



**TOGETHER**  
*for a sustainable future*

## OCCASION

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



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

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

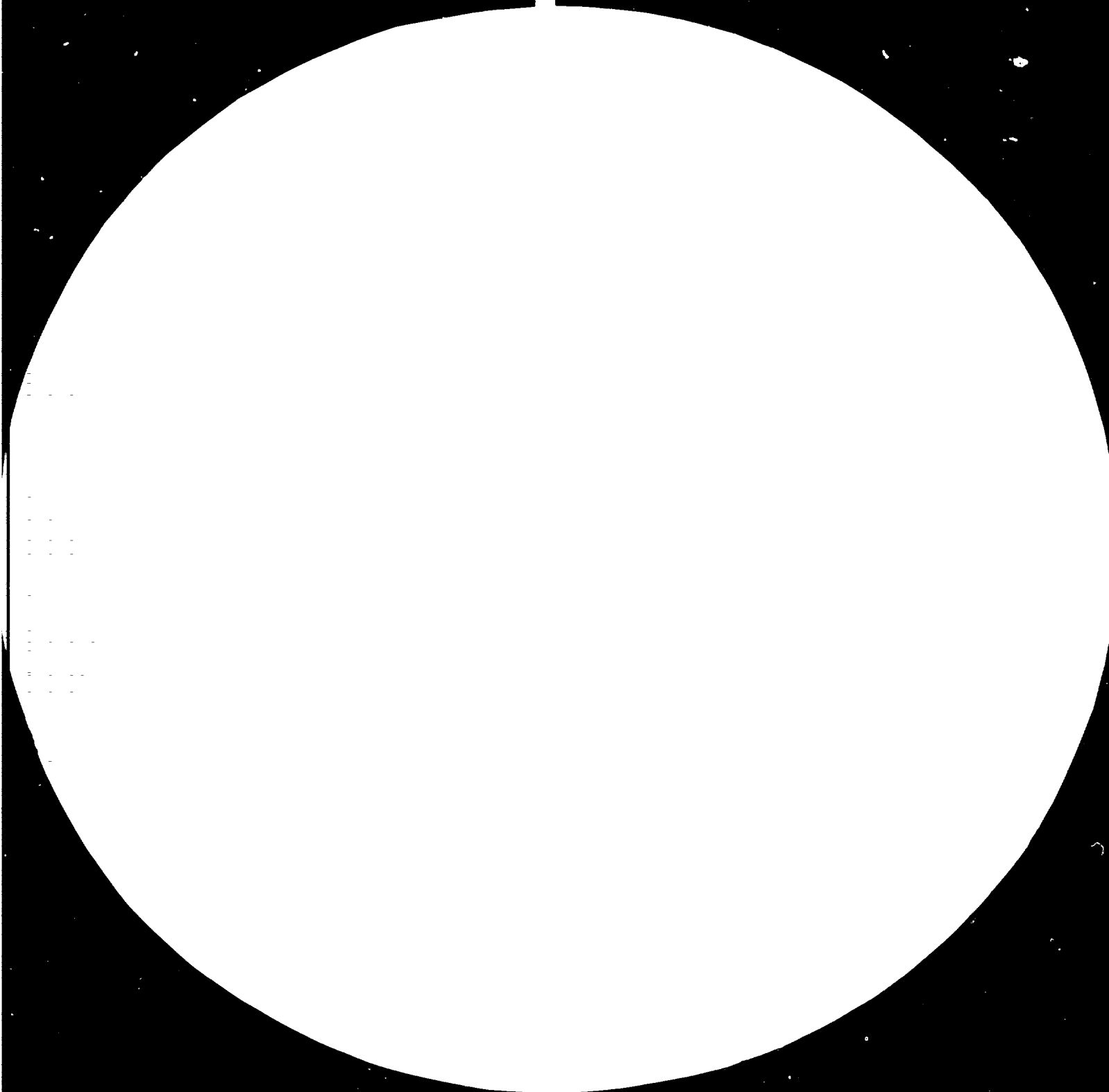
## FAIR USE POLICY

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

## CONTACT

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

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





RESTRICTED

11576

DP/ID/SER.A/355  
1 April 1982  
English

INDUSTRIAL PROJECT PREPARATION, EVALUATION  
AND IMPLEMENTATION

DP/TUR/79/024

TURKEY

Technical report: Preparation and appraisal of public  
investment projects submitted to the  
State Investment Bank \* ,

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

Based on the work of Jean Barnerias, UNIDO Consultant

003067

United Nations Industrial Development Organization  
Vienna

---

\* The views expressed in this paper are those of the author and do not necessarily reflect the views of the Secretariat of UNIDO. This document has been reproduced without formal editing.

NOTES

ABBREVIATIONS

DYB	State Investment Bank Devlet Yatirim Bankasi
SEEs	State Economic Enterprise
SPO	State Planning Organization
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Programme
SIDFA	Senior Industrial Development Field Adviser
JPO	Junior Professional Officer

SEMANTIC

In UNIDO usage there is no difference made between project appraisal and project evaluation. DYB tends to rather use the word appraisal and UNIDO uses the word evaluation with the same meaning. There is also no difference made between commercial and financial evaluation, though some authors see commercial evaluation as being rather from the standpoint of the entrepreneur and financial evaluation rather from the standpoint of banks.

SUMMARY

The purpose of the expert's mission was to "study the methodological concepts and existing procedures currently used within the State Investment Bank (DYB) and towards the State Economic Enterprises (SEEs) in the field of project preparation, in order to suggest improvements; and suggest proposals how to improve the procedures between DYB and the SEEs in relation to investment projects". The General Director of DYB clarified that the work of the expert should concentrate on the preparation of investment projects in the SEEs looking at the procedures and the methodology, and on the project appraisal procedure and methodology within DYB, and that the expert was expected to make recommendations with a view to establishing a system by which sound studies would be received from the SEEs and sound appraisal methods would be used by DYB.

The mission was implemented in August-September-October 1981 as a component of the UNDP/UNIDO project DP/TUR/79/024 "Industrial Project Preparation, Evaluation and Implementation". In his investigations the expert interviewed engineers, economists and financial analysts in DYB, SPO and several SEEs.

The findings were the following:

- Project studies from SEEs suffer from various deficiencies and the SEEs are also unequal in their capacity to produce adequate studies. In general the commercial/financial evaluation and the national economic evaluation are the most deficient parts of the studies.
- The main reasons for these deficiencies are that as a rule the project studies are not prepared by teams of economists and engineers and that project ideas are transformed without proper transition into (so-called) feasibility studies.
- DYB operates a training programme which is successful, and trained about 700 SEE people (However, half the number was subsequently lost, mostly to the private sector).
- Projects are endorsed by the State Planning Organization (SPO) without systematic evaluation. Only partial criteria are used, not the net contributions of projects to aggregate consumption.
- DYB, in its appraisal reports, do not evaluate projects from the national economic standpoint, except for projects submitted to the World Bank which are evaluated according to World Bank guidelines, and in some cases when partial criteria were used. In commercial/financial evaluation DYB is using a traditional approach by which net profit is first calculated, and then the net cash flow.

The recommendations closely correspond to the findings, namely:

1. In preparing investment projects SEEs should (a) use a team approach with the participation of economists besides engineers, (b) progress by stages from project ideas to opportunity studies with consideration of alternatives, then to pre-feasibility studies with consideration of variants, and finally to feasibility studies, (c) conduct adequate evaluations from both the commercial/financial and the national economic standpoint.
2. DYB can assist the SEEs through a consultancy service to alleviate the shortage of qualified personnel in some SEEs and the lack of sufficient market and technological data. In particular DYB has the required competence and personnel to assist in the preparation of the financial and economic aspects of project studies.
3. DYB training programme on project preparation and appraisal should be continued. It can be further improved by (a) addressing smaller groups, especially splitting the course into one for economists (and financial analysts) and one for engineers; (b) reducing the number of lecturers, having a course director, revising some training methods, and making the course more participative and practice oriented; (c) reducing the length of the programme by eliminating or reducing peripheral and non-essential subjects.
4. For commercial/financial evaluation, a slightly different approach is proposed which would directly determine net cash flow as a basis for evaluation. Sensitivity analysis will be systematically carried out with the help of computer provided by UMDP/UNIDO assistance.
5. DYB and SPO should co-operate to establish a co-ordinated, efficient evaluation procedure. SPO interest will be getting some feed-back from projects for planning purposes. DYB would evaluate all projects from the national economic standpoint, using parameters provided by SPO. Projects submitted to the World Bank could continue being evaluated by the World Bank approach. For all other evaluation, the UNIDO Guidelines method is recommended because: (a) The UNIDO method is comparable to the World Bank approach which is familiar to DYB; (b) the UNIDO method uses a unit of account which is basically the same as the one used in the financial accounts so that there is a better liaison between the two sets of accounts than in the World Bank approach which uses a foreign exchange equivalent; (c) the UNIDO method can be implemented in successive stages which makes it easier to apply and subsequently develop gradually to higher stages of sophistication. The systematic evaluation of SEE projects from the opportunity study stage onwards will ensure that only projects beneficial to the national economy will be proposed by SEEs, endorsed by SPO and financed by DYB.

CHAPTER ONE

1.1 INTRODUCTION AND BACKGROUND INFORMATION

Terms of reference of the mission

The terms of reference of the mission are contained in job description DP/YUR/79/024/11-01 Consultant in Project Preparation and Appraisal (it is reproduced in Annex 1). However, the job description is for a 9-month assignment which was subsequently split into two assignments for 3 and 6 month duration respectively. Consequently this mission of 3 months was designed to cover only part of the duties. This being taken into account, we have the following description of the job.

- Title: Consultant in Project Preparation and Appraisal

- Duration: 3 months

- Duties: The expert will assist the State Investment Bank in improving the capabilities of the State Economic Enterprises to prepare well-studied projects. For this purpose, sound methodologies and procedures are needed. Specifically, the expert is expected to:

- 1) Study the methodological concepts and existing procedures currently used with the State Investment Bank and towards the State Economic Enterprises in the field of project preparation, in order to suggest improvements;
- 2) Suggest proposal how to improve the procedures used between the State Investment Bank and the State Economic Enterprises in relation to investment projects;
- 3) Participate eventually in training courses conducted by the State Investment Bank in the field of project preparation and evaluation.

At a first meeting with the expert the Director General of the State Investment Bank specified that in his view the mission should concentrate on two aspects, viz.,

- 1) The preparation of investment projects by the State Economic Enterprises, looking at the procedures and the methodology, and 2) Project appraisal within the State Investment Bank.

He added that the mission should make recommendations in order to establish a system by which sound studies would be received from the State Economic Enterprises, and sound appraisal methods would be used by the State Investment Bank.



The UNIDO assistance programme

The mission is part of the UNDP/UNIDO programme DP/TUR/79/024 "Industrial Project Preparation, Evaluation and Implementation" of assistance to the State Investment Bank for the purpose of upgrading the processes of identification, preparation, evaluation and implementation of industrial projects. This will be mainly achieved through the further development of (a) training facilities at the State Investment Bank for the staff of the State Economic Enterprises and (b) consultancy services in the Bank for the Enterprises.

More specifically the proposed UNIDO assistance will permit the Bank (a) to develop a training unit able to provide better and extended training for personnel employed in the government sector in all areas of investment and business operations, (b) to offer assistance to the State Economic Enterprises in their identification and preparation of projects, through the provision of information and advice, and (c) ensure that improved techniques are effectively applied in project preparation, evaluation and management.

The assistance programme is justified by the fact that the 29 State Economic Enterprises (which include the State Investment Bank itself) play an important role, by their productions and their investments, in the economy of the country. Currently, the State Investment Bank is the only bank in the country which extends long-term investment credits for financing investment projects of the State Economic Enterprises. The State Development Bank is in particular the channel by which World Bank credits (and other international credits such as from the European Investment Bank) reach the State Economic Enterprises. The efficient use of scarce resources in the economy depends on well-prepared projects as well as their proper appraisal and implementation. Since the preparation of investment projects and their implementation is primarily the responsibility of the State Economic Enterprises, a better fulfilment of these tasks will contribute to the best use of scarce investment funds in the economy and ensure the timely repayment of loans extended by the State Investment Bank.

Through the assistance programme, UNIDO is providing training equipment for the training courses in project preparation and evaluation. The courses of a duration of 8 or 9 weeks, were started in 1968 and have been held once a year. Thanks to the new assistance received, these courses will now be held twice a year starting in 1981. Other seminars for senior managers and professional courses are also contemplated, and there is a provision for fellowships and study tours.

The provision of international experts include:

- Post 11-01. Consultant in project preparation and appraisal for 9 months, now split into two parts: (a) a first mission of 3 months to survey current practices in project preparation and appraisal, and suggest improvements; (b) a second mission of 6 months for the purpose of setting up the UNIDO computer programme to be used for project preparation and appraisal.

- Post 11-02 Consultant in financial management for 6 months whose task will be to assist in improving the project implementation effectiveness of the State Economic Enterprises.

- Post 11-03 Consultant in management information systems for 3 months whose task will be to assist in the development of an internal (within the State Investment Bank) and external (between the Bank and the State Economic Enterprises) management information system for use in the preparation, appraisal and implementation of industrial projects.

#### Implementation of the mission

The expert started his mission in Ankara in early August 1981 by meeting Mr. Narasimhan SIDFA, and the Miss Mine Buldam project coordinator at the State Investment Bank. The first week was used in perusing documentation available in English and meeting several staff members (engineers, economist, financial analysis) of the State Investment Bank. The meeting with Mr. Tarik Kivanc, General Director of the Bank was very useful in clarifying the direction and scope of the expert's investigations.

For all matters requiring the knowledge of the Turkish language, the expert received valuable assistance from Mrs. Ipek Keskin, financial analyst. Acknowledgements are also due to several other staff members of the Bank for discussing and clarifying some aspects of the Bank's work both on the factual and methodological levels.

All investigations were carried out and completed in 6 weeks from the middle of August to the end of September. They included visits to a number of State Economic Enterprises and to the State Planning Organization, and extensive discussions with the Staff of the State Investment Bank.

The expert made a presentation on 16 October to the DYB seminar on project preparation and evaluation, under the title "Role and activities of UNIDO and other international organizations in project studies and financing". The mission in the field was completed at the end of October 1981. The results of the mission were reviewed at UNIDO headquarters in Vienna on 2 November, and in Bradford (England) on 4 November with Mr. Majumdar the expert designated to take over post 11-01 for the next 6 months.

During all the time of his mission, the expert benefited from the advice and/or assistance from the UNIDO SIDFA Mr. Narasimhan and the JPO Mr. Goossens, and the facilities provided by the UNDP office in Ankara.

In his preliminary investigation of available documentation, the expert consulted three reports of experts who preceded him in the field and who touched on the same subject: they are the reports by Mr. Lucock, UNIDO expert, Mr. Kastengren, OECD expert and Mr. Cullen, OECD expert.

Mr. Lucock's Report

Mr. Lucock's mission (UNIDO assistance) was implemented in 1979 and he made investigations regarding the possible role of DYB in the implementation of investment projects of the State Economic Enterprises.

The report communicated to us is entitled: "Public sector investments and the roles of the State Investment Bank and the State Economic Enterprises". It was written by the expert together with two staff members of the Bank (namely Mr. Necati Ozkan and Miss Ayse Ercanli).

After reviewing the current process of investment selection, the report notes that this selection process is not working well as revealed by the unsatisfactory economic performance of the SEE's taken as a whole. This state of affairs points out to deficiencies in project preparation, project implementation and operation. The report is concerned with the first two aspects.

In order to remedy the situation, the report suggests that:

- DYB should be involved earlier in the selection process by co-ordinating its actions with the SPO and assisting the SEE's in the provision of data, work on projects, and training.
- Concerning the provision of data and direct assistance in project preparation, the report recommends the establishment within DYB of an independent Consultancy and Research Unit which would in particular conduct sub-sectoral studies, identify promising areas for investments, and assist in project preparation and promotion.
- Concerning training, the report recommends an extension of the training activities of DYB. To that effect it recommends the establishment of a separate training group and the diversification of training courses in order to reach various levels of people (including managers) and adapt to various backgrounds. On the last point, it tentatively suggest to split the project preparation course into two sections: one for economists and one for engineers.
- Concerning the follow-up of projects, the report recommends that the DYB does not only monitor the financial implementation but takes an active part in all aspects of implementation and provides the necessary assistance whenever required.

It appears from the report that the poor results often noted in implementation are due to a large extent to the insufficient preparation of the projects. In an appendix the reports also list the reasons for the difficulties encountered in project implementation. The three main reasons, as stated in the report, are: lack of qualified personnel, the lack of technical know-how, and faulty estimates. Faulty estimates in turn are like to deficiencies in project preparation, cost analysis, and financial appraisal.

Mr. Kastengren's Reports

Mr. Kastengren, an OECD expert, was twice in Turkey on a split mission, the first part of which in the period 3 November - 5 December 1980 and the second part in the period 22 April - 13 June 1981. He wrote two reports dated 2 February 1981 and 13 June 1981.

The terms of reference of his mission were to: (a) study the existing situation and advise on the structure of the newly-established Research Unit in the DYB, and on the nature and scope of the activities which the unit should undertake; (b) develop an external and internal information system that will lead to data collection and information systems; (c) promote the sectoral researches and advise on the techniques and methods to be employed, and establish a reporting system; (d) study the existing project follow-up procedure of the DYB and advise on possible ways of improvements.

Since the work of the Research Unit will be mainly related to project preparation and appraisal, Mr. Kastengren's report of February 1981 contains interesting findings and recommendations in that field.

According to the report, the project preparation and appraisal procedure takes the following course: (a) Investment proposals by the SEEs must first be endorsed by the SPO. They are then submitted to the DYB "in the form of a feasibility study for the project"; (b) the appraisal in the DYB is executed by a team composed from the appraisal groups, usually one economist/financial analyst who handles the financial/economic appraisal, one engineer, and one junior economist. During the appraisal, the team discuss with the SEE for supplementary information and also with SPO and eventually ministries or learned institutions. The appraisal is to be completed within two months from the submission date. The appraisal report is then submitted for approval to the Board of Directors of the Bank. After approval, the appraisal report is passed on to the Finance and Credit Directorate of the Bank which prepares the contract with the SEE involved.

Mr. Kastengren's recommendations concerning project preparation and appraisal are:

(a) Concerning procedures: DYB should become involved in project discussions with the SEEs at a very early stage, and should be in a position to endorse a project which it is supposed to finance even before SPO approves its inclusion in the Plan. An early involvement of DYB in a project proposal from an SEE will allow the Research Group of DYB to assist in the preparation of the feasibility study and its subsequent appraisal. The Research Group would collect basic data or even prepare support studies.

(b) Concerning the appraisal methodology: An appraisal check-list should be prepared as a valuable tool to support the appraisal team. The check-list would be standardized and printed, and would place due emphasis on the most important facts and points to check. Moreover, the office routines for project preparation and appraisal should be presented in a flow-sheet showing the time spent in each action, the purpose of which would be to introduce possible short-cuts and time-savers in the procedures.

On the subject of cost-benefit analyses, Mr. Kastengren notes that they are not fundamentally within the preview of the Bank, but should normally be carried out by SPO as components of its planning process. However, DYB may be of assistance with these analyses and has actually started such exercises. In the opinion of the OECD expert, the Research Group will be instrumental in providing and up-dating the national parameters and other data necessary for cost-benefit analysis.

Mr. Kastengren's report also contains interesting information about the role and importance of DYB in the economic public sector. In 1980 DYB handled loan accounts totalling the equivalent of about one billion US dollars, which amount included loans from IBRD and EIB channelled through DYB. Roughly one half of total yearly investments in Turkey are made in the public sector, and about one half again of public investments are undertaken by the 29 SEE's. The larger part of the SEE financial requirements, including coverage of operation losses, is supplied from the budget through the Ministry of Finance, or special government funds. Some other part is financed directly from foreign sources. DYB finances only about 15% of SEE requirements. SPO prepares basic data for SEE yearly investments and calculate the amount of loans which DYB is entitled to disburse. The number of investment proposals, either new projects or extensions, which DYB has to process yearly is of the order of 70 to 100. The loans extended by DYB are almost exclusively directed to industry.

The second report of Mr. Kastengren, dated June 1981, consists of several short documents which are intended to serve as guidelines for the work of the Research Unit. Other documents propose formats for DYB supervision reports for project implementation.

#### Mr. Cullen's Report

Mr. Cullen's mission to Turkey (split mission: 15-28 March and 12-25 April 1981) was implemented under OECD assistance. His report of May 1981 is entitled "Recommendations to improve the present project preparation and appraisal seminar and to enable the State Development Bank to give a project management training course".

The terms of reference of the mission specify that he was to:

- examine the training methods of the Project Preparation and Appraisal Seminar, and advise on any ways they could be improved;
- determine the content, duration, training methods, level of training, etc. for a course on project management for the DYB and SEEs staff, and recommend what training the DYB trainers should receive to be able to give this course.

Mr. Cullen being a management expert, the main emphasis of his report is on project management, meaning here the management of the implementation of a project. However, the part of his report dealing with the DYB training course on project preparation and appraisal contains a number of valuable observations and recommendations.

According to Mr. Cullen, the strengths of the DYB course appear to be that: the course meets a need and is well regarded, with the consequence that there are more applications than places available; the programme is not too heavy (about 5 hours lecturing daily) thus leaving time for individual study; comprehensive notes are issued which fill five binders and seem well presented.

However, there are several areas where the course could be improved, namely: the organization and conduct of the course should be stricter; the room is too small for 65 people, the group should be reduced in size; training aids have recently improved thanks to UNIDO-provided equipment, however the blackboard is rather small; the sequence of topics is not logical mainly because of unavailability of instructors at the convenient times; there are too many instructors, for instance in the latest course 18 DYB staff and 11 outside specialists acted as instructors; most of the instructors have little knowledge of training methods and requirements.

As a consequence, Mr. Cullen recommends that: the course be conducted by a full-time course leader who can pitch in and lecture in case an instructor is unavailable; instructors receive some instruction in training methods, and help in adapting their lectures and using available visual aids; the number of trainees be reduced to 25 in order to make the course more participative; the content and sequence of material be improved.

Mr. Cullen notes that the course in Bradford to which the 20 best trainees were sent (of which no more than 4 from DYB) seems to have largely duplicated the DYB course. However, recently its programme was adapted to the Turkish trainees background, so as to make it more suitable for advanced training.

## CHAPTER TWO

### CURRENT PRACTICES AND PROBLEMS

#### A. PROJECT PREPARATION

##### Current Procedures for project preparation and submission

The first selection of new projects is normally made by and within the SEEs concerned. The projects selected by the SEEs are then submitted to SPO with a copy to the controlling ministry. The ministries usually do not intervene in project selection or approval. In some cases SPO suggests the projects and requests the SEEs to prepare the corresponding feasibility studies. SPO checks whether the projects are in line with the overall objectives of the Plan (economic and socio-political), and the financial possibilities, and also that a balance is maintained between various industrial branches. The projects retained by SPO are entered into the 5-year plan and the yearly programmes. The projects, thus endorsed by SPO, which are stated for DYB financing with the concurrence of the Ministry of Finance, are then submitted to DYB for appraisal.

Submissions to SPO are made in the form of feasibility studies (or sometimes pre-project formats) written according to agreed standard outlines. Submissions to DYB should be in the form of the feasibility studies according to the DYB outline. The SPO and DYB outlines for feasibility studies are similar, and the usual practice is for the SEEs to submit the same document both to SPO and DYB. Actually, however, DYB has been receiving project proposals which vary in form from bulky studies at one end to mere sketches of a few pages at the other end of the scale.

If DYB finds that it cannot finance a project submitted to it, then a commission is formed to try to find some agreement. The commission is composed of representatives of the SEE and the ministries concerned, DYB, and SPO, the last one acting as a co-ordinator. The Treasury, which is part of the Ministry of Finance, can finance an SEE project rejected by DYB.

##### SPO and DYB formats for project preparation

SPO provides two formats for the preparation of projects and their submission. The preferred one relates to a feasibility study. However, if a feasibility study is not yet available, a pre-project format may be used.

The SPO pre-project format has the following outline (source: Papers of the 11th DYB Course):

- Justification and main features of the project, liaison with existing plans and programmes, benefits expected
- Cost of fixed investment and working capital (not in detail)
- Timing of investment
- Estimated labour force needed for construction

Characteristics of the plant: technology, raw materials, operation costs, etc.

- Financial resources needed: national financing and foreign financing
- Value added expected
- Effect of project on balance-of-payments
- For continuing or expansion projects, add information on (a) location, (b) investment expenditures already made.

The SPO and DYB formats for a feasibility study are similar. Both formats, are reproduced in the Papers of the 11th (1979) DYB Course. The differences, when any, are minimal. It will suffice, therefore, to consider the DYB format. It is a detailed format of 38 pages including explanations and directives. Its outline is as follows:

A. General Data

B. Market Study

1. Definition of products
2. Information on, and analysis of, market
3. Demand forecasts

C. Capacity and plant site

1. Choice of capacity
2. Choice of plant site

D. Technical aspects

1. Technical definition of the project
2. Preliminary studies
3. Production technology
4. Products, by-products and effluents
5. Machinery and equipment
6. Plant lay-out
7. Civil engineering
8. Erection of the plant
9. Technical assistance, patents, know-how
10. Required inputs per unit of production
11. Trial runs and start-up
12. Timing of investment (with bar chart)

E. Investment cost

1. Estimates of fixed investment and working capital
2. Distribution of investment over time
3. Financing of the project

F. Receipts and expenditures in operating period

1. Total cost  
Capacity utilization, raw materials, auxiliary materials, energy, depreciation, water, labour, licenses and patents, repairs and maintenance, overhead expenses, production tax, interests, sales expenses
2. Unit cost  
unit operating cost and unit selling cost
3. Annual profits  
distinguish whether a new project, expansion, modernization, renewal of equipment, removal of bottleneck.



G. Financial evaluation

1. Pro-forma income statement
2. Cash-flow table
3. Profitability of the project (net present value)
4. Break-even point
5. Other evaluation criteria
  - a) internal rate of return
  - b) benefit-cost ratio (discounted)
  - c) pay-back period
  - d) debt service coverage ratio

H. Economic evaluation

1. Value added
2. Effect on balance-of-payment
3. Employment effect
4. Investment, production and net profit per person employed
5. Other benefits of the project
  - a) International competitiveness
  - b) Benefits to the consumers
  - c) Effect on income distribution
  - d) Regional development

In its outline DYB adds two optional chapters, namely:

I. Financial analysis of the operating company

1. Current ratio
2. Own resources over external resources
3. Own resources over capital
4. Net profit over capital
5. Net profit over own resources
6. Net profit over sales

J. Organization

1. Type of organization
2. Organization chart
3. Other investments related to the project

Problems in project preparation

a) As seen from the DYB standpoint

The experience of DYB is that most of the project studies received are insufficiently elaborated. Part of the required information is usually missing. In extreme cases, the documents submitted are very thin and the project studies have to be done practically by the Bank. In other cases the project studies may be bulky and seemingly complete but may include unreliable data which make it necessary to largely redo the studies. It was noted, however, that projects prepared by experts who attended the DYB training courses, are usually better elaborated than the others, and that over all the trend is upwards. Much, however, remains to be done.

Even when the studies are well elaborated originally, financial figures have to be up-dated because of the time-lag between the first submission to SPO and the final submission to DYB. As a rule, projects are not up-dated by the SEEs, the same studies which were submitted to SPO being submitted later to DYB without modification. As a result, the studies received by DYB are, to a certain extent, obsolete.

b) As seen from the SEEs standpoint

The following difficulties were felt by the SEEs in preparing projects:

- Data on markets are difficult to find. Needed statistical data are lacking or insufficient. As a result the analysis of markets and especially estimates for the future cannot be based on sound foundations. This is true for markets within Turkey and even more so for markets abroad. The uncertainties are not only in the size of demand but also on future prices.
- Technology data also are in short supply. In this respect the situation differs widely among the SEEs. Some SEE's specialised in well defined sectors (such as cement and petrochemicals) have no special problem in this search while other SEEs responsible for a variety of productions may experience great difficulties in obtaining the necessary technological information. SEEs have made use of various sources including the UNIDO technological information service, but reportedly response has been usually slow and the information when provided was found to be less than what was hoped for.
- Another problem is the shortage of personnel. In many cases, projects are prepared mainly by one engineer or one economist, and not by a team. The quality of the studies would of course improve if more diversified manpower could be assigned to each project. The training provided by DYB in project preparation is usually considered very useful, but unfortunately some of the trained personnel have left the SEEs in order to take up better paid employment in the private sector. There is therefore a continuous need for trained personnel.

c) As seen from an examination of SEE project studies

In addition to the preceding notes, an examination of SEE project studies suggests the following remarks:

- The feasibility reports faithfully follow the general outline provided by SPO and DYB. We have even seen a report which was prepared in Turkish according to the normal outline and in English according to the outline of DYB appraisal reports for the World Bank.
- In size and detail, the reports shown to us ranged from 50 to 230 pages including the annexes. The sizes of the reports did not seem to vary proportionately to the sizes of the projects.
- The financial/economic part seems to be generally weak. The text is usually very short and refers to calculations to be found in tables. The results are rarely commented upon and evaluated. Some reports leave the impression that the significance of the evaluation criteria was not well grasped. This seems to be especially true for national economic evaluation and concepts such as value added, suggesting that these reports were not prepared by economists.

- Forecasts are usually made at constant prices because the SEE project departments have no usable forecasts about prices (relative prices).

#### DYB Training of SEE Personnel

In 1968 DYB initiated a training course on project preparation and appraisal. Until 1981 there has been one course per year. The course has been very successful and there have been more applications than available places in the course in spite of the fact that up to 65 trainees were accommodated in the latest sessions. Because of this success, DYB is now planning to hold the course twice a year. The 13th course held in February - April 1981 is being followed by a 14th course which started on 21 September 1981 and is still run while this report is being completed.

The DYB course is scheduled for a duration of nine weeks. Its programme is comprehensive, covering elements of macro-economics, market study, demand forecasting techniques, choice of technology, financial estimates, financial analysis and appraisal, economic evaluation, and implementation of projects. Altogether this comes to more than 200 hours of lecturing by a variety of speakers from DYB and outside. The detailed programme of the 14th course is shown thereafter.

Thanks to the course a total of over 700 people have been trained in the techniques of project appraisal and evaluation, of which some 60 were from the bank's staff and the remaining from SEEs staff. Most of the persons interviewed in the SEEs during the UNIDO expert's mission had gone through the course

#### PROGRAMME OF THE 14TH STATE INVESTMENT BANK'S SEMINAR ON PROJECT PREPARATION AND APPRAISAL

(16 February - 18 April 1981)

	<u>Duration in hours</u>
<u>1st week</u>	
1. Basic economic concepts and the working of the national economy	3
2. The State Economy Enterprises in the context of the national economy	3
3. Relations of investment projects with the development plan and annual programmes	3
4. Project concept and project development	3
5. Turkish projects in the context of the European Economy Community	3
6. Follow-up of projects by the central planning authorities	3
7. Project management	3
8. Incentives to investment and export projects	3
<u>2nd week</u>	
1. Investment and Development Banking	3
2. Project feasibility study: DYB project model	3
3. Environmental problems	3

	<u>Duration in hours</u>
4. Market study	3
5. Techniques of demand forecasting	6
6. Regression analysis	9
<u>3rd week</u>	
1. Linear programming	6
2. Selection of location	6
3. Choice of Capacity	3
4. Marketing	3
5. Search for financing and financial policy	6
<u>4th week</u>	
1. Calculation of fixed investment	12
2. Operating expenditures	9
3. Choice of technology	6
<u>5th week</u>	
1. Financial estimates: receipts and expenditures	6
2. Financing programme and cash balance	6
3. Working capital	6
4. Pricing and revenues	3
5. Break-even analysis	3
<u>6th week</u>	
1. Implementation programme	6
2. Concept of average unit cost	6
3. Evaluation criteria: discounting techniques	3
4. Present value and internal rate of return	3
5. Evaluation techniques: a comparison	6
6. Choice among alternative investments	3
<u>7th week</u>	
1. Use of cash flows for evaluation	9
2. Expansion, renovation, modernization projects	6
3. Engineering study	6
4. Risk and uncertainty	6
<u>8th week</u>	
1. Sensitivity analysis	6
2. Evaluation under rapid inflation	9
3. Principles of national economic evaluation	6
4. UNIDO and Little Mirrlees methods	6
5. IBRD method	3
<u>9th week</u>	
1. Programme budgeting	3
2. Follow-up of investment projects	3
3. Use of computers in project evaluation	3
4. Capital market in Turkey	3
5. International financing	3
6. Discussions of a typical case	12

B. PROJECT APPRAISAL

Appraisal by the State Planning Organization

The establishment law states that SPO shall prepare 5-year development plans and yearly investment programmes and that it shall evaluate the investment projects of the State Economic Enterprises, which must send their proposals to SPO. The projects should be evaluated in the light of the 5-year plan objectives, and the accepted ones are entered in the yearly investment programmes. The evaluation should essentially be made from the standpoint of the national economy with the constraints of the investment possibilities.

The Paper of the 11th (1979) DYB Course indicate what evaluation criteria have been used by SPO in the past and now. In the past, SPO used the following criteria: the capital-output ratio, the internal rate of return (financial and economic), value added related to investment, and a social cost-benefit ratio. The last one, defined as the ratio between the present value of benefits to the present value of costs, should be larger than one for a project to be acceptable. And, of course, the project with the largest benefit-cost ratios will be preferred. At that time the social discount rate was taken as 12%, which is in line with the experience in other comparable developing countries.

According to the same source, SPO now uses only partial criteria which are:

- value added (presumably related to investment)
- employment effect
- net gains or savings in foreign exchange
- investment, production and net profit per employee
- competitiveness vis-à-vis EEC

A test inquiry performed by the expert confirmed that only these partial criteria are used, with the following remarks: (a) as concerns competitiveness vis-à-vis EEC, SPO checks whether the project is above the minimum economic capacity for the industry concerned; (b) the net gains or savings in foreign exchange are not compared with the domestic resources used in order to obtain them. It was also found that energy consumption (quantity, type and origin) is also an important consideration, for instance domestic lignite or coal is currently favored over fuel oil.

The appraisal of SEE projects is made in the Economic Planning Department of SPO. The department produces demand projections, on the basis of which SPO quite often requests SEEs to prepare projects. They are indications that existing demand is underlying main criterion for project selection within the framework of a policy of import substitution with little consideration of cost. Normally, existing demand should be only a pre-requisite for the project, while its evaluation would be done on the basis of the economic rate of return. SPO is currently unable to calculate economic rates of return because no shadow price for foreign exchange or labour has been defined, nor a social discount rate.

The task of the SPO examiners is made difficult by the number of projects submitted to them and by the unequal value of the studies. Though the rule is that the evaluations made by SEEs should first assumed to be correct, in practice many mistakes are found in the conception and calculations of the project, so that many have to be revaluated.

Appraisal Procedure in DYB

Besides personnel and general services headed by the Secretary General, DYB is divided into two main directorates, namely the Projects Directorate and the Finance and Credit Directorate, each headed by an Assistant General Director. The general organization of the Bank is as follows:

General Director

- Assistant General Director  
Projects Directorate
- Assistant General Director  
Finance and Credit Directorate
- Secretary General  
Personnel, General Services,  
Translation, Library

When projects are submitted to the Bank they go to the Projects Directorate where they are first considered by the Heads of the various groups within the directorate in order to assign each project to an appraisal group and constitute a team for its appraisal.

The organization of the Projects Directorate comprises the following groups:

- Group 1: Appraisal and Follow-up
  - Group 2: Appraisal and Follow-up
  - Group 3: Appraisal and Follow-up
  - Group 4: Technical Appraisal, Follow-up and Research
  - Group 5: Appraisal, Research and Training
- Common Services for filing, typing, etc.

Groups 1,2,3 and 5 are filled with economists and/or financial analysts. All the engineers are in Group 4. Projects are first examined in their technical aspects by the Technical Aspects Group. They are then taken over by one of the appraisal groups who look at the financial and economic aspects of the projects. The findings and results of the examinations make the substance of appraisal reports which are written in accordance with the DYB Guidelines for Review and Appraisal. The appraisal reports (which are usually positive) indicate the terms of the loan and the schedules of disbursements and reimbursements. The reports are then transmitted to the Finance and Credit Directorate of the bank for action.

Each year thereafter the borrower have to submit to the bank up-dated reports on their projects on the basis of which the appraisal groups are writing review reports. The review reports are prepared every year before disbursement of loans are authorized for that year. These reports follow the same pattern as the appraisal reports, but they are usually shorter. They check and up-date prices and all the financial figures. Usually the national economic evaluation is not repeated.

Among the appraisal groups, Group 3 takes over the projects which are financed with World Bank or European Investment Bank funding. For these projects, the appraisal reports are first written in Turkish for the Bank's internal work and then translated into English for transmission to the international bank concerned.

The reports intended for the World Bank follow about the same pattern as the normal ones for domestic use, but national economic evaluation is added and carried out according to the World Bank's "Guidelines for calculation of economic rates of return on Development Finance Companies sub-projects".

#### DYB guidelines for review and appraisal

The DYB "Guidelines for Project Review and Appraisal" (70 pages) were published in 1974 and continue to be used by the staff of the bank as a working guide. The introduction is worth quoting:

"Project review and appraisal is one of the main activities of the State Investment Bank which was founded (in 1964) to finance the investments of the State Economic Enterprises. The efficient functioning of the bank is largely dependent on the outcome of this task. Since the project preparation is not sufficiently developed ... the bank assumes not only the function of review and appraisal of the projects which it will finance, but also the function of development and improvement of project preparation techniques ... The foundation law states that the bank is to appraise the investment projects mainly from the financial standpoint. However ... for a sound financial evaluation, the data on which the study is based must be reliable. As this can only be examined by means of economic and technical analyses, the bank has been making economic and technical appraisals of projects since the beginnings".

The outline of contents of the Guidelines is as follows:

1. Introduction
2. Supply and demand
  - international market
  - domestic market
  - demand projections
3. Price analysis
4. Selection of location (region and site)
5. Capacity of the plant
6. Production process
7. Investment cost and implementation plan
8. Technical and economic life, salvage value
9. Financing of investment
10. Operating expenditures and revenues
11. Financial tables
12. Financial appraisal of the project
13. Economic appraisal of the project
14. Appraisal under risk, uncertainty and inflation
15. Determination of loan conditions

The appraisal reports of the bank follow this outline with some minor changes as will be seen below. Both the organization of the material and the explanatory text are compatible with the UNIDO Manual. In this respect the more interesting chapters are 11 and 12.

The three main financial tables (Chapter 11) are the "pro-form income table", the "sources and uses of funds table", and the "pro-forma balance sheet". They correspond to the financial statements traditionally required by industrial development banks, the formats of which can be seen in Annex VIII of the UNIDO Manual. The net cash flow for evaluating the project (Chapter 12) is calculated from the first two tables.

Concerning the profitability of the projects, the Guidelines note that, according to the foundation law, the Council of Ministers can decide that projects which are not "rentable" may obtain DYB loans if the economic conditions of the under-developed regions warrant it. In this case, the repayment of the loan is guaranteed by the Treasury.

Chapter 12 mentions the repayment period, the debt coverage ratio and the break-even point as criteria for appraisal but strangely makes no reference to the profitability criteria based on the cash flow (net present value is mentioned in Chapter 14) though the latter ones are always used in the appraisals by the Bank.

Chapter 14 tackles the problem of project evaluation under inflationary conditions. Two cases are distinguished, viz. neutral and non-neutral inflation. "If there is neutral inflation which does not change relative prices, two methods can be used: (a) one presents revenues and costs in constant prices and then applies the discount rate that would be appropriate if there was no inflation and proceeds to find the net present value, or (b) one presents revenues and costs at the prices expected to prevail in the period in which they will be realized and then applies a discount rate which fully accounts for inflation. Both methods would give the same result, the choice to be made is only a matter of convenience ... If inflation affects relative prices, costs and revenues are adjusted by different inflation rates and the discount rate to be used in the net-present-value calculation is also adjusted so as to consider the inflation rate".

Chapter 13 deals with economic evaluation. It rightly states that "economic appraisal covers the examination of the various effects of an investment project on the economy; in other words, it is the process of determining the contributions of the investment project to the development targets". It recognizes that there are differences between the net benefits regarding the enterprise and those regarding the national economy because market prices do not reflect real economic values. The chapter then lists the evaluation criteria which are either single factorial criteria or compounded ones.

Single factorial criteria measure the contribution of the project to the national economy on the basis of a single benefit or factor.

They are:

- Effect on national income measured by value added (gross or net)
- Employment effect measured by the capital/employment ratio. The two problems with this ratio are that it differs whether calculations are made at market or shadow prices, and labour is not an homogenous factor (skilled and unskilled).
- Foreign exchange affect: measured by the net gain or saving in foreign exchange (The Guidelines do not explain that the cost in domestic resources at which the net gain in foreign exchange is obtained is actually the true criterion).
- Regional development effect
- International competitiveness of the project vis-à-vis foreign markets, particularly the European Community.

A compounded criterion is arrived at either (a) by giving weights to single factorial criteria in order to be able to add up the various effects, or (b) by calculating the project social return on the basis of the discounted cash flow after making suitable adjustments. These adjustments consist in: eliminating transfer payments, adding external effects (positive or negative) and using shadow prices especially for foreign exchange and labour. The explanations given in this chapter are rather vague, but the method proposed is in line with both the UNIDO and World Bank guidelines.



### DYB Appraisal Reports

a) Contents and outline

The contents of the appraisal reports are organized to a well defined outline which is as follows:

Summary

1. Introduction
2. Market study
3. The project
4. Appraisal results
5. Terms and conditions of the loan

The summary contains: general data on the project, cost of investment, financing of investment, profitability of the project and repayments, financing proposals and conditions of the loan. The summary ends with a one-page presentation of the project's main features in tabular form.

The introduction recalls the origin and history of the project and its place in the development programme of the SEE concerned.

The market study contains information on the definition and characteristics of the product(s), the demand and supply on the domestic market and (if need be) on the international market, and the prices of the output(s) and inputs.

The Section on "the project" is usually the main one. It covers:

- purpose of the project, capacity and site
- production process, flow chart
- inputs
- outputs, and implementation plan
- technical and economic life, salvage value
- cost of investment
- financing of the project
- revenues and expenses in the operating period
- cash flow table

The section on evaluation results is usually very short. It indicates the financial rate of return of the project. The reports intended for the World Bank also calculate an economic rate of return measuring the contribution of the project to the national economy.

The last section on terms and conditions of the loan is also usually very short. It contains the programme of disbursements and repayments and stipulates the amount and timing of interest payments.

b) Financial evaluation

In the financial tables, the unit of account is not precisely specified, but reportedly it is understood to be the monetary unit (Turkish Lira) of the date at which the report was written. The matter is left somewhat vague when only the year of the report is shown and not the month at a time when the currency is rather volatile. After the investment estimates, however, there is

also a table of financial requirements showing the investment amount at the prices of the base (report) year to which are added price escalations to account for inflation. The purpose of the table is obviously to show actual financial requirements in each year in the monetary unit of that year. This means that the figures in the table (except for the first line) are expressed in current monetary units of each year. The next table is the "financing plan" which shows, again in current monetary units, the sources of finance, i.e. equity and various loans.

The next table is the "proforma revenue and cash flow table" which covers only the operation period. The investment and operation periods are finally brought together in a "table for the calculation of financial rate of return". These two tables are shown hereafter.

The three evaluation criteria calculated are:

- a) the net present value: it is calculated by discounting the net cash flow of the project (before and after tax) at a rate equal to the weighted average of the interest rates to be paid on the loans.
- b) the benefit/cost ratio: it should be positive
- c) the internal rate of return: it should be larger than the weighted average of the interest rates to be paid on the loans.

The financial appraisal also rests on a risk criteria which is the debt service coverage ratio. It is calculated for the period of repayment of the loan by considering the net cash flow after tax (net profit plus depreciation + interest payments) and dividing it by the total of reimbursements and interest payments (not discounted).

Proforma income and cash flow table

1. Project revenues
2. Project expenses (depreciation included among expenses)
3. Project profit
4. Interest payments
5. Profit before tax
6. Tax
7. Disposable profit
8. Depreciation (added back in)
9. Total funds
10. Loan reimbursements
11. Cash balance
12. Cumulative cash balance

Financial Profitability Calculation

1. Cash outflow
  - Investment cost
  - Working capital
2. Cash inflow
  - Project revenues
  - Project expenses (minus)
  - Working capital recovery
  - Salvage value
3. Net funds
4. Discount factor
5. Discounted value
  - Net present value
  - Benefit/cost ratio
  - Internal rate of return

c) National economic evaluation

The appraisal reports intended for the World Bank also contains an "economic" appraisal of the projects. The economic appraisal is conducted according to the methodology laid out in the World Bank "Guidelines for calculation of economic rates of return on Development Finance Companies sub-projects". It is a simplified approach, suitable for practical application, which aims at calculating the contribution of the projects to aggregate consumption. The approach is very similar to the method of the UNIDO Guidelines for Project Evaluation, the main difference being in the choice of the accounting unit (numeraire).

Briefly speaking, the World Bank simplified approach involves the following main adjustments (to the financial accounts):

- deletion of transfer payments such as income tax
- valuation of imported equipment and imported input at their c.i.f. prices
- valuation of exported output at f.o.b. prices, and output replacing imports at the c.i.f. prices of replaced imports.
- valuation of non-tradeable goods by use of a general conversion factor which is the average ratio between domestic prices and border prices for the same or equivalent items.

- valuation of unskilled labour at the opportunity costs of employing such labour.

When the adjustments are completed, all resources flows are measured in foreign exchange equivalents expressed in domestic currency at a stated (official) exchange rate.

In practice, the DYB appraisal reports will make adjustments in:

- **Fixed investment:** Imported machinery and equipment are valued at c.i.f. prices. Domestically procured machinery and equipment, and construction work are multiplied by a general conversion factor. The value of this conversion factor in the studies examined ranged from 0.6 to 0.9. Import duties and other taxes are eliminated.
- **Operating expenditures:** Raw materials, and other material inputs are taken at their financial values if not subject to international trade. Imported inputs are valued at c.i.f. prices. Taxes are eliminated. Salaries or skilled labour are multiplied by 0.8 to eliminate a 20% tax. Wages of unskilled labour are adjusted by the general conversion factor as above.

On the basis of adjusted figures, the appraisal reports then calculate an economic rate of return in the same way as an internal rate of return was calculated for financial evaluation.

## CHAPTER THREE

### PROPOSALS FOR IMPROVEMENTS

#### A. PROJECT PREPARATION

##### Procedure for project preparation in the SEE's

A large part of the problem of project preparation, in the SEE's is related to the manner in which the project studies are prepared. We see two main points to discuss, namely the team approach and the development of a project idea into a feasibility study.

##### a) Team approach

Though the situation varies widely from one SEE to another, one widespread reason for the insufficiencies noted in studies is the lack of team approach to the problem. From experience in many countries it has been found advisable to have project studies conducted by teams of experts. When a study is entrusted to an engineer alone, he will tend to neglect demand analysis and financial analysis and may not be familiar with the significance and intricacies of national economic evaluation. On the other hand, an economist, unaided by an engineer, will have difficulties with the technical aspects and will not be in a position to propose alternative engineering solutions.

The members of the team should be selected so as to cover the major substantive aspects of the project. Large and complex projects may require the services of a market analyst, a specialized engineer, a civil engineer, a financial analyst and an industrial economist. In most cases, a compact team of one engineer and one economist can suffice, provided they have access to complementary specialists. Even if one economist or one engineer is given the main responsibility for putting the study together, the members of the team should work in close cooperation with one another because the economic and technical aspects of a project are interrelated. The project studies which we have in mind here (and which often are loosely labelled feasibility studies) are primarily economic studies but their economic aspects cannot be separated from their technical substratum. There are some other studies of a supporting nature which may be purely technical (for instance ore analysis, soil analysis, pilot plant tests) and are then used as inputs to project studies.

Some SEE study departments do not employ economists, with the result that evaluation criteria are not well understood or calculated. For instance one project was submitted to SPO for approval even though its annual economic rate of return was shown to be only 4%. SPO reportedly endorsed the project because they recalculated the economic rate of return and found it to be higher. So there were both a misconception and a miscalculation. A misconception, because a project yielding a return of 4% on investment for the nation should not be submitted for SPO approval; and a miscalculation because SPO found a higher figure by recalculating the rate of return.

b) Development of a project

Another feature of project preparation in the SEE's is that project ideas seem to be immediately transformed into feasibility studies. By contrast, the UNIDO Manual for the Preparation of Industrial Feasibility Studies recommends to develop projects in several stages which are: identification of investment opportunities, preliminary project formulation and selection, final project formulation and implementation programme. To these stages correspond three studies which are: the opportunity study, the pre-feasibility study and the feasibility study.

The purpose of an opportunity study is to identify an investment opportunity or in other words transform a project idea into a broad investment proposal and to find out whether such proposal seems viable and warrants further study. If it does, the project must be elaborated in a more detailed study. This is the pre-feasibility study, which will determine the economic results to be expected and will allow to decide whether the project should be undertaken or not. The pre-feasibility study will look at possible variants of the same project and select the best one. Once the decision is taken to implement the project, the final feasibility study is undertaken. It is more detailed, uses precise quotations for estimating investment costs and contains a financing plan as well as an implementation programme.

These three stages are a happy compromise between (a) rushing hastily to a feasibility study without the benefit of preliminary selection and therefore without the possibility of redefining the project or contemplating alternatives, or (b) making too many studies without ever reaching the implementation phase. The development of projects along the recommended pattern ensures that proper choices can be made in both the technical and financial-economic aspects.

Concerning the technical aspects, the technical proposal develops from a sketch in the opportunity study to an elaborate proposal in the feasibility study, while the range of technical choice is diminishing from one stage to the other. This shows the importance of the earlier studies for the proper choice of technology and the proper technical orientation of the project. At the opportunity study stage several projects may be considered in relation to a few factors and criteria: markets, raw materials, economies of scale, foreign-exchange availability, labour. It is at this stage that the relationship between planning level and project level should be closest. At the next stage, which is the pre-feasibility study, the project is sufficiently well formulated as to permit good estimates of costs and revenues. Technical choice will be between variants of the same project. Some variants are directly in technique, but there are other variants in size, location, etc. which may indirectly bring about technological choices. The project variants will be appraised from both the financial and national economic standpoints in order to retain the most appropriate one. At the final feasibility stage, the range of technical choice is much narrower, being generally limited to a choice about types of equipment. At this stage, attention should be directed to specific local conditions and methods of costing, since the routine estimation of investment may occasionally lead to considerable errors when the investment is made in other physical and economic environments. When reaching the engineering stage, the project is technically well oriented thanks to the process of choice made in the three pre-investment studies.

Technical choices are closely linked to the financial and national economic evaluations of the project which have to be made in the three successive stages. Since the SEEs belong to the public sector, cost-benefit analysis (national economic evaluation) should be carried out at all stages to guide in making decisions about the choice of projects (and in particular the choice of technology) within the framework of government objectives. It is the most suitable tool of analysis to ascertain the consequences of adopting different production techniques. In order to take full advantage of this tool, it is necessary to develop projects according to the three recommended stages. This will ensure that the projects are designed for bringing maximum benefits to the national economy.

#### Expanded assistance by DYB

Several suggestions have already been submitted by previous experts for an expansion (i.e. increase) of DYB assistance to the SEEs. We will briefly discuss these suggestions and present some of our own.

##### a) Consultancy Service

The development of a consultancy service by DYB for the benefit of the SEEs was suggested in Mr. Lucock's and Mr. Kastengren's reports which we mentioned in Chapter 1 above. Such consultancy would cover both project preparation and project implementation. We will consider here only consultancy relating to project preparation. Such consultancy would be extended through a group in the bank diversely called Consultancy and Research Unit (Mr. Lucock) or Research and Intelligence Unit (Mr. Kastengren). There is currently in the Bank a group called Appraisal, Research and Training which deals with the organization of the training courses and which has carried out some research in fertilizers and cement. The management of the Bank would like to expand its research activities. It is desired that such research staff will participate part-time in appraisal work, and that appraisal staff will participate part-time in research activities.

From Mr. Kastengren's and Mr. Lucock's reports we gather an important activity of that unit or group should be in sectoral studies. In our view the main limitation will be in the possibility of hiring the staff needed for the purpose. Sectoral studies must be carried out by specialized industrial economists with good previous knowledge of their industries, or by engineers with similar extensive experience in the industries concerned. Such people will be hard to find, and, if found, to hire because they will need sufficient salary incentives. Another question will be the number of sectors to cover. Well defined sectors already covered by well funded SEEs could be left aside and the bank would concentrate on sectors which present difficulties of their own (machinery and equipment for instance) or in which operate SEEs lacking sufficient manpower or financial means. A last objection is that the main responsibilities for sectoral studies should lie with SPO. Actually, SPO is

conducting studies covering all the sectors whenever another 5-year plan is in the making. These studies unfortunately become rapidly obsolete, and the work of a specialist would consist in up-dating and complementing them. The point is whether the bank should substitute for SPO and to what extent. There is no doubt that this is a field in which some work should be done in order to produce market and technological data of practical use for project preparation. In view of the limitations and objections just mentioned, we think that DYB should act cautiously in the matter of sectoral studies, and if possible in co-ordination with SPO. Perhaps the best way to handle the subject would be to do it on a trial basis and, from there, see how it can develop.

A field of consultancy which may be more promising would be in the financial and economic analysis of projects. This is a matter in which DYB has considerable experience and is recognized as an authority. This type of consultancy will be easy to handle, all the more so since the bank has already got the necessary staff to carry it out. Because of current limitations on investments, fewer projects are being submitted to the bank, with the consequence that its financial analysts can spare some time for consultancy in their specialty. Moreover, whatever consultancy work is performed for the SEEs, will later save time and efforts when the projects come to the bank for appraisal. Furthermore, DYB could employ a market specialist to advise the SEEs in market studies.

DYB could also provide some consultancy in the technical field for preparation of projects in their technical aspects. Such interventions should be limited to the capabilities, in time and specializations, of the engineers of the bank. It would be unrealistic to see the bank becoming a technological centre. But its engineers could usefully advise by acting as "industrial engineers" in the English-American acceptance of the word. In particular, industrial engineers know how to relate the technical aspects of projects to the financial-economic aspects, they look for alternative or variants, and can advise on sources of data on technology and costs.

The engineers of the bank could be of help to the SEEs which have difficulties in finding relevant data on technology and costs. For this purpose, it may be advisable for the bank also to employ an industrial engineer specialized in technological information. He could advise the other engineers in the bank and the SEEs on sources of data, and help them in obtaining the desired information. The information when obtained would then be evaluated by the other interested engineers in the bank or the SEEs.

In the next Section on project appraisal it will be recommended that DYB also operates, or co-operates in, a data bank which will be useful not only for technological information but also for market data (demand, prices, cost of equipment, etc.). Market data is another field where some SEEs, if not most, have difficulties in securing reliable data and especially estimates for the future. A data bank will go a long way in meeting these problems.



Linked with the proposal that DYB operate a consultancy service for the SEEs, is the proposal that the bank should be involved at an earlier stage in project discussions with the SEEs. This point was emphasized in Mr. Kastengren's and Mr. Lucock's reports. We are ready to support it as being operationally desirable. However, we see two limitations : (a) First, Mr. Lucock's report notes that "the SEEs are more interested in the training of their staff than in the provision of services by an outside organization". This seems to mean that DYB offers for consultancy services may not be freely accepted by some SEEs or in some cases when feasibility studies are deliberately biased in order to make some projects look better. Such bias could not be introduced into the studies if DYB was participating in their preparation. We may note here that deliberate or involuntary mistakes are usually corrected in the appraisal reports of the bank; (b) The second limitation is that there may be some uncertainty as to what projects will be submitted to DYB for financing and when this is known. Obviously the bank cannot give assistance in the preparation of all projects and its consultancy should be limited to those projects which will come to the bank for financing. This is a purely institutional problem which must be clarified in order to define the conditions in which DYB could operate its consultancy service.

b) Training programmes

The bank's course (or seminar) on project preparation and appraisal has been very successful. It is considered very useful by the SEEs staff interviewed during the expert's mission. Part of the beneficial effect, however, was lost for the SEEs and the bank itself (but not for the country as a whole) because nearly half of the people trained left the SEEs to find employment elsewhere. The course should be therefore continued and even intensified, and if possible improved.

In this respect Mr. Cullen's report contains a number of valuable suggestions which deserve consideration, bearing on the number of trainees, training aids, sequence of topics, number of instructors and training methods. We suggest that both the organization of the course and its contents can be re-examined in order to find out how and where it could be made more efficient.

Concerning the organization of the course, we concur with Mr. Cullen that the number of participants, which had increased to 65 in the latest seminars, had become too large, in spite of holding two courses per year. The second course in 1981 which started on 21 September, groups 61 trainees. The experience in UNIDO is that any course beyond 30 is too large, while about 20 is considered a desirable size for effective communication with the trainees and their active participation in the activities of the seminar.

Another point to consider in the organization of the course is the method of training. Again speaking on the basis of UNIDO experience with seminars, it is advisable to have a course director. He should be conversant with the contents of the course in order to provide the desired continuity, and make the necessary liaisons between the parts taken by various lecturers.

The number of the lecturers should be drastically reduced from the total of 29 who participated in the 1979 seminar. Actually we think that 4 lecturers should suffice in a standard course covering, market study, technical aspects, financial analysis and cost-benefit analysis. Only a few more lecturers would be needed to cover forecasting techniques, management of construction (critical path), and case studies. If they have no previous experience in seminars, the lecturers should be instructed by the course director in basic training methods. For this purpose the core team should meet shortly before the course and harmonize their presentations. The course director should then attend most if not all sessions.

Training aids are just aids to the lecturers and the trainees, they cannot replace the lecturers or compensate for a lack of training ability. The latest equipment supplied by UNIDO should add to the interest of the course. However, the best training aid is a large mural board (black, green or white) of good quality. Such boards provide the best dynamic element in the course because it permits the lecturers to design and fill out financial and other tables with the simulated participation of the whole seminar. We think that the mural (green) board currently in the seminar room is too small and not good enough for the purpose.

Concerning the contents of the course, Mr. Cullen commented primarily on the sequence of topics which was found rather topsy-turvy. This was explained by the unavailability of various lecturers at the ideally required dates and the consequent juggling with the order of appearance. This difficulty would not occur if there were only a few core lecturers. In any case, it is necessary to keep a logical sequence for the presentation and discussion of the material. Even though in practice the making of a feasibility study is an iterative process, the presentation of the study should follow a logical outline. Though the outlines recommended by different institutions vary, they all basically follow the same pattern. A similar pattern, with a few additions, should be followed by the course.

After looking at the detailed contents of the 13th DYB course (see above) we got the impression that it covers too many subjects and in particular too many peripheral topics. Eliminating the peripheral topics would reduce the duration of the course to about one half of its scheduled 9 weeks. Moreover, it seems that an inordinate amount of time is spent even on the main subjects though we suspect that this includes time for exercises and case studies. Altogether our impression is that all the main aspects of project preparation and appraisal could be covered in a much shorter time by focussing on the essentials. The additions of secondary material does not reinforce the course. On the contrary it weakens it by diluting attention.

It is important to know for whom the seminar is intended. In Mr. Lucock's report there is the suggestion that the course should be split into two sections: one for economists and one for engineers. We think there is considerable merit in this suggestion, which will allow the course to be held for smaller and more homogeneous groups. The course for engineers would deal more particularly with the techno-economic aspects of feasibility studies (including sources of information on technologies, prices of equipment, etc.) and on the market aspects. The course for economists should include also the financial analysts and those with a background in management. It would focuss on commercial evaluation, financial analysis, national economic evaluation, and market research. Such courses are much more productive because they address groups with a common background and can go immediately to the core of the matter.

The subject of project implementation should be included at least in a brief form in the course on project preparation and appraisal. This is so because one chapter of the feasibility study covers implementation. It is necessary to have a sufficiently clear idea of the timing and cost of that phase of the project. The seminar intended for engineers could also deal with the technical aspects of implementation such as the pre-preparation of specifications, the evaluation of offers, contracts with suppliers of equipment, and management of construction (critical path). It is also possible to envisage a special seminar dedicated to the technical aspects of implementation.

Another suggestion put forward in Mr. Lucock's report was to have a seminar for managers at the director level. In our opinion, this suggestion should be considered. Our suggestion would be that such a seminar should cover project development since its inception until the start of operation, in other words it should cover project preparation, appraisal and implementation. The managers do not need to know the techniques in detail, but the significance, and relative importance of each phase, the type of work involved and the profile of personnel needed for these tasks.

## B. PROJECT APPRAISAL

### Co-ordinated appraisal procedure

#### a) Role of SPO

We have seen that SPO is evaluating the projects sent by the SEMs on the basis of partial criteria and is not in a position to calculate economic rates of return. In many instances the main criterion is existing demand and import substitution. One gets the impression that planning is still relying principally on physical targets with little consideration of costs, and that planning at the project level is still in a primitive stage. Projects are more or less defined in the overall plans and the sectoral programmes, but there is no feedback from the base. Actually, the Plan when published is already obsolete, and the same is true even of the yearly investment programmes. The whole planning mechanism is resting on a very weak project base.

The role which national planning could and should play in project formulation and evaluation, and the interrelations between overall planning and the project base are well described in the UNIDO Guidelines for Project Evaluation (especially pages 15-16 and 116-134). According to the Guidelines, the "Central planning organization" is sitting at a vantage point. It is best placed to issue consistent economic forecasts and indicate government priorities. These national parameters are either factual ones (like the marginal propensity to save, the marginal rate of return on investment, the equilibrium rate of exchange, the opportunity cost of labour) or value judgements (like the social rate of discount or regional distribution weights). The projects prepared and evaluated on the basis of these parameters will be submitted to the central planning organization which will now be in command of the very components of the overall economic plan. In accordance with the projects selected for implementation and then implemented, the central planning organization will modulate the national parameters, so that the planning process will be constantly adapting to reality and will tend to follow an optional path.

This pattern applied to SPO would mean that projects would be formulated on the basis of national parameters calculated by SPO. They would then be evaluated by SPO as to their contribution to the national economy on the basis of opportunity studies submitted by the SEEs. If the evaluation is satisfactory, the projects are maintained, or entered, in the plan. The effect of the projects will be more precisely calculated in the pre-feasibility studies which will be also submitted to SPO for confirmation of the costs revenues and net contribution of the projects. Ultimately, the final feasibility studies will inform SPO about the exact implementation and financing programmes of the projects. National economic evaluation should be carried out at all stages, either by SPO (especially at the opportunity stage) or by other institutions applying an agreed-upon methodology and communicating the results to SPO. In this way SPO will have a continuous feed-back from the projects and will be in a position to plan ahead and issue revised forecasts and parameters.

The results of SPO evaluations should be communicated to DYB for the projects to be submitted to its financing, and conversely DYB will evaluate projects according to SPO-issued parameters and communicate the results of its evaluation to SPO.

b) Role of DYB

DYB is currently evaluating projects from a commercial/financial standpoint and is carrying out national economic evaluation only for the projects submitted to the World Bank. In the latter case, the method of national economic evaluation is the one proposed by the World Bank in its directives to local investment banks.

We suggest that DYB could play an active role in a co-ordinated appraisal process with SPO. DYB would receive project studies sufficiently in advance and would evaluate all projects from a national economic standpoint and communicate the results of its evaluations to SPO. On the other hand, as mentioned above, DYB would expect to receive communication of the results of SPO's evaluations of the projects submitted to the bank for financing.

DYB consultancy activity with the SEEs would cover not only the field of commercial/financial evaluation but also that of national economic evaluation. The DYB specialists in national economic evaluation would perform their functions in the Research unit or group, but all financial analysts would also be trained in performing routine national economic evaluations under the supervision of the specialists who themselves would work in close co-ordination with their counterparts in SPO.

The assistance of DYB to the SEEs in project preparation will also apply to evaluation since both are intimately linked together, and evaluation is an important part of feasibility studies. The work of DYB in the field of sectoral studies and in the search for technological information, as well as the operation of, or participation in, a data bank will serve the dual purpose of project preparation and evaluation.

c) Data for evaluation

Establishing a serviceable data base for project evaluation should be undertaken through a close co-operation between SPO and DYB. The field of co-operation would include:

- Economic forecasting: This should be the main responsibility of SPO which is best placed for developing estimates of demand, prices of products, etc.
- Sectoral studies: It seems difficult for DYB to undertake sectoral studies in isolation for the reasons previously outlined, but this activity could be undertaken in co-ordination with SPO and other governmental and non-governmental agencies.
- National parameters: Would be the prime responsibility of SPO, but DYB would be one of the main users and would contribute to their up-dating through its own evaluations.
- Technical information: Necessary for the technical appraisal of projects. Linked to the data bank.
- Data bank: It will be especially useful for market data and technological data which are essential for evaluation work. By the same token the data would be of great interest for planning purposes. Another type of data needed will be on the cost structure of the economy and the cost of production factors.

The idea of a data bank is being seriously examined in DYB, but the conditions of its implementation remain to be determined. Association with SPO and other agencies or banks should be studied in order to achieve a larger data bank of greater value to all the users.

#### Methodological approach to evaluation

##### a) Commercial evaluation

DYB has a well established format for project evaluation which is following the traditional approach. Only minor improvements can be suggested. In what follows we propose a slightly different approach based on the UNIDO Manual for the Preparation of Industrial Feasibility Studies. This new, more modern approach sets about directly to determine the net cash flow of a project as a basis for its evaluation. It operates on simple resource accounting, while traditional accounting notions are needed only in some auxiliary calculations. Chapter 12 of the DYB Guidelines needs to be revised and completed, preferably along the lines of the approach suggested.

The main tables are:

- A cash flow table of receipts and expenditures for the life of the project (table 10.13 of the Manual) before a financing plan is made. This table will yield a net cash flow for evaluating the project in itself or, in other words, finding the rate of return on the total resources invested in the project.
- A cash flow table for financial planning (table 10.8/3 of the Manual). This table will permit a detailed and accurate financing plan for the project at the beginning, and will then show the amount of dividends available and the cash balance until the end of the project.
- A cash flow table of receipts, expenditures and outside financing (table 10.14 of the Manual). This table will yield a net cash flow for evaluating the project from the point-of-view of equity.

The auxiliary tables are:

- A table showing initial fixed investments and replacements, together with all preliminary expenditures (tables 10.1/2 and 10.2/2 combined).
- A table showing operating expenditures (table 10.3/1 of the Manual).
- A table showing receipts from sales (table 3.1 of the Manual).
- A table showing the calculation of working capital (table 10.3/2 of the Manual). The working capital schedule reflects the constitution of stocks and the amounts of accounts payable and receivable. Working capital makes up for any discrepancy between goods produced and goods sold and between goods sold or bought and goods paid. It also includes some cash in hand.
- A table for calculating corporate income tax (table 10.9 or better FP-1 of the Manual).
- A table showing borrowings, interest payments, and reimbursements (table 10.8/2 of the Manual).
- A projected balance sheet (table 10.10 or FP-3 of the Manual). This last table is not necessary for evaluation. It is used in the analysis of banking risk (ratio analysis) in conjunction with table FP-1 above.

The unit of account to be used in the financial tables needs to be clearly defined. In DYB practice it is the monetary unit at the time of writing the report. We see no objections to this. We suggest, however, to refer to constant TL and not to constant prices, since prices, even expressed in constant TL, can change over time.

The treatment of inflation in DYB is limited to the calculation of financial requirements and the establishment of a financing plan in current TL. This is a simple but fair way of dealing with inflation and we see no reason to change it provided that (a) the monetary unit is clearly defined, and (b) the change over from one unit to the other is achieved through multiplication by an escalation factor (and not through the addition of a "price escalation" because the latter cannot be expressed in any known unit). Table 10.8/2 mentioned above will show the nominal amounts stipulated by contracts, and then the same obligations expressed in constant TL.

Other characteristics of the new approach are that:

- Depreciation, which is neither a receipt nor an expenditure, does not appear except, in its legal acceptance, for the calculation of tax and subsequently in the optional balance sheet.
- There is no separation of the investment and operation periods in the main tables.

- The notion of net profit appears, in its legal definition, only in the tax calculation and purely as a residual item without much significance. We may note here that the strategy of an enterprise is based on net cash flow not on net profit.

Ratio analysis, such as it is practiced traditionally by banks, is a method for evaluating banking risk. For a state-owned bank dealing with state-owned enterprises, the evaluation of banking risk loses its significance. The meaningful criteria are those related to the profitability of the project for the enterprise (and for the nation). The risk of the project should be evaluated in relation to these criteria through sensitivity analysis. The risk of insolvability should be taken care of through suitable provisions in investment estimates, cash-in-hand and cash balance.

The main evaluation criteria are the net present value and the internal rate of return. Net present value is obtained by using a discount rate which normally for the entrepreneur who is a net borrower is the rate of interest at which he can borrow (plus an allowance for risk). DYB takes, as discount rate, the rate of interest charged on its loans. But this rate does not represent the cost of the loans in real terms because nominal repayments will be made in depreciated currency. There is therefore some inconsistency in discounting, at this contractual rate, the net cash flow of the project expressed in constant TL. One way of dealing with this would be to figure out the rate of interest actually paid supposing full repayment of the principal in real terms.

The break-even point is seen as a secondary criterion both for the profitability and risk. Sensitivity analysis will be primarily related to net present value and the internal rate of return, but can also be carried out on the break-even point.

b) National economic evaluation

Public investment projects must be evaluated as to their contribution to the national economy. To SPO this evaluation is of prime importance for deciding whether it endorses a project or not. Projects submitted to DYB should be expected to contribute positively to the objective of raising production and consumption.

For evaluating the contribution of investment projects to the national economy, it is necessary to use one of the methods of cost-benefit analysis developed for the purpose. The staff of DYB is already using the World Bank method when appraising projects which are to be financed by World Bank funds. We suggested in the previous section that DYB should also perform national economic evaluation on all other projects submitted for financing. DYB should also provide consultancy services to the SEEs to help them prepare feasibility studies, and this will include assistance in evaluating the projects from the point-of-view of the national economy.

It is now proposed that, in this evaluation work, DYB uses the method developed in the UNIDO Guidelines for Project Evaluation. There are several reasons for this choice: (a) The UNIDO method is very near the World Bank method so that DYB staff can easily learn to use it; (b) The UNIDO method uses a unit of account which is basically the same as the one used in financial

accounting, so that there is a certain continuity between financial evaluation and national economic evaluation; by contrast the World Bank method uses a foreign-exchange equivalent; (c) the application of the UNIDO method has been broken down into several stages which makes it easier to handle and to understand even by non-specialists.

The method is summarized in the Manual for the Preparation of Industrial Feasibility Studies (p. 189) which states:

"The UNIDO Guidelines consider the raising of aggregate consumption to be a fundamental objective in project evaluation. Other objectives (especially the redistribution of income) may also be taken into account. The various objectives then have to be weighed and combined in order to determine the net contribution of a project to the national economy. The method involves (a) the identification and measurement of direct costs and benefits, and indirect costs and benefits to aggregate consumption; (b) the calculation of the shadow prices of labour, foreign exchange, and investment; and (c) the estimation of the social rate of discount, and also of relative weights to be attached to the net benefits accruing to various groups in the economy if redistribution of income is considered as a separate objective".

The stages recommended for the application of the method are as follows:

1. Identification of the resource flows relevant to the national economy. These are the flows representing net release or use of resources as opposed to those representing cash transfers within the national economy. As many flows will be isolated as there are different shadow prices and weights to apply. If we start from the financial accounts, the adjustments to make in this first phase will be: eliminate taxes, and add so-called external effect (positive and negative).
2. Application of shadow prices to the flows now shown in the framework. In practice two main shadow prices will be considered, namely for foreign exchange and unskilled labour. Adjustments for consumer surplus will also be applied if relevant. The shadow pricing of resources permits to obtain the direct net benefit of the project to aggregate consumption.
3. Adjustment for the project's impact on savings and investment. This stage considers the indirect effect of the project on aggregate consumption. It may be important for projects that generate benefits to groups who save very little out of additional income.
4. Adjustment for the effect on income distribution considered as a separate objective. The importance of this stage depends on the priority which the government gives to increasing the income of the poor and on the degree to which the project generates more than average benefits to either the very rich or the very poor.
5. Adjustment for the project's production of goods such as luxury consumer goods or (on the contrary) basic needs whose social values are smaller or greater than their economic values.

Stages 4 and 5 can be enacted only by the application of weights which translate value judgements. Stage 3 necessitates only the identification of net beneficiary groups, and the estimation of their propensity to save as well as an estimate of the marginal productivity of capital in the economy. The implementation of stage 3 can be contemplated when the necessary basic parameter are well determined.



For the time being we recommend the implementation of stages 1 and 2. The results of such evaluation will be directly comparable to those obtained by the World Bank method which in its simplified form consider only the objective "of increasing levels of real consumption in the country as a whole" (however, the results will not be expressed in the same unit).

**In practical application**

- The cash flow tables (without or with foreign financing) will be changed into resource flow tables (tables 20.13 and 20.15 of the Guidelines combined, with the addition of a line for external effects). This is the identification phase. Cash transfers may be either eliminated from the picture or recorded separately below the tables.
- Inputs will be decomposed into their main elements; foreign exchange contents, taxes, unskilled manpower, and residual; and shadow pricing will be applied to foreign exchange and unskilled labour. This is the second phase.
- The present value of the project will be found by discounting the resulting net resource flow at a pre-determined social discount rate, or alternatively only will calculate the value of the discount rate larger than a stated minimum, then the project is worth undertaking.
- Export projects and import substitution projects can be further tested by calculating the project conversion rate. This rate indicates how many units of local resources are required in order for the project to gain or save one unit of foreign exchange. This rate should be equal or more favourable than the shadow exchange rate for the project to be acceptable.

The use of this method for evaluating SEEs projects from the opportunity study onwards will ensure that only projects beneficial to the national economy will be proposed by SEEs, endorsed by SPO and financed by DYB.

ANNEX

PROFORMA TABLES FOR EVALUATION

Only the more important tables are shown.  
They are:

1. Net cash flow without outside financing
2. Financing plan
3. Net cash flow with outside financing
4. Net cash flow with outside financing (alternative presentation)
5. Operating expenditures
6. Corporate income tax (net income statement)
7. Projected balance sheet
8. Resource flow table: yearly figures
9. Resource flow table: present value
10. Resource flow table: adjustments (shadow pricing)

ANNEX  
Table 1

Commercial Evaluation: Main Table 1

Unit: TL of (date) NET CASH FLOW without outside financing M. 10.13

Year	1	2	3	---	Liqui- dation	Present values		
						0%	10%	20%
Sales revenue								
Investment								
Fixed investment								
Preproduction cap.exp.								
Working capital								
Operating expenditures								
Material inputs								
Manpower								
Overheads								
Corporate tax								
Net cash flow					NPV	NPV	NPV	NPV
Cumulative net cash flow								

Pay-back period from undiscounted cumulative net cash flow

Net present value (NPV) from discounted net cash flow

Internal rate of return (on total investment) from discounted net cash flow

Each line of the table may be further sub-divided, especially between foreign exchange and domestic components.

Recovery of working capital and salvage value of fixed investment can be entered in the liquidation column either on the same line as working capital or fixed investment respectively (changing signs) or on a separate line (with a plus sign).

## Commercial Evaluation: Main Table 2

Unit: TL of (date)

## FINANCING PLAN

Year	1	2	3	---	Liqui- dation	Total
Cash inflows/Sources of funds						
Equity						
Loans						
Sales revenues						
Salvage value/Recovery						
Cash outflows/Uses of funds						
Investment						
Operating expenditures						
Debt service						
interests						
repayments						
Corporate tax						
Cash balance						
Cumulative cash balance						

The cumulative cash balance must be always positive. The part of cash balance not distributed as dividends but retained as reserves will be carried over to the "projected balance sheet" table. Statutory dividends may also be shown as cash outflows right after corporate tax.

## Commercial Evaluation: Main Table 3

Unit: TL of (date)

NET CASH FLOW with outside financing

Year	1	2	3	---	Liqui- dation	Present value		
						0%	10%	20%
Sales revenue								
Investment								
Equity disbursements								
Interest payment								
Repayments of loans								
Operating expenditures								
Corporate tax								
Net cash flow					NPV	NPV	NPV	NPV
Cumulative net cash flow								

From this table can be calculated:

- the pay-back period from the standpoint of equity
- the project net present value for the equity investor(s)
- the internal rate of return on equity investment

ANNEX

Table 4

Commercial Evaluation: Main Table 3  
(alternative)

Unit: TL of (date)

NET CASH FLOW with outside financing (alternative presentation)

Year	1	2	3	---	Liqui- dation	0%	10%	20%
Sales revenue								
Investment								
Fixed Investment								
Preproduction cap.exp.								
Working capital								
Operating expenditures								
Debt account								
Loans received								
Interest payments								
Repayments								
Corporate tax								
Net cash flow					NPV	NPV	NPV	NPV
Cumulative cash flow								

In this presentation all figures of the investment account remain the same as in Table M. 10-13 above.

## Commercial Evaluation: supporting table

Table 5

Unit: TL of (date)

## OPERATING EXPENDITURES

M. 10.3/1

Year	1	2	3	---	Liqui- dation	Total
Production Programme			50%	100%		
Raw materials						
local						
imported						
Utilities						
Repairs and maintenance						
Manpower						
Overheads						
factory overheads						
administrative overheads						
Sales and distrib. expenses						
Total operation expenditures	0	0				

Commercial Evaluation: supporting table  
 CORPORATE INCOME TAX (and Net Income Statement) M. 10.9

Table 6

Unit: TL of (date)

Year	1	2	3	4	---	Liqui- dation	Total
Sales revenue							
Operating expenditures							
Depreciation							
Interest payments							
Taxable profit							
Corporate income tax							
Net profit or loss							
Cumulative net profit							

The main purpose of this table is to calculate the corporate income tax. Depreciation is here calculated in line with legally permissible practice.

Net profit after tax is also shown on this table for the calculation of financial ratios which are of interest to banks for the evaluation of banking risk. The more frequently calculated ratios are: Taxable profit/Sales (%), Net profit/Sales (%), and Net profit/Equity (%).



## Commercial Evaluation: supplementary table

Table 7

Unit: TL of (date)

## PROJECTED BALANCE SHEET

M. 10.10

Year

1 2 3 ---

## ASSETS (total)

Current assets

cumulative cash balance

current assets (a)

Fixed assets (b)

Losses

## LIABILITIES (total)

Current liabilities (c)

Loans

Paid-up equity

Retained profits

This table is not used for evaluation of commercial profitability proper, but only for financial analysis by banks.

## Notes:

(a) working capital without deduction of accounts payable

(b) initial fixed investment plus replacements, and preproduction capital (ized) expenditures

(c) accounts payable

ANNEX

National Economic Evaluation

Table 8

RESOURCE FLOW TABLE

(Yearly figures, unadjusted)

Unit: TL of (date)

Year	1	2	3	---	Liqui- dation
Output					
export					
import substitution					
addition to domestic supply					
Construction expenditures					
materials: foreign exchange					
materials: domestic					
personnel: foreign					
personnel: skilled national					
personnel: unskilled national					
Working capital					
foreign exchange					
domestic					
Operating expenditures					
Salvage values					
Recovered working capital					
External (dis)economies					
Foreign financing					
foreign equity					
repatriated dividends					
foreign loans					
interest payments					
repayments					
Cash transfers					

Preproduction capital(ized) expenditures may be included under construction expenditures. The same breakdown applies to operating expenditures and construction expenditures. Cash transfers will be used for calculating (a) indirect effect of project on aggregate consumption by way of savings and investment, and (b) effect on income distribution considered as a separate objective. Output will be evaluated on the basis of f.o.b. prices, c.i.f. prices or consumer willingness to pay.

National Economic Evaluation

Table 9

RESOURCE FLOW TABLE

(Present values, unadjusted)

Unit: TL of (date)

Year	0%	10%	20%
Output			
export			
import substitution			
addition to domestic supply			
Construction expenditures			
materials: foreign exchange			
materials: domestic			
personnel: foreign			
personnel: skilled national			
personnel: unskilled national			
Working capital			
foreign exchange			
domestic			
Operating expenditures			
Salvage values			
Recovered working capital			
External (dis)economies			
Foreign financing			
foreign equity			
repatriated dividends			
foreign loans			
interest payments			
repayments			
Net benefit	NPV	NPV	NPV
Cash transfers			

National Economic Evaluation

Table 10

RESOURCE FLOW TABLE

(Present values, adjusted )

Unit: TL of (date)

	Adjustment factors	Present values adjusted		
		0%	10%	20%
<b>Output</b>				
export	100f			
import substitution	100f			
addition to domestic supply				
<b>Construction expenditures (a)</b>				
materials: foreign exchange	100f			
materials domestic				
personnel: foreign	50f			
personnel: national skilled				
personnel: national unskilled	w			
<b>Working capital</b>				
foreign exchange	100f			
domestic				
<b>Operating expenditures (b)</b>				
<b>Salvage values (c)</b>				
<b>Recovered working capital (d)</b>				
<b>External (dis)economies</b>				
Foreign financing	100f			
<b>Net present values</b>		<b>NPV</b>	<b>NPV</b>	<b>NPV</b>

- (a) Include preproduction captail(ized) expenditures
- (b) Same breakdown as for construction expenditures
- (c) Salvage values are usually considered domestic
- (d) Same breakdown as for working capital above
- (f) Adjustment factor for foreign exchange, preceded by percentage amount in present value. Fore foreign personnel, 50% assuming half salary repatriated.
- (w) Adjustment factor for unskilled national personnel.

