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IDB/UNIDO WORKSHOP ON  
INDUSTRIAL PROJECTS APPRAISAL AND MONITORING

15 - 26 February 1986

Jeddah  
Kingdom of Saudi Arabia

Project: SF/INC/85/001/

FINAL REPORT

by

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Industrial Engineer

and

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Industrial Economist

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## 1. Background Information

The workshop on Industrial Investment Projects Appraisal was organized within the framework of the technical co-operation established between the United Nations Industrial Development Organization (UNIDO) and the Islamic Development Bank (IDB).

Further to the IDB request for assistance to organize a training programme for its personnel staff engaged in investment project appraisal, UNIDO elaborated the appropriate project document for meeting the request and it was agreed upon and signed by both parties concerned.

The objectives of the workshop were essentially to help the participants improve and upgrade their expertise and skills in investment project appraisal, and this was expressly stated in the project document and the job descriptions established for the consultants recruited for the workshop.

## 2. Organisation of the Workshop and Scheduling

For the fulfilment of the objectives sought, expert services of two international consultants specialized in financial analysis and in industrial engineering respectively were provided by UNIDO for a period of three weeks each; and adequate logistic support consisting of all the facilities required for the organization and conduct of the workshop were provided by the IDB within its own premises.

In accordance with the above, the two international Consultants, authors of the present report, carried out the duties prescribed to them according to the following schedule:

- From 09/02/86 to 10/02/86: Briefing UNIDO Vienna
- From 10/02/86 to 21/02/86: Duty Station Jeddah
  - \* From 11/02/86 to 14/02/86: Finalisation of the training programme and scope of workshop reproduced in annex II
  - \* From 15/02/86 to 26/02/86: Implementation of workshop and evaluation appraisal of the workshop
- From 21/02/86 to 23/02/86: Debriefing UNIDO Vienna

In addition, the following documents were provided by UNIDO before the start of the workshop:

- a) 30 copies of the UNIDO Manual for the Preparation of Industrial Feasibility Studies (ID/206),
- b) 30 copies of the UNIDO Manual for Evaluation of Industrial Projects (ID/204),
- c) 30 copies of the UNIDO Guidelines for Project Evaluation (ID/SER H/2).

The IDB distributed at the workshop 15 copies of the appraisal reports of the following projects:

- a) Chemical Projects in Senegal,
- b) Cement Andalas Project in Sumatra.

With regard to timing and scheduling the workshop was efficiently organised and implemented from the 11<sup>th</sup> to the 26<sup>th</sup> February 1966.

The programme of the workshop is shown in annex II.

Three working sessions were held daily: from 9:30 am to 10:30 am,  
from 10:45 am to 12:15 pm,  
from 13:00 pm to 14:00 pm.

### 3. Programme of the workshop

The UNIDO consultants had three days in Jeddah to prepare for the workshop and this proved most useful. During this time consultations were held with the IDB responsible officials and a revised programme was designed to meet the IDB immediate requirements and activities in investment project appraisal and evaluation.

In consideration of the foregoing the workshop stressed the need to follow a systematic managerial approach for carrying out the appraisal work required for investment projects and was implemented successfully within this framework. At the termination of each topic, the consultants prepared a summary of findings and conclusions which was distributed to the participants (a copy of these summaries and conclusions is attached in annex IV).

#### 4. Participants

Fourteen staff members of the IDB belonging to three major departments were designated by the IDB to attend the workshop (list of participants in annex III). There were 8 staff members of the Operations Department, 4 of the Projects Department and 2 of the Economics Policy and Planning Department.

The participants were given ample chance to express their views and to contribute to the subject matter through discussions which followed the presentations made by the consultants and the participants. This approach proved satisfactory to all concerned. Attempts were made to emphasize the major issues to be confronted during the investment project appraisal exercise and to highlight the specific methodology and techniques applied without going into the minute details.

#### 5. Evaluation of the workshop

For the evaluation of the workshop the UNIDO Questionnaire was used as revised (see annex V). Nine participants completed the questionnaire. Their evaluation may be summarized as follows:

- a) There was general consensus that the objectives of the workshop were achieved (two participants stated that the achievement objectives were limited.)
- b) There was consensus and agreement as to the usefulness/appropriateness of the following issues:
  - the workshop's scope
  - the workshop's contents
  - the logic sequence of the topics discussed
  - the coordination of the topics
  - the length of the workshop period (a few wanted a longer duration)
  - the reasonable workload
- c) About two thirds of the participants stated that they were exposed to new concepts and principles
- d) The majority felt that the level of contents was adequate, two felt it was low.

e) There was general consensus about the following aspects for achieving better results:

- More teaching material should be provided.
- Group homogeneity should be ensured.
- Workshop should be held outside the IDB premises
- The timing of the workshop should not coincide with other important meetings.
- Case studies should be provided from outside the sponsoring agency.
- More time is required for in depth and more detailed coverage of the topics.

At the closing of the workshop the IDB responsible officials and participants expressed satisfaction with the outcome of the workshop and also expressed interest in further UNIDO involvement in training programmes.

#### 6. Recommendations and Observations of the Consultants:

The consultants are of the opinion that the workshop was successful as indicated by the responses of the participants to the Evaluation Questionnaire. The IDB administration provided facilities and equipment for the workshop and transportation to the Consultants. The IDB provided two "appraisal studies" as teaching material. However, it would have been useful also to have had a "feasibility study" as a case study on which the workshop would prepare an appraisal. It is recommended that the future workshop be held outside the premises of the IDB so that the participating staff would not be distracted by office commitments. The consultants would recommend that UNIDO should also provide "feasibility studies" as case studies in addition to the standard documents which have been provided. The wide coverage of the subject of this workshop would justify the organisation of another workshop with a narrower coverage. In this way there will be enough time to cover the subject in-depth to a more homogenous group.

The consultants wish to express their appreciation to IDB senior staff members for the effective co-operation and assistance provided throughout the workshop and to the group of participants for the valuable contribution made toward the success of the workshop. High appreciation is also extended to UNIDO's Feasibility Studies Section, which backstopped the project.

## UNITED NATIONS



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO

## JOB DESCRIPTION

SF/INT/85/001/11-51

- Post title** Industrial Engineer
- Duration** 3 weeks (including briefing and debriefing)
- Date required** February 1986
- Duty station** Jeddah, SAUDI ARABIA
- Purpose of project** To organise and implement a training programme for the personnel of the Islamic Development Bank in Jeddah on project evaluation, selection and monitoring.
- Duties** The expert will be a member of a team of two international experts assigned to the Islamic Development Bank in Jeddah to conduct a workshop for a duration of two weeks on project evaluation, selection and monitoring. More specifically the expert will:
- .....
1. Review and finalise the attached programme for the workshop in consultation with the responsible officials at the IDB.
  2. Review and select suitable feasibility studies made available by the IDB for use as case studies.
  3. Prepare lectures and other material covering the topics in the workshop programme falling within his field of competence.
  4. Advise the IDB on any matters requested of him.
- At the termination of the workshop, the expert will prepare an assessment report on the workshop jointly with the second member of the team and include recommendations on the training requirements at the IDB.
- ...../..

Applications and communications regarding this Job Description should be sent to:

Project Personnel Recruitment Section, Industrial Operations Division  
UNIDO, P.O. Box 707, A 1010 Vienna, Austria



**Qualifications**

Advanced University degree in Mechanical Engineering and considerable professional experience in the preparation and evaluation of technical feasibility studies and in conducting similar training programmes.

**Language**

Fluency in English essential, fluency in other official languages of the United Nations an asset.

**Background information**

The IDB is an international financial institution established in pursuance of the Declaration of intent issued by the Conference of Finance Ministers of Muslim Countries held in Jeddah in Zil-Qidah, 1393 H, corresponding to December 1973. The Bank formally opened on 15 Shawwal 1395 H, corresponding to 20 October 1975.

The main functions of the Bank are to participate in equity capital and grant loans for productive projects and enterprises besides providing financial assistance to member countries in other forms for economic and social development. It is also responsible for assisting in the promotion of foreign trade, especially in capital goods, among member countries, for providing technical assistance to member countries, for extending training facilities to personnel engaged in development activities and for undertaking research to enable the economic, financial and banking activities in Muslim countries to conform to the Shariah.

The Bank has a capital stock of two billion Islamic Dinars. The Islamic Dinar is a unit of account at the Bank and is equal to one SDR (Special Drawing Right of the IMF). The subscribed capital is 1 820,17 million IDS and the paid-up capital is 768,85 million IDS (US\$ 876,75 million) as of 29 Zul-Hijjah 1401 H (27 October 1981).

# UNITED NATIONS



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO

## JOB DESCRIPTION

SF/INT/85/001/11-52

**Post title**           Economist/Financial Analyst

**Duration**            3 weeks (including briefing and debriefing)

**Date required**       February 1986

**Duty station**        Jeddah, SAUDI ARABIA

**Purpose of project**    To organise and implement a training programme for the personnel of the Islamic Development Bank in Jeddah on project evaluation, selection and monitoring.

**Duties**                The expert will be a member of a team of two international experts assigned to the Islamic Development Bank in Jeddah to conduct a workshop for a duration of two weeks on project evaluation, selection and monitoring. More specifically the expert will:

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1. Review and finalise the attached programme for the workshop in consultation with the responsible officials at the IDB.
2. Review and select suitable feasibility studies made available by the IDB for use as case studies.
3. Prepare lectures and other material covering the topics in the workshop programme falling within his field of competence.
4. Advise the IDB on any matters requested of him.

At the termination of the workshop, the expert will prepare an assessment report on the workshop jointly with the second member of the team and include recommendations on the training requirements at the IDB.

...../..

Applications and communications regarding this Job Description should be sent to:

Project Personnel Recruitment Section, Industrial Operations Division  
UNIDO, P.O. Box 707, A-1010 Vienna, Austria

**Qualifications**

Advanced University degree in Economics and Finance, and considerable professional experience with a development bank and in conducting similar training programmes.

**Language**

Fluency in English essential, fluency in other official languages of the United Nations an asset.

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IDB/UNIDO WORKSHOP ON INDUSTRIAL INVESTMENT

APPRAISAL AND MONITORING

(JEDDAH 15-26 FEBRUARY, 1986 - 6-17 JAMADA AL-AKHIRA, 1406H)

Saturday, 15.2.1986

1030 - 1100 : Inauguration of Workshop by IDB Vice-President for OP&L

1130 - 1230 : Workshop presentation by UNIDO - consultants;  
Messrs T.S.Abida and J.Holten.

- Objectives
- Approach
- Programme and Schedule
- Case Studies

. IDB appraisal report for a cement plant

. IDB appraisal report for a fertilizer plant.

PART ONE: GENERAL INTRODUCTION ON THE PREPARATION OF INVESTMENT STUDIES AND THE SELECTION CRITERIA WITH SPECIAL REFERENCE TO THE IDB

Sunday, 16.2.1986

Review analysis of the procedures applied in industrial investment project decisions and of the criteria for selection and financing; presentation, review analysis & findings.

0930 - 1030 : General presentation (Mr.T.S.Abida, UNIDO -consultant)

1045 - 1215 : Specific presentation about the criteria of choice and the procedures applied at IDB.  
(IDB - participant Mr.Mustafa Diouf)

1300 - 1400 : Findings/discussions

- UNIDO consultants
- IDB participants

PART TWO: APPRAISAL METHODS AND TECHNIQUES WITH SPECIAL REFERENCE TO IDB PROJECTS SELECTED AS CASE STUDIES

Monday, 17.2.1986

Appraisal of market studies: sources of information on markets, methods and criteria for assessing assumptions, forecasting techniques, pricing etc.

- 11 -
- 0930 - 1030 : General presentation; UNIDO - consultant Mr.T.S.Abida
- 1045 - 1215 : Market appraisal of cement project and fertilizer project (IDB - participant Mr.T.Adibi)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

Tuesday, 18.2.1986

Appraisal of technical and economic aspects of industrial investment projects: plant size, selection of technology, availability and suitability of raw materials and utilities, skills, layout, engineering/costing, procurement, implementation, managerial organizational aspects and other inputs required.

- 0930 - 1030 : General presentation; UNIDO - consultant (Mr.J.Holten)
- 1045 - 1215 : Technical appraisal of the cement project and the fertilizer project (IDB - participant Mr.Zenifar)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

Wednesday, 19.2.1986

Appraisal of the financial and economic aspects of industrial investment projects:

- Financial appraisal : valuation of investment, operating costs & sales and appraisal methods (cash flow generation and DCF appraisal methods, balance sheet analysis etc.)
- Economic analysis, methods and techniques

- 0930 - 1030 : General presentation; UNIDO - consultant (Mr.T.S.Abida)
- 1045 - 1130 : Financial/economic appraisal of cement project (IDB - participant Mr.S.Baina)
- 1130 - 1215 : Financial/economic appraisal of fertilizer project (IDB - participant Mr.Ismail Ouedrigo)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

Saturday, 22.2.1986

Review analysis of the methods for checking uncertainties and risks in investment decisions and their consistency with the established criteria of choice.

- 0930 - 1030 : General presentation; UNIDO-consultant  
(Mr.T.S.Abida)
- 1045 - 1215 : Review analysis of the methods and techniques  
practically applied at IDB (IDB - participants  
and UNIDO-consultants)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

Sunday, 23.2.1986

Appraisal reports: format, contents & review analysis of their consistency with the established procedures.

- 0930 - 1030 : General presentation; UNIDO - consultants  
(Mr.J.Holten)
- 1045 - 1215 : Review analysis of IDB appraisal reports and  
their consistency with the established procedures  
with special reference to the cement and fertilizer  
projects. (IDB - participant Mr.A.M.Diouf)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

PART THREE: FOLLOW-UP AND MONITORING INVESTMENT PROJECTS IN  
THE POST APPROVAL STAGE

Monday, 24.2.1986

Financing procedures, monitoring techniques and means provided in the implementation phase: presentation, review analysis and findings.

- 0930 - 1030 : General presentation; UNIDO - consultant  
(Mr.J.Holten)
- 1045 - 1130 : Presentation of IDB applied procedures for  
financing; (IDB - participant Mr.M'Boje)

- 1130 - 1215 : Presentation of IDB Monitoring Procedures  
(IDB - participant Mr.Saad Al-Haran)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

Tuesday, 25.2.1986

Follow-up procedures and reporting in the production phase.

- 0930 - 1030 : General presentation; UNIDO - consultants  
(Mr.J.Holten/Mr.T.S.Abida)
- 1045 - 1215 : Presentation of IDB applied procedures  
(IDB - staff member Mr.Hassan Mohammed Hassan)
- 1300 - 1400 : Findings/discussions
- UNIDO consultants
  - IDB participants

PART FOUR: GENERAL CONCLUSIONS

Wednesday, 26.2.1986

- 0930 - 1030 : Presentation summary of findings and conclusions
- 1045 - 1215 : Evaluation of the workshop (completion of the  
questionnaire) UNIDO-questionnaire
- 1300 - 1400 : Closing session

ANNEX III

LIST OF PARTICIPANTS OF THE WORKSHOP ON  
PROJECT EVALUATION, SELECTION AND MONITORING  
FROM 15-26 FEBRUARY , 1986

<u>N a m e</u>	<u>Department</u>
1. Br. Osman Nassief	Operations Department
2. Br. Mohamed Ennifer	Operations Department
3. Br. Ismail Ouedrago	Operations Department
4. Br. A.B. M'Boge	Operations Department
5. Br. Mohamed Khalid Ezzidin	Operations Department
6. Br. Kamal Mahdi El-Helo	Operations Department
7. Br. Saad Al Harran	Operations Department
8. Br. El-Sharif El-Amin Hindi	Operations Department
9. Br. A.M. Diouf	Projects Department
10. Br. Dr. T. Adebisi	Projects Department
11. Br. S. Baina	Projects Department
12. Br. A.M. Fa'ni	Projects Department
13. Br. Abdullahi M. Isse	E&PP Department
14. Br. Muinul Hassan	E&PP Department



IDB/UNIDO WORKSHOP ON : INDUSTRIAL PROJECTS

APPRAISAL AND MONITORING

JEDDAH 15 - 26 FEB. 1986

Summary of findings and conclusions  
on the topics presented and discussed  
during the workshop

Drafted by:

T.S.Abida and J.Holten  
UNIDO Consultants

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Abbreviations: IIP:Industrial Investment Projects  
UNIDO Manual: UNIDO Manual for the Preparation of  
Feasibility Studies.

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OVERALL SUMMARY ON:  
THE CONTENTS OF THE WORKSHOP  
(WEDNESDAY, 26 FEBRUARY, 1966)

1. Industrial investment projects evaluation appraisal is normally an integral part of development programs and plans and as such it can best be dealt with by taking a managerial approach and applying the standard systems designed for making sound decisions.

2. Within the context of development planning, the evaluation appraisal of IIP must be a continuous exercise, and it shall be extended to the post approval phase where post evaluation is required in order to see to what extent the goals set from the outset are achieved and how to achieve them in the new context created by the production operation phase. Post evaluation permits also to feed back information on the decision making process followed in investment selection and to initiate the corrections which may be required.

3. Regarding the goals and criteria for selecting investments, the standard criteria of financial rates of return (simple and discounted methods) are found to be quite applicable and useful for appraising projects from financial point of view and should be completed with the more specific criteria for appraising projects from the national economy point of view and namely the value added criterion, the effect on the balance of payment, and the economic internal rate of return.

4. The standard procedures and methods established and applied for carrying out the appraisal of the various aspects of investment projects can be usefully backed with the elaboration of a more detailed guidelines which will ascertain checking the interference of risk and uncertainty in the appraisal.

5. Adequate means for carrying out the appraisal of investment projects and namely -

- adequate and set of the specialists and professional skills required for appraising the various aspects of projects.
- the detailed guidelines for IIP appraisal with the check list of the major components to be covered.
- intensive training in specific areas related to the appraisal evaluation of investment projects.

On Industrial Investment Project Appraisal;  
Objective/Purpose and Methods : (Sunday 16 Feb. 1986).

From the review analysis of the subject matter and its presentation within the context of Industrial Investment Project Planning in the Decision Making Phase

it was revealed fundamental to keep present in mind the salient aspects of the appraisal exercise tentatively summarized hereunder

1. Scope and Coverage :

The Appraisal exercise is concerned with the measurement of the ultimate objective expected from the IIP under consideration and with checking their consistency with ultimate objectives sought from making the investment .

2. Objective and purpose :

The immediate objective is to provide decision takers with an adequate basis for making decisions consistent with the objectives sought and ultimately to contribute to making sound decisions happen .

3. Procedures Applied :

The procedures applied in appraising IIP consist essentially in applying some of the methods designed for the purpose and the criteria set for measurement of the projects expected performance, both tentatively outlined in the following :

a) the Methods & techniques provided for the appraisal of IIP :

Such methods and techniques are grouped in accordance with the nature of the ultimate objectives sought from making the investment & namely the financial commercial objectives generally sought by the private entrepreneur and the socio economic objectives supposedly sought by the whole society, they consist of the 2 following main categories where attempts to list the specific techniques devised are made :

Methods & Techniques for the appraisal of IIP from the financial/commercial point of view :

- the simple method of financial analysis referring to one year of operation at full capacity .
- the discounting (net present value) techniques concerned with analysing net cash flows over the whole life of the project & applying a discount factor to time .

Method & Techniques for the Appraisal of IIP from the Socio Economic Viewpoint :

- the OECD method also referred to as Little & Mirrless Methods is concerned with measuring the costs and benefits valuated with adjusted prices .
- the UNIDO Method for measuring the socio economic returns and summarized in UNIDO Guidelines also suggesting use of accounting prices other than the current prices .

The "effects method" attributed to its proponents from e chervel & mainly concerned with taking into account the forward & backward effects produced by the IIP in the appraisal of its expected results etc..

While the Methods & Techniques proposed for the financial appraisal of IIP are applied with no controversy, the ones advocated for appraisal of IIP from the socio economic view point are not yet generally applied for the following reasons :

- the complexity of the socio economic objectives & the difficulty to express them & bring them down to a commor qualifiable denominator.
- the relative complexity in the methods and the non availability of the skills Decision makers about checking the attainment of the socio economic goals at the appraisal stage .

As a result, in compromise to the foregoings, the methods and techniques devised for appraisal of IIP remain essentially those applied for checking the commercial/financial viability and until the socio economic expected returns from IIP are to be seriously taken into consideration by decision makers, project analysis are lead to make use of the same methods & techniques applied for financial analysis and appraisal & extended to some of the economic criteria & namely the value added, the national rate of return etc .

b) The Criteria for Appraisal:

The criteria established for the Appraisal of IIP are drawn essentially from the ultimate objectives sought from the investments, mostly concerned with the Optimisation of returns and consist essentially of 2 categories :

• Criteria for Measuring Commercial Profitability :

The rate of return criteria established on the basis of simple methods of financial analysis of one normal year of operation at full capacity , and namely the fate of return on investment, the rate of return on equity capital .

- the cut off rate of return (IRR) established with the application of discounting techniques and the present values methods over the whole project life and namely the internal rate of return (IRR) equally for total investment and equity capital.
- the criteria of net present value (NPV) of the project returns minus costs over the whole life of the project.
- the payback period criteria etc .

Criteria for Measuring Profitability of IIP from the Socio Economic Viewpoint :

- the "National Value Added" criteria is applied for a normal year of the IIP operation at full capacity without discounting and for the whole life of the project with discounting .
- the foreign exchange Savings Criteria also applicable for a normal year of operation and for the whole life of the project etc.

SUMMARY NO.2 ON:

THE APPRAISAL OF MARKET STUDIES

(MONDAY, 17 FEBRUARY, 1986)

From the review analysis of the coverage and the role played by market studies in industrial investment projects planning (IIP) in the decision making phase in general and in the appraisal phase in particular, the following aspects were revealed:

1. Characteristics

Market studies are among the most fundamental and essential "Support Studies" requested for sound IIP planning for the following reasons and they are pre-requisites for IIP planning in the decision making phase for the appraisal of IIP in particular:

- a) It is on the basis of the potential markets for the industrial project products that the investment project proposed production capacity is established.
- b) It is on the basis of the project's potential sales that the viability of the project can be confirmed.

Final adequate appraisal of the market aspects of the IIP prior to decision making is of ultimate importance and would require the adequate professional skills on the subject matter in order to hedge against slipping of mistakes therein.

The salient features of the appraisal consist essentially of ascertaining, in the following sequence, the factors listed hereunder :

- a) The product specifications, characteristics, uses etc.

- b) The total actual and future market demand broken down where applicable to local market demand and export markets.
- c) The potential market demand (broken down where applicable to local and export) normally drawn from the difference between the total market demand in item (b) above and the installed as well as the planned production capacities, representing the gap to be filled by the IIP under appraisal and others.
- d) The IIP proposed/considered sales prices and the international sales prices for comparison/appraisal.
- e) The marketing policies and sales strategies envisaged for the IIP, the distribution channels, media etc.
- f) The sales programme.
- g) The IIP potential sales and their consistency with the items given in (c), (d), (e) and (f) above.
- h) The IIP envisaged production capacity and its consistency with the items listed in (f) and (g) above and others.

2. Objective Purpose

Of the appraisal of demand and sales aspects is essentially two folds:

- to allow for the determination of the IIP production capacity in consistency with the market potential the IIP market share and sales forecast.
- to base the appraisal of the IIP ultimate returns resulting from the expected sales on solid grounds.



Methods and Techniques

Different methods and techniques are applied to different situation; they are tentatively summarized in Annex-VI & VII of "UNIDO Manual for the Preparation of Feasibility Studies" for further reference.

SUMMARY NO.3 ON:  
APPRAISAL OF TECHNO-ECONOMIC ASPECTS  
(TUESDAY, 18 FEBRUARY, 1986)

From the review analysis of the subject matter whose nature, scope and coverage, objective purpose, methods and techniques requirements are summarised hereunder, the following was revealed :

1. Coverage and Scope

- The techno-economic aspects of IIP are concerned with ascertaining that the right technical components and elements of the IIP are provided and that they are adequate with the technical and economic objectives.
- The achievement of the IIP technical and economic feasibility is a function of the project components and their costs.
- The appraisal of the techno-economic aspects is a critical analysis of the various technical components of IIP and of their respective costs.
- The appraisal is concerned with all the components required for making possible the production envisaged for the project whose scope and depends on the market studies, the appraisal report of the market as well as other aspects of the project.
- The scope of the appraisal covers the whole life of the project where the timing and scheduling of its execution and production phases

is equally checked.

2. Objective/Purpose of the Appraisal

- To ascertain that all components required by the IIP are provided for the production of the expected goods.
- To ascertain technical efficiency of the components and their consistency with the IIP product specifications taking into account for each component, the established economic efficiency criterion for selection.
- To ascertain that cost effectiveness of the components is taken as the main criteria for selection of the components proposed for the project taking into account the overall policies and objectives set by the authorities concerned with the investment.
- To ascertain that technology is selected within the framework of the objectives of the project.
- To ascertain that the project implementation timing is set at right time target and that scheduling and programming of the implementation project execution of the IIP is realistic.
- To ascertain that the adopted procurement, implementation, organization and contract strategy meet with the implementation objectives set by the parties concerned.

3. Procedures and Techniques

- Base the appraisal on the data provided in the full fledged feasibility study and the subsequent appraisal report keeping in mind the overall policies and procedures established by the authorities.
- Check and ascertain the adequacy of the data provided and indentified.
- Prepare the appraisal report in a standard form with the standard worksheet and tables established for the evaluation of the IIP components (see summary no. 6).

SUMMARY NO.4 ON:  
THE APPRAISAL OF IIP COMMERCIAL AND ECONOMIC VIABILITY  
( WEDNESDAY, 19 FEBRUARY, 1986)

From the review analysis and discussion of the subject matter, the following was revealed :

1. Appraisal of IIP Commercial and Economic viability is primarily concerned with determining the performance and results expected from the IIP under consideration.
2. The results expected from the IIP are the outcomes of the benefits and costs which constitute the components of the IIP and scope of the appraisal and namely the production operation costs and the investment costs.
3. The timing of the appraisal is a priori and it covers the whole life of the project and namely the preinvestment phase where preinvestment studies are normally carried out, the implementation phase and the production operation phase.
4. The objective purpose of the appraisal is to express the results expected from the IIP into the established performance measures which correspond to the criteria set by the authorities for decision taking and project selection.
5. The methods and techniques employed consist in the following:
  - a) Valuation of the IIP various components consisting of the following major groups:
    - the sale revenues, which are to be extracted from market studies and the appraisal report on the market and demand aspects, and to be tabulated and formatted in local and export sales ( if

applicable) for further processing.

- the investment costs which are to be extracted from the feasibility study reports and the appraisal report on the technical-economic aspects of the IIP and to be tabulated into the respective schedules and formats designed for the purpose, in accordance with the timing of expense occurrence and with their nature (local versus foreign currency).
- the production and operation costs covering, materials supplies overhead costs and financial costs also to be extracted from the feasibility studies and respective part of the appraisal reports and to be tabulated in the respective tables and formats designed for the purpose.

- b) Determination of the performance measurements and criteria for selection on the basis of the valuated data and their specific computations and tabulations which will be required for the extraction of the criteria in question and namely, the financial rates criteria (and namely the nominal rates of return on investment and on equity capital) arrived at on the basis of the results of a normal year of operation at full capacity and the internal rate of return "IRR" arrived at from the tabulation of cash flows over the whole life of the project and the discounting techniques both required for appraisal of the commercial as well as the economic profitability of the IIP. The value added criteria and the economic rate of return required for the appraisal of the IIP results from the national economy point of view.
- c) Appraisal of the IIP on the basis of the results achieved and the criteria above mentioned and their consistency with those policies and strategies established from the outset for IIP decisions.

6. In view of its utmost importance in investment decision taking, the appraisal of IIP commercial and economic viability needs to be carried out systematically on the basis of the following :

- the preinvestment studies (feasibility and support studies) required.
- the specific appraisal reports on the market and techno-economic aspects.
- the other means required such as the standardised formats and tables for the calculation and computations needed or the computer models and programmes designed for the purpose by Specialised Agencies such as the UNIDO Feasibility Studies Section, "COMFAR" -Computer Model for Feasibility Analysis and Reporting.
- the adequate skills required.

SUMMARY NO. 5 ON:  
INVESTMENT DECISIONS TAKING, AND THE METHODS APPLIED FOR  
DEALING WITH RISK AND UNCERTAINTY  
(SATURDAY, 22 FEBRUARY, 1986)

From the review analysis of the matter, the following was revealed:

1. Investment decisions are normally taken on the basis of the appraisal findings and results normally expressed in the criteria established by the authorities for IIP selection.
2. The criteria for selection constitutes the standard yardsticks for IIP performance and results and they partly reflect the strategy chosen for selecting IIP and for measuring the ultimate objectives sought from making investments.
3. The criteria for selection suffers from 2 major limitations:
  - a) They do not reflect the ultimate objectives and goals sought from IIP because of the following:
    - \* the complexity of the objectives and the difficulties encountered in bringing them down to a common denominator; and
    - \* the limitations of the methods and techniques proposed for appraisal in consistency with the objective sought and namely cost benefit analysis, the effect methods etc.....which are not yet easily applied in developing countries.
  - b) The criteria for selection are subject to interference of risks and uncertainties for



the following reasons :

- \* the criteria are established on the basis of the tabulation of the cash flows generated by the projects under consideration, which in turn are determined by the valuation of the project major components and namely the sales and the production costs (variable and fixed) which constitute the major sources of uncertainty.

- \* the reasons for such uncertainties and risk occurrence are attributable to the following:

- . the fact that such variables will occur in the future where imperfect knowledge of the future situation is a major cause of uncertainty.
- . the fact that IIP will be operating in very complex environment where factors might change unpredictably (product demand and consumer behaviour might change, technological change might occur, socio-economic conditions may be altered, etc...).

4. The methods and techniques for dealing with uncertainty and risks in investment decisions taking can be summarised in the following:

- a) The payback method which is often employed by multinationals and private corporations and investors in the developed part of the world because it allows to hedge against the occurrence of risks in the far future, is of little or no interest in the case of development projects where the limitations of the method and the long implementation and gestation periods makes it non-applicable and non-useful.

b) The break even analysis method can be relied upon for assessing the safety margin and the level of risks from the determination of the BEP. The higher the BEP, the bigger is the risk and this will lead to carrying out the analysis a step further to hedge against, erroneous decisions, and to carry out sensitivity analysis.

c) The sensitivity analysis method permits to show the impact of the possible valuations of one or more of the IIP variables upon the criteria of choice and to inform the decision taken about the alternative results which might be attained.

Alternatively, the sensitivity analysis method can better be applied to the break even analysis where variations in the variable will allow to determine new levels of BEP and therefore to indicate new levels of risk and uncertainty which might need to carry out the analysis to a step further and to lead to probability analysis.

d) Probability analysis is a costly process and it is a useful tool for further checking of uncertainties in making decisions. However, its applications are carried out only upon specific request.

5. In spite of the obvious limitations observed in the criteria for selection of IIP, sound decision taking would still require the translation of the IIP expected results into the performance measures or the criteria for selection referred to above and to carry out the sensitivity analysis in order to deal with the interference of risk and uncertainty therein, and this

at the last step of the appraisal of the  
IIP just preceding the decision taking stage.

SUMMARY NO. 6 ON:  
IIP APPRAISAL REPORTS PRODUCTION  
(SUNDAY, 23 FEBRUARY, 1986)

From the review analysis of the subject matter, the following was revealed :

1. Appraisal reports of IIP are documentary outputs of the exercise of appraising the IIP major aspects concerned with -

- \* marketing sales and distribution aspects
- \* techno-economic, engineering and implementation aspects
- \* financial and economic profitability aspects
- \* general economic and administrative managerial aspects

which all constitute the coverage and scope of the appraisal, tentatively summarized in the list of contents attached in Annex-I to this summary sheet.

2. The objective purpose of the Appraisal Report is to put down in writing as concisely as possible all the details about the IIP components results expected from the appraisal exercise, in order to allow for taking the decisions on written evidence and sufficient knowledge about the facts and results.

3. The procedures proposed for Appraisal Reports writing production will be as follows :

- a) to ascertain that all pertinent data and information related to the IIP components are properly covered

in the Appraisal Report by the Specialists concerned.

- b) to allow for fair coverage of all the IIP components tentatively outlined in the table of content proposed for the Appraisal Report and attached in Annex-I to this summary.
- c) to provide for the adequate professional skills required for appraisal of each one of the various aspects of the IIP, and other means (basic documents and data feasibility studies, market studies etc.)
- d) to entrust the writing of the various parts of the Appraisal Report to the Specialists concerned each one with his own competence and the overall coordination and editing to the IIP coordinating officer.
- e) to accompany the Appraisal Reports with all the Standard Tables formats and schedule used for the valuation, appraisal of the IIP, under study.
- f) to include in the Guideline for Appraisal Report writing all the details envisaged and reproduced in the proposal annexed to this summary in order to ascertain full coverage and to avoid possible omission including the carrying out of sensitivity and risk analysis which is to be added to the Guidelines as in the case of IDB.

4. The authors of the Appraisal should be the specialists required for the Appraisal and namely -

- the Industrial Economist/Financial Analyst assisted eventually by the Market Specialist and/or
- the Industrial Engineer and eventually an Industrial Technologist.

ANNEX : Proposal for the Contents of the Appraisal Report .

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Introduction .

- . Nature of the Report, Scope & Coverage
- . Objective purpose
- . Ways & means provided
- . Authors Composition and Terms of Reference
- . Timing

PART ONE : Background information

CHAPTER ONE : General economic & environmental aspects

CHAPTER TWO : Specific information on the IIP history  
(checklist in page 34 of UNIDO Manual)\*

PART THREE : Appraisal

CHAPTER ONE : Market & Sales aspects (38)\*

CHAPTER TWO : Technical & economic aspects

I) Production Capacity and Production Programme ( )\*

II) Materials & inputs (71)\*

III) Location & site (83)\*

IV) Project Engineering (98)\*

V) Manpower and labour (129)\*

VI) Implementation Schedules (141)\*

CHAPTER THREE : Organizational and Institutional Aspects (123)\*

CHAPTER FOUR : Financial & economic aspects

I) Valuation of the IIP Components (Investment, Depreciation, Production)

II) Computation & determination of criteria for selection .

III) Appraisal of the results consistency with the established Criteria & objectives .

PART FOUR : Sensitivity and Risk Analysis

PART FIVE: Conclusion and Recommendations.

\* - Check lists of the items to be covered are detailed in UNIDO Manual indicated pages .

SUMMARY NO : 7

On monitoring and reporting on IIP in the implementation and production phases. (Monday 24 and Tuesday 25 Feb. 1986)

1. GENERAL INTRODUCTION .

To fit into the overall context of planning for development, which was taken as a base for the workshop on the industrial investment project planning in the decision making phase in general & in IIP appraisal in particular, monitoring of investment projects during the implementation and production phases shall be approached from the same perspective and the findings and conclusions can be summarized as follows :

- 1.1. In view of the evolving nature of the environmental conditions , the exercise of investment project appraisal for sound decision making & for checking its consistency with the objectives sought is to be continued and carried out at the post approval stage also and this in conformity with the prevailing principle of regarding the evaluation exercise as a continuous phenomenon in development planning and the project development cycle.
- 1.2. The purpose of postevaluation of investment projects may be :
  - a - to ascertain that the goals set from the outset are adequately achieved
  - b - to undertake the appropriate and necessary actions for goals achievement through written investigations and measures .
  - c - to benefit from the findings of the evaluation in the form of feedback for the improvement of decision making and IIP appraisal .
- 1.3. As to the procedure for post-evaluation it is essentially the same as the one prescribed for evaluation of the project, the variation being the environment and the nature of data used for evaluation.

In the post-evaluation exercise, the data used is real and actual and it is normally extracted from the real life of the project and included in the monitoring reports and documents, normally produced from the monitoring activities which nature objective and produces for establishments are tentatively outlined in the following paragraphs .

2. MONITORING

2.1 Definition and Character .

- Monitoring a management information system is to describe a framework to collect and analyse information and this events associated with this implementation of a policy or programme for the purpose of ;
  - . providing timely information on the success / failure of policy programmes and projects .
  - . providing the necessary information to assess the achievement of the project objectives .
- Monitoring is thus a contineous task which has to be exercised during the project period with which we are concerned. In this context it differs from post evaluation which is undertaken when implementation has been completed .
- Monitoring can not prescribe management action . It provides information on the changes that can be observed to be submitted to management for eventual diagnosis and action .

2.2 Objective / Purpose .

- To provide management with timely information on where the project stands (risk areas) measured against a pre-set reference (appraisal report) of the implementation/ production phases upon which management can make diagnosis for actions ie. early warnin; system .
- To provide management with information which through the process of diagnosis will provide insight into the efficiency and the accoutability of project performance as well as a feedback of learning for improved project appraisal for decision making .

2.3 Methods and Techniques .

Prior to monitoring systems design the following questions must be clarified :

- . What should be measured ; agreement as to the issues to be measured .
- . For whom should it be measured ; identification of the users is crucial for users perceptions .
- . For what should it be measured ; agreement as to the use of the information to determine the sensitivity and degree of accuracy .



- . How should it be measured ; statement as to whether a measurement really indicates a change
- . How should data be collected ; establish the necessary degree of confidence in data collection.
- . When and in which form is information needed ; agreement as to the timeliness and scope of reporting .

When these questions have been clarified the rule of thumb indicates simple indicators on a timely basis as basis for monitor systems design. A prerequisite for successful monitoring systems operations is the establishment of a disciplined control and data environment. The enclosed example Table 7.1. can be viewed as an illustration of how project expenditure and physical implementation can be monitored through the submission of periodic project implementation reports.



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TELEX 135612

WORKSHOP ON IDB/UNIDO INDUSTRIAL PROJECT

APPRAISAL AND MONITORING

15 - 26 February 1986

Islamic Development Bank  
Jeddah - Saudi Arabia

EVALUATION - GROUP TRAINING PROGRAMME

1. OBJECTIVES OF THE WORKSHOP

The essential objective of the workshop which just finished was to help the participants to improve their expertise concerning economic and financial evaluation of industrial projects and monitoring their implementation and operation.

(a) In your opinion, was this objective achieved?

YES .....

NO .....

(b) Comments

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2. EVALUATION TECHNIQUES COVERED IN THIS WORKSHOP

In the following table you are asked to give your judgement on certain evaluation techniques which have been used during the workshop. Firstly, you should indicate whether these techniques are important in the application of your regular work. Then you are asked to comment on the level of the contents.

TECHNIQUES	Usefulness for your work				Level of Contents		
	Not Useful	Fairly Useful	Useful	Too Low	Appropriate	Too High	
Review analysis of the procedures applied in industrial investment project decisions & of the criteria for selection and financing; presentation, review analysis & findings.							
Appraisal of market studies: sources of information on markets, methods & criteria for assessing assumptions, forecasting techniques, pricing etc.							
Appraisal of technical & economic aspects of industrial investment projects: plant size, selection of technology, availability and suitability of raw materials & utilities, skills, layout, engg./costing, procurement, implementation, managerial organizational aspects & other inputs required.							
Appraisal of the financial and economic aspects of industrial investment projects; -Financial appraisal: valuation of investment, operating costs & sales & appraisal method (cash flow generation & DCF appraisal method, balance sheet analysis etc.) -Economic analysis, methods & techniques							
Review analysis of the methods for checking uncertainties & risks in investment decisions & their consistency with the established criteria of choice.							
Appraisal reports: format, contents & review analysis of their consistency with the established procedures.							
Financing procedures, monitoring techniques & means provided in the implementation phase: presentation, review analysis & findings.							
Follow-up procedures & reporting in the production phase.							

3. The diverse subjects discussed during the seminar were presented in a certain sequence. Was this sequence logical or would you have preferred that some subjects were placed earlier or later than others?

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.....

4. What is your opinion on the co-ordination of the contents between the course modules?

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.....

5. What is your opinion on the level of the subjects discussed in the workshop?

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6. Considering the diverse subjects dealt with in the workshop, what is your opinion on:

(a) The length of the course period?

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(b) The distribution of time among the different modules?

.....  
.....

7. What are the new things you have learned from the workshop?

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8. What is your opinion of the teaching material?

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.....

9. Was the workload of the workshop:

(a) Heavy? .....

(b) Reasonable? .....

(c) Light? .....

10. Would you kindly make comments and suggestions which you judge appropriate and which may help to improve future workshops.

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11. Other comments and remarks.

Is further training necessary and what should it cover?

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