Mark (✓) or (X) tick in front of the following statement:

1. The development is the most suitable usage of the available resources only. ()
2. The financing is the process of applying the production factors to produce a good or a service which yield of its marketing a revenue greater than the fund used in producing it. ()
3. The techno-economic feasibility study of projects try to answer the following questions:
 - Can we produce the product or render the service ? [this question is concerned with market study].
 - How can we produce this product ?
 - What is the total of the investement cost of the project ?
 - When the investement funds will be paid back ? ()
4. The price is not the definite of the required quantity. ()
5. The key problem in choosing the location is to reduce the transporting costs of either the inputs or the outputs to the minimum limit. ()

6. The fixed internal planning is better than the planning according processes for it is always reduce cost. ()
7. The labour market is the best resource of manpower when the project is merely an expansion within an exciting enterprise. ()
8. The depreciations of the fixed assets and of the pre-operating expences are not considered cash out flow. ()
9. The costs of preparing and composing of the fixed assets are added to the fixed assets as a capital cost. ()
10. If the time table of the project is long and a reserve of rising expected prices is calculated, the investement cost of the project should contain this reserve. ()
11. The loan which the project acquire is considered cash inflow while benefits only is considered cash out-flow for the loan. ()
12. The production and the storage activities should take in all the internal planning cases in a factory about 50% of all the total area. ()
13. The investement is the process of providing the funds for a certain purpose. ()

14. The reduction of the prevailing interest rate in comparison of the investement rate and the reduction of the inflation rates, are considered the greatest abstacles of investement. ()

15. The elasticities (the price, the demand and the income) are applied only to get a short run predictions. ()

16. The main problem in determing manpower requirements is not in the correct estimating of the required numbers but in determing the levels, the quality and the proper structure from these numbers. ()

17. The technical aspect in the investement opportunity is related to the extent of the availability of a relative advantage exist or possible. ()

18. The develpment opportunity is an investement opportunity + social benefit or social return relatively large. ()

19. The pay-back period is the period which the project payback in it the costs of its fixed assets. ()

20. The replacement and renewing of the fixed assets affects through the assumed age of the project, the cash flows. ()

21. The financial structure represent the relationship between the working capital and the fixed capital. ()

22. The validity of the economic science is the excess of the human needs over the available resources and so the aim of the economic science is to increase these resources and distribute them a suitable distributions which fullfil these needs. ()

23. The investement opportunity is an available earings in the current time as a result of an exciting market, a technical feasibility and an economic feasibility to produce a good or a service and if we don't caputre it recently it will be lost later. ()

24. The gap in studying projects is the human need which represent a project offer a product or a service fullfil this need, and this gap always exist in the market where the demand excess the supply generally. ()

25. There is no substitue for the manpower planner in determing the needs of manpower in a project to take into consideration the following points:

- * Studying the similiar projects.
- * Studying the work places in the technical study.
- * Consulting the machines providers and the experts. ()

26. The investement opportunity doesn't gain its validity unless it can create work opportunities directly or indirectly. ()

27. It is possible -in some cases- to determine the numbers, the levels and the structure of the required manpower for a project before determing its technical processes. ()

Second: Complete the following phrases & sentences:

28. The marketing mix is a group of decisions concerned the following:

- a) What is the product which will be produced to the market ?
- b)
- c)
- d) What are the proposed promotion efforts ?

29. The process of entering a new product into the market include several stages as the following:

- a) The research of a product idea.
- b)
- c)
- d)

30. The best measure for the production capacity is:

- a) The outputs which represent the capacity as
- b) when the outputs vary and
- c) The permanent resources when

31. The investment cost items to acquire a machine is composed of the following:

- * The price.
- *
- *

- *
* The insurance.
- *
* The sales tax.
- *
* The composing.
- *
* The construction equipments.

32. The production processes is the relationship between the worker and the machine, and this is the intermediate stage between and

33. Questionnaires for clients opinion is used to estimate the demand in two cases:

- a)
- b)

34. The secular trend method estimate the demand according to the events which happened in the past

35. The statistical estimation method of the demand study the relation of the demand with

36. The factors which affects the production planning capacity decisions are:

- 1) The change in demand because:

a) If the demand is increased, the capacity will be expanded.

b) If the is decreased,

c) If the production kinds change,

2) The change in for:

a) The decrease of price

b) a new location for the factory.

37. The theoretical capacity is

38. The normal capacity is

39. The actual outputs is

40. The optimum effective capacity is

41. The production processes are divided into processes and processes and processes which depend on each other, it means that each process shouldn't perform before the other, and the processes which

42. The balance price is defined as the price with which the quantity is equal quantity, and to find the balance price we need two sorts of data, the first is and the second is, these data is illustrated in two tables.

43. The flexibility of demand is but the internal demand flexibility is

44. The potential demand is and the derived demand is

45. In order to define and choose the necessary production processes, a set of schedules and charts are prepared as the following:

- 1)
- 2)
- 3) Processes implement schedules.
- 4)
- 5)

46. The working sheet is the correct foundation in determining the need from raw materials and supplies for it include the following:

- The part or the product.
-
- The main dimensions.
-

47. The break even point in value equal

48. The internal rate of return on investment is

49. If the net present value of the cash flows with a discount rate 18% equal + 100,000 (positive) it means that while if the net present value equal -100,000 (negative) it means that

50. The sensitivity analysis is

51. The working capital is

52. The most important available methods to study the demand are:

- a)
- b)
- c)
- d) Cross-section study of the family balance sheet data, the price flexibility and the income flexibility.
- e) Study of the technical coefficients (the inputs analysis of the industrial goods).
- f)
- g) The statistical estimation of the demand.

53. The project stages are:

- 1)
- 2) The investment stage.
- 3)

54. The productivity is:

55. The pre-investment stage include the following four steps:

- 1) Discovering investement opportunity.
- 2)
- 3)
- 4) The project evaluation and take the investement decision.

56. The investement stage include the following four steps:

- 1) The negotiation and contracting on the project implement.
- 2)
- 3) The construction.

57. The product is developed either by the development of its functional value (its usage) or or both together.

58. The development areas in the factory are:

- * development.
- * The operation development.
- *
- *

59. The operations development areas are:

- * Reduce of the production time.

- *

- * Increase

- * Decrease

60. The operation development technique is preformed by:

- * The methods study.

- *

- * The standard times study.

- * The operation re-design.

- *

- *

61. The work cycle in the industrial enterprise is consisted of the following stages:

- * The idea.

- * The design and the research (the production simulation).

- *

- *

- *

- * Marketing.

- *, it means the delivery of the goods directly to the clients.

62. The jobs development technique is performed by the following:

Third: Answer the following questions:

63. Mention the most important differences between the industrial profiles and the feasibility study ?

64. What is the most important items of the industrial profiles ?

65. Mention five investment opportunities represent profitable projects and it is possible to prepare industrial projects profiles for them:

- 1-
- 2-
- 3-
- 4-
- 5-

66. Define COMFAR system (not more than 5 lines):

-
-

67. Define PROFSPIN (not more than five lines):

-
-

68. Mention the difference between COMFAR and PROCPSPIN:

-
-

Forth: Choose the correct answer in the following question mark (✓) in front of the correct answer:

The fixed assets to establish a small industry project is about 230,000 L.E. The pre-operation expences are about 40,000 while the project needs annuly production costs (material, wages, expences, depreciation) 100,000 L.E. and the annuly production quantity is 2000 units, its sale value is 180,000 L.E. The annual depreciation instalment is 20,000 L.E. The first operating cycle of the production is 3 months.

According to the above data calculate the following:

69. The investement cost of the project:

- a) 270,000 L.E.
- b) 295,000 L.E.
- c) 290,000 L.E.

70. The annual cash inflow through the operating years is:

- a) 180,000 L.E.
- b) 80,000 L.E.
- c) 100,000 L.E.

71. The annual cash outflow through the operating years is

- a) 100,000 L.E.

b) 120,000 L.E.

c) 80,000 L.E.

72. The cash outflow through the construction year is:

a) 230,000 L.E.

b) 270,000 L.E.

c) Not (a) or (b).

73. If the annual fixed cost represent 20% of the total production costs, the break-even point equal:

a) 400 units.

b) 1000 units.

c) 1200 units.

74. The pay-back period is estimated to be:

| | Year | Month |
|----|------|-------|
| a) | 2 | 4 |
| b) | 2 | 11 |
| c) | 2 | 8 |

75. The ratio of the annual net profits to the investement cost of the project:

a) 27.6%

b) 29.6%

c) 27%

76. If the assumed age of the project is 10 years, the residual value in the end of the tenth year:

- a) 95,000 L.E.
- b) 90,000 L.E.
- c) 70,000 L.E.

Name :

Org. :

No.: ()

**Computer Applications in
Feasibility Studies
(Final Exam)**

- Note :
- * LC = 1.7 A C FC = 2.62 IC
 - * This project will produce only Product A (Leather Bags)
 - * All missing information ought to be assumed by the participant they have to do any required adjustment.

1- Total fixed investment (in thousands)

| Item | Year | | | | |
|------------------------|------|------|------|------|-------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 - 2009 |
| - Land | 100 | -- | -- | -- | -- |
| - Buildings | 1000 | 50 | -- | -- | -- |
| - Auxiliary facilities | -- | 40 | 20 | -- | -- |
| - Inc. fixed assets | -- | 10 | 10 | -- | -- |
| - Equipment | 900 | 1400 | 100 | 30 | -- |
| - Pre-production costs | 65 | 120 | -- | -- | -- |
| (% of foreign | 35 | 70 | 20 | 20 | --) |

2. Production program (capacity utilization)

| | |
|------------------|-------|
| Year 1995 | 60 % |
| Year 1996 | 80 % |
| Year 1997 | 100 % |
| Year 2008 - 2009 | 110 % |

3. Sales Program

| Year | Amount in 1000's | Unit Price | % of foreign |
|-----------|------------------|------------|--------------|
| 1995 | 1200 | 100 | 10 |
| 1996 | 1600 | 100 | 20 |
| 1997 | 2000 | 100 | 30 |
| 1998-2009 | 2200 | 100 | 40 |

4. Standard production costs (in thousands)

| Item | Amount | Per unit | % of foreign |
|----------------------------|--------|----------|--------------|
| - Raw material 1 | 865 | 20 | -- |
| - Other raw materials | 250 | 10 | 20 |
| - Utilities | 10 | -- | -- |
| - Energy | 50 | -- | 80 |
| - Direct labour | 55 | 50 | 5 |
| - Repair | 15 | -- | -- |
| - Spare parts | 10 | -- | 90 |
| - Factory overheads | 40 | -- | -- |
| - Administrative overheads | 70 | -- | -- |
| - Sales material costs | 20 | -- | 80 |
| - Sales labour costs | 60 | -- | 80 |

5. Sources of finance (in thousands)

| Item | Year | | GP | Period | % |
|-------------------|------|------|----|--------|----|
| | 1993 | 1994 | | | |
| - Ordinary equity | 1445 | 590 | | | |
| - Foreign loan A | 300 | 600 | 1 | 10 | 17 |
| - Local loan A | 195 | 250 | 2 | 10 | 21 |
| - Bank overdraft | 14 | 82 | | | 19 |

6. Annual rate of taxes

| Year | % |
|-----------|----|
| 1995 | -- |
| 1996 | 26 |
| 1997 | 32 |
| 1998-2003 | 37 |
| 2004-2009 | 42 |

Mr.

Appendix No. (3)

Greetings,

We would like to congratulate you for your successful completion of the second training program for the technical and economic feasibility study using modern computer applications. This training program was held on June 21, 1992 to September 9, 1992 for 12 weeks and covered the following subjects:

| Week No. | Subject | No. Of Hrs. |
|----------|---|-------------|
| 1 | General scope of work for Project Economic Feasibility Studies | 25 |
| 2 | Technical sides in Project Feasibility Studies | 25 |
| 3 | Introduction to Computers and Computer Operation | 25 |
| 4 | Project Economic and Financial Feasibility Studies | 25 |
| 5 | Lotus 123 - Spreadsheets | 25 |
| 6 | Computer Applications in the Preparation of Feasibility Studies using PROPSPIN Method | 25 |
| 7 | dBase III+ | 25 |
| 8 | Advanced dBase III+ | 25 |
| 9 | Computer Applications dealing with statistical data SPSS | 25 |
| 10 | Using of (10) Computer Applications in the Preparation of Feasibility Studies employing COMFAR method | 25 |
| 11 | Preparation of small and medium industrial methods. | 25 |
| 12 | Total Hours | 25 |

Your final evaluation result was as follows:

- Basic concepts in Project Feasibility Study %
- Marketing aspects in Project Feasibility Studies %
- Technical aspects in Project Feasibility Studies %
- Financial aspects in Project Feasibility Studies %
- Computer skills %

Total Score %

My deepest thanks

PIEMCO General Manager

Dr. Eng. Gamal Nawara