OCCASION

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

DISCLAIMER

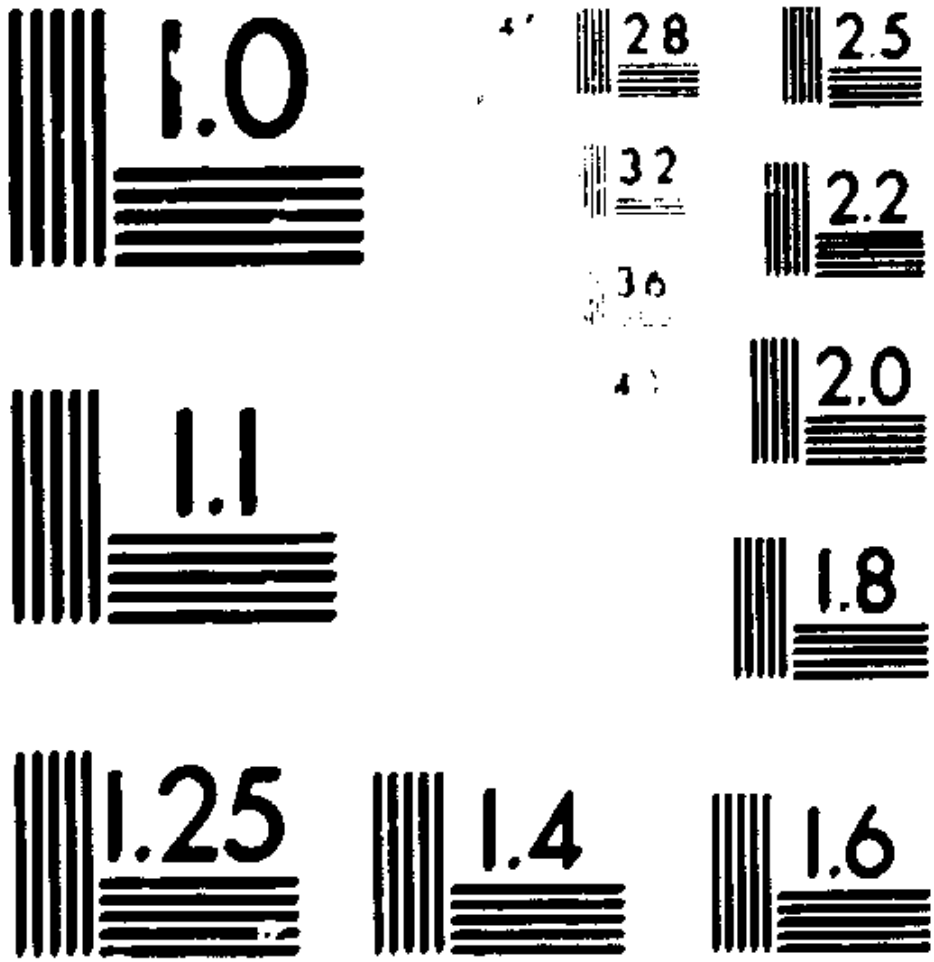
FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org



UNIDO/UNDP

14445

ASSISTANCE TO THE DEVELOPMENT OF SMALL INDUSTRY IN INDONESIA

(PROYECT DP/INS/78/078)

DEPARTEMEN PERINDUSTRIAN

DIREKTORAT JENDERAL INDUSTRI KECIL

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
(ASSISTANCE TO THE DEVELOPMENT OF SMALL INDUSTRIES)
DP/INS/78/078

PROJECT ADDRESS:
DIRECTOR-GENERAL SMALL INDUSTRIES
JALAN GURABAYA NO 2b
JAKARTA PUSAT
TELEPHONE 34872

PLEASE REPLY TO:
C/O UNDP
POST BOX 2338
JAKARTA
TELEPHONE 321308
CABLE UNDEVPRO JAKARTA
TELEX UNDEVPRO 011 - 44178

REFERENCE:

No. : IE.83-140/IV -17.

14445

BJØRN EIDSVIG:

A programme of Workshops for the identification, preparation and Implementation of Industrial Projects. (Section I).

3477

Report No. 31
October 1983.

INS 78/078 INDUSTRIAL ENGINEER BJORN EIDSVIG.

A PROGRAMME OF WORKSHOPS FOR THE IDENTIFICATION PREPARATION AND IMPLEMENTATION OF INDUSTRIAL PROJECTS (SECTION I.)

CONTENT:

1. Programme. 1. A programme of Workshops (3p)
2. Programme for 1st - 3rd assembly (10p)

2. Preparation. 3. Invitation letter (of 5th March)
4. Preparation request letter (of 18th May).

3. Content, (1st section) 5. Project preparation workplan (9p)
6. Screening and ranking of project possibilities (10p)
7. Creative Working techniques (5p)
8. Listing of project opportunities (5p)
9. Identification and selection of entrepreneurs (15p)
10. Aims of the feasibility study (1p)
11. Feasibility study work plan (10p)
12. Machinery comparison information and chart (5p)
13. Programme for collecting of information (15p)
14. Check list for collecting of project information (10p)
15. Project financing (2p)
For the 2 papers, "Project opportunities" (53p) and Industrial projects from town wastes (11p) please see the separate documents.

Over head transparancies. 16. The major transperancies used in conducting the programme (17p)

Memo Lecture 17. (7p)

Follow up 18. Project list (selections from the Jakarta Assembly June 1983) List of participants.
19. Project list (selections from the Surabaya Assembly August 1983).
20. Reminder letter to the groups (of 14 June 1983) (4 pages)
21. List of background information on projects sent to the groups (Jakarta assembly) (4p)
22. Inquiry letter about the progress with questionarie to the participants (end of August).
23. Request for follow up letter to the superiors of the groups (8th September 1983.)

PART 1.
PROGRAMME
AND
PREPARATION

PROJECT UNIDO INS/78/078.

A PROGRAMME OF WORKSHOPS
to Identify, prepare, implement and follow up small scale industrial projects.

The programme consist of 3 meeting sessions of workshops and 2 working periods in between. The programme will be held in collaboration between DJIK and UNIDO. The programme is intended to involve 24 participants divided in 6 groups with 4 persons in each. The tasks for each of the 6 groups will it be:

Before 1st assembly	: To study received material and to act accordingly.
During 1st assembly (2 days)	: To select and priority list 8 potential projects
Before 2nd assembly (6 - 8 weeks)	: To collect the required information for the preparation of 4 projects
During 2nd assembly (5 days)	: To prepare one complete feasibility study.
Before 3rd assembly	: To prepare further 3 feasibility studies and to initiate and follow up implementation of at least one of them.
During 3rd assembly	: To evaluate one of the implemented projects and to draw a plan for its improvement/extension and/or duplication.
After 3rd assembly	: To initiate implementation of the further projects, to plan for their further development and to initiate fulfilment of the plans.

It is the intention to conduct the programme on a regional level and to repeat the workshop programme all together 4 times:

1st	Jakarta	from	March	1983 to December	1983
2nd	Medan	from	April	1983 to January	1984
3rd	Surabaya	from	May	1983 to February	1984
4th	Semarang	from	May	1983 to March	1984

- Expecting 4 different projects from each group, with 6 groups per assembly and repeating the workshop programme maximum 4 times, a total of maximum 96 different industrial projects may be prepared and implemented. 96 persons will recieve training in project preparation.

  Out of the trained personnel may be recruited personnel for giving similar training in the future.

- It is anticipated that some further participants from the adminitrative level will attend the workshops for the sake of follow up and future administration. These will join the groups as a 5th member.

- The UNIDO personnel will to the extent it is possible follow up and guide the progress between the assembly sessions.
  The major part of this will be conducted by the UNIDC field experts, having as much as possible day to day contact with the participants. The field experts will also be present during the conducting of the workshops.

- The participants should all be senior, well qualified, industrious people, having the possibility of doing the required planning and promotion between the assemblies, and to control the implementation of the projects. A good working knowledge of English language is required.
  The working groups should be composed so heterogeniously as possible, each preferably with participants with knowledge or experience within the 4 different fields of:

  - engineering or production control, technology understanding

- sales, purchase or marketing
- economy calculations/financing
- contact with entrepreneurs or the working with industrial estate accomodation/infrastructure/labour situations.

- After conducting the programme last time, the workshop material will be collected for future reference and for the conducting of similar programmes in the continuation. The material will contain:
  - Workshop programmes
  - Hand-outs from the workshops
  - Resumes of the briefing sessions
  - Copies of transparencies and other audio visual materials
  - The list of priority projects from the working groups
  - The maximum 96 feasibility studies
  - Evaluation and conclusion regarding the implemented projects
  - Copies of the plans for expansion within the different trades.

PROGRAMME FOR 1st ASSEMBLY

PROJECTS IDENTIFICATION PHASE (2 days)

1st day:

8.00 - 8.30	Assembly and consultations
8.30 - 9.00	Opening by DJIK Project National Director
9.00 - 10.00	General information about the workshop programme
10.00 - 10.30	Group assembly. Internal discussion of the workshop programme in general. Identification of possible working difficulties and agreeing on collaboration in the groups.
10.30 - 11.00	Questions and discussion about the programme
11.00 - 11.30	Break
11.30 - 12.15	Aims of the industrial projects and requirements to projects to be planned by the groups. Briefing
12.15 - 1. 30	Creative teamwork. An orientation about working methodology.
1.30 - 2.00	Lunch break
2.00 - 3.00	Group selection of initial chairman and secretary, listing and shortlisting of 12 or more, potential projects, arranged as to pricrity of working
3.00 - 5.00	Presentation and discussion in plenary of the listed projects. Determining of problems areas and which basic preconditions for the projects to check.

2nd day:

8.00 - 8.30	Assembly and individual internal consultations.
8.30 - 9.30	Plenary briefing on how to get applications from prospective potential entrepreneurs. Discussion of same.

9.30 - 10.30	Checking of basic preconditions (on an individual basis)
10.30 - 12.30	Briefing on the aim and the content of the required feasibility studies (With emphasis on the required information)
12.30 - 1.00	Confirming in plenary of the basic project pre-conditions and confirmation of priority for the identified project tasks.
1.00 - 1.30	Listing as group activity, the required project information and proposed sources for same.
1.30 - 2.00	Lunch break
2.00 - 3.00	Presentation in plenary of the list of information to be collected
3.00 - 4.00	Distribution within the groups, tasks of collecting information. Time plan for the period before next assembly
4.00 - 5.00	Discussion of working methodology and collaborating opportunities during the information collection phase. Briefing about the 2nd assembly.

Activities between the 1st and the 2nd assembly (6 - 8 weeks)

Information Collection phase

The following tasks will be performed for the "workshop" project and consequently for the 3 further selected additional projects (if it becomes obvious during the collection of information that the operating conditions for a project will be very difficult, one should collect information for the next project on the priority list) :

Technology:

- Which product varienties can be made ?
- Which influence has selection of product variety on technology investment and market.
- Which technologies are available ?
- Where is technology in formation available ?
- Which supplies exist for the required equipment ?
- Collect quotations for adequate equipment from the supplies
- Collaborate with the suppliers until the quotations cover the requirements.

Raw materials:

- To which extent are the required raw materials and other inputs available within reach in sufficient quantities/ qualities ?
- Get quotations for raw materials specifying price, payment terms, freight, etc.

Market:

- How is the market and the price dependent on the execution of the product ?
- Which quantities does the market require and which share of the market is it reasonable to expect for this project ?
- Which are the normal trading channels and the trading system for/the product ?
- Which are the prices and profits from manufacture to consumer ?
- How is the demand distributed geographically ?
- Which are the payment conditions ?

Entrepreneur:

- Which are the requirements to the entrepreneur in terms of; Management ability, technology knowledge, capital availability, premises availability and others ?
- Get, applications from prospective entrepreneurs through spreading encouragement and project information.
- Collect information about the capabilities of the applicants

Location:

- Estimate the requirements of the project to size, standard/ cost, location, required infrastructure and others.
- Get information on availabilities of working premises, preferably ready buildings for hire.

Make notes, minutes, and tables of the collected information
Organize the above information systematically in a file.

PROGRAMME FOR 2nd ASSEMBLY

FEASIBILITY STUDY PHASE (5 days).

1st day:

8.00 - 8.30 Assembly and individual consultations

8.30 - 9.30 General information in plenary about the progress situation after the information phase, and briefing about the programme for the 2nd assembly.

9.30 - 11.00 Briefing in plenary about the investigations and compiling to be done regarding the technology content of the project. (product - process - and selection of equipment)

11.00 - 13.00 Group and individual, tailoring and compiling of the technology part of the feasibility study (based on the 6 different projects selected by the groups)

13.00 - 13.30 Lunch break

13.30 - 17.00 Completing of the technology part of the feasibility study individually and in the groups (cont.)

2nd day:

8.00 - 8.30 Assembly and individual internal consultations

8.30 - 10.30 Precentation in plenary from the 6 groups the results of their technology investigations and compiling. Discussion of the results and concluding of the individual situation.

10.30 - 12.00 Briefing in plenary about compiling the market investigations and its concluding

12.00 - 13.00 Group and individual activities compiling the market investigations and concluding of demand, price, and marketing strategy.

13.00 - 13.30 Lunch break

13.30 - 17.00 Completing the market/demand part of the feasibility study individually and in the groups (cont.)

3rd day:

8.00 - 8.30 Assembly and individual internal consultations

8.30 - 10.00 Presentation in plenary from the 6 groups, results of their market investigations and conclusions. Discussion of the results and concluding of the individual situation.

10.00 - 12.00 Briefing in plenary about the compiling and conclusion of the economy section of the feasibility studies, including investments, profitability, and other parameters

12.00 - 13.00 Group and individual activities compiling investments, profitability and other economy parameters of the feasibility study for the different projects.

13.00 - 13.30 Lunch break

13.30 - 17.00 Completing the economy part of the feasibility study individually and in the groups (cont.)

4th day:

8.00 - 8.30 Assembly and individual internal consultations

8.30 - 11.00 Presentation in plenary from the 6 groups the results of the economy computations and conclusions.

Discussion of the results and concluding of the individual situation.

11.00 - 12.00 Briefing in plenary about the further content of the feasibility study, the entrepreneur, location required financing, and summary/introduction.

12.00 - 13.00 Group and individual activities to complete the rest content of the feasibility study.

13.00 - 13.30 Lunch break

13.30 - 17.00 Completing and assembling of the feasibility study.

5th day:

8.00 - 8.30 Assembly in plenary and individual internal consultations

8.30 - 13.00 Presentation in plenary from the 6 groups the total concluded projects, including their selection of entrepreneur and project location. Discussion of the results and concluding of the individual project.

13.00 - 13.30 Lunch break

13.30 - 15.00 Briefing on the implementation of the projects including, collaboration with entrepreneur, financing, licensing and project approval, location, machinery purchase, time planning, and follow up.

15.00 - 16.00 Group activity making the time action plan for the project implementation

16.00 - 17.00 Presentation of the action plans in plenary, discussion and conclusion.

17.00 - 19.00 Individual consultations regarding the further working of the projects.

19.00 - 21.00 Dinner in a different place with a summing up spech by Mr Tampubolon.

ACTIVITIES BETWEEN THE 2nd AND THE 3rd ASSEMBLY:

(6 months)

Implementation Phase:

- Infrom and get commitment from the tentatively selected entrepreneurs.
- Reconsider and adjust feasibility study in collaboration with entrepreneur and UNIDO. Duplicate the document.
- In collaboration with entrepreneur, select location/premises.
- Assist entrepreneur to obtain financing and let the entrepreneur open a joint account for his equity capital
- To the extent it is necessary, help the client to order all required equipment and installations.
- Make a lay-out for the installation
- Help the client in making specially required arrangements adequate sales materials are made
- Follow up that the prepare time/action plan is followed and make sure that installations are properly done.
- Follow up the trial production and see that proper methodology is applied and that adequate qualities are made, limited to the standard products.
- Make sure that sufficient account are maintained.
- When the project has come into operation, check that the production and the economy gives adequate results.

PROGRAMME FOR 3rd ASSEMBLY

RESULTS IDENTIFICATION PHASE (3 days)

1st day:

8.00 - 8.30 Assembly and individual consultations

8.30 - 9.15 General information about the progress and the programme.

9.15 - 11.00 Briefing an aims and methodology in project evaluation with the aim of creating improvements in their operations. Introduction to an inquiry form.

11.00 - 17.00 Visit to the several implemented projects (collectively)

2nd day:

8.00 - 14.00 Group visit to own project. Checking the general project situation, guided by the inquiry form.

14.00 - 17.00 Group assembly, compiling information from the visit, calculating, and discussing action opportunities concluding a plan for improvement of the project.

3rd day:

8.00 - 8.30 Assembly in plenary, individual consultations

8.30 - 10.00 Presentation in plenary of the results of the investigation and the action plans for improvement of the on going projects. Discussion and conclusion.

10.00 - 11.00 Briefing in plenary on the possibilities of project duplication and expansion.

11.00 - 12.00 In the group, drafting of a plan for expansion on the trade represented by the new project

12.00 - 13.30 Precentation and discussion of the expansion plans.

13.30 - 14.00 Lunch break

14.00 - 15.00 Discussion of the continuation of activities to develop further industrial projects and the needs to provide further training within the subjects of the programme of workshops.

15.30 - 16.00 Closing of the workshop programme by the DJIK Project National Director.

Jakarta, 11th February 1983.

Bjorn Eidsvig,

Industrial Engineer - UNIDO.

IE.83-52/IV-04.

PROPOSAL TO CONTENT OF AN INVITATION LETTER TO PARTICIPATE IN THE PROGRAMME :

Re Preparation of new Industrial projects. An Invitation to a programme of workshops.

Subject to budget approval has it been accepted to run a series of 3 sucsessive workshops conducted by the DJIK with the technical assistance rendered by the UNIDO-Team within the subjects of identification, preparation, and implementation of small scale industrial projects. The Workshops will be held over a period of about one year. The intention is that the participants during this period, in groups of 4 will do actual identification, preparation and follow up of implementation of 4 real small scale industrial projects each.

One of the projects to be worked through during the assemblies, and as many as possible of them to be implemented during the period. A temporary workshop programme follows enclosed specifying totally 10 assembly days, but this may possibly be increased.

We consider the opportunity to be both interesting, have good personal development prospects, but also to be very demanding. The projects expected to be implemented, preferably based on new technologies, increases of course the value of the initiative. It is expected that the participants engaging in the projects will not be able to, and must be totally released from, other tasks during the year of the programme. Later on it is expected that they will continue work of the same type. The 4 persons working together in a groups should be from the same area, enabling them to continue working together also between the assemblies.

It is considered beneficial if the 4 persons in the groups can

have different professional background, very well with one from the engineering or production side, one with economy background, one marketing, and one with personnel or estate relationship.

The workshops will be conducted in Jakarta. We expect to establish 6 groups, whereof one from Aceh, one from North Sumatra, one from DKI, one from West Java and two from Central office. (Totally 24 participants)

The programme will be conducted in English. It is therefore necessary that the participants have a good working knowledge of the language.

We hereby invite you to select 4 participants for the programme, candidates that will be sufficiently free from other tasks, have adequate professional background and are specifically interested in such a programme.

The first session will be held in the middle of April and we expect that the participants will start their preparatory work 3 weeks in advance.
We therefore require urgently to know the names and the particulars of the selected candidates.

Jakarta, 5th March 1983.

UNIDO INS 78/078.

Bjørn Eidsvig,
Industrial Engineer.

IE.83-140/IV -17.

EXECUTING AGENCY: Directorate General of Small Scale Industries, DJIK, Department of Industry.

SUPPLEMENTARY TECHNICAL ASSISTANCE. : Industrial Engineering DJIK-UNIDO DP/INS/78/078.

Important information. Please read this immediately.

The workshop programme for Identification, preparation and Implementation of Industrial Projects.

Preparation for the Workshop participation:

You have as you will know, been selected for participation in the programme of workshops to be conducted by DJIK assisted by UNIDO, for the identification, preparation and implementation of industrial projects.

You can consider this being an unik opportunity for you to achieve thorough training in project preparation and follow up, together with getting real practical experience under limited, but efficient guidance.
The intention is that the expertice you accuire will be further drawn upon in the future, that you will be looked upon and utilized as a project promotion specialist.

There is also a possibility that you may be selected for the future conducting of similar training programmes.

The aim of the programme is not only to let you learn better project preparation thorough theory and practical exercises, unless also to do the planning and real implementation of the projects.

The best way of learning better project preparation is certainly through doing the job in reallity, but besides this is it hence also the aim to get implemented for each group, 4 projects. It is in this way expected that the 6 groups of the programme will create implementation of all together 24 different new and untraditional projects which later on again can be duplicated.

It is expected that major efforts will be done by you during the programme period, from receival of this letter and for up to a period of one year. This is why it has been expected that you will not get much additional time to engage in other tasks. Full efforts will be required from you during the assemblies, but similar efforts will also be required in between the sessions when you will continue to work on this programme at your normal duty station. You must therefore arrange that you will be released for other major tasks during this period.

If there will be any obstacles against your full participation in the programme, please discuss this immediately with your superior and further communicate the matter with Mrs Luky of DJIK, Jakarta without delay.

The programme comprises all together 7 different stages including 3 assembly sessions, and is built up as follows:

1. Before 1st assembly : To study the received material, to study and discuss project opportunities fit for your location with colleagues and people within the various trades, so as to be fully prepared for the 1st assembly.

2. 1st assembly : On a team basis to discuss, evaluate and do final selection of 8 potential projects.

3. Before 2nd assembly : To collect the full information which is required for the preparation of 4 - 8 of the selected projects.

4. During 2nd assembly : To complete preparation of one or more feasibility studies for the selected projects.

5. Before 3rd assembly : To prepare 3 or more feasibility studies for the selected projects and to initiate and follow up implementation of at least one of them.

6. During 3rd assembly : To evaluate one of the implemented projects and to draw a plan for its improvement/extension and/or duplication.

7. After the 3rd assembly: To initiate implementation of the further projects, to plan for their further development and to initiate fulfilment of the plans.

During the assemblies : You will be guided in the work besides that you will perform the tasks as specified. Each group of 4 persons will work closely together both in planning, collecting information, discussing problems, writing material and follow up the implementation as well as during the result analyzing stage.

Between the assemblies is it expected that you will continue to work together in the group and the groups will in general be left to control its own activities. The UNIDO experts will to some extent be available to guide the activities also between the assemblies, but quite limited than, and in general only on your request when you find that assistance is required.

Before the 1st assembly.

You will now have only limited time remaining, but it is important that you utilize this time efficiently, and it is expected that you will do the following to prepare yourself for the 1st assembly:

1. Study carefully all the material enclosed with this letter
2. List for yourself industrial small scale projects which you think are required in you area, which are presently lacking and are possible to promote. Make use of the lists and proposals which are enclosed !
3. Discuss those your ideas with other people to get as much information as possible about prospects and possibilities. Discuss with manufacturers, with traders, with users, with authorities, with material suppliers and who ever you think will have useful information for you. Make detailed notes of the information you get !

The 1st Assembly will be held in Hotel ....
from 7th to 9th of June 1983. Please make sure that you will be present in the hotel Tuesday the 7th June at 8.00 if necessary through coming to the hotel the evening before.

Write about hotel reservation here !

The programme the 7th June and 8th June will continue until late, and you will not get time for other activities after the programme hours. The 9th June the programme will continue up to 17.00.

Please make sure that you bring this material with you, together with the information you will collect in the meantime.

The following material is enclosed collected in a working file, which will be added further material later on, an is expected to be used during the whole programme:

1. List of the participants
2. The workshop programme
3. Listing of project opportunities - Sources of Project Ideas
4. Screening and ranking of project possibilities.
5. Identification and selection of entrepreneurs.
6. Programme for the collection of informations for preparation of feasibility studies.
7. Check list for the collection of information for preparation of feasibility studies.
8. Creative working technique.
9. Project Financing.
10. ISIC project list of the National Statistical Bureau
    ISIC project list of the Department of Industry BPPI.
11. A list of uses for town-wastes.
12. Project opportunitities (for consideration of preparing feasibility studies).

We wish you welcome, well prepared, for the first assembly.

Jakarta 18th May 1983.

Directorate General
Small Industry,

(Gitosewoyo S.H.).

PART 2.

LECTURE

CONTENT.

PROJECT PREPARATION WORKPLAN

Short Listing of the proposed sequence:

1. Collecting of general status information
2. Listing of project possibilities
3. Discussion of these
4. Estimating of Key figures of individual projects
5. Priority listing (temporary) of projects
6. Delegating of collecting project information
7. Prefeasibility study
8. Project approval
9. Financor's clearing
10. Client identification
11. Priority listing of projects
12. Feasibility study (client collaboration)
13. Location selection
14. Planning of of building installation and investments
15. Financing
16. Implementation assistance
17. Training
18. Assistance on start of operations
19. Result registration
20. Project improvement
21. Duplication of project

Short listed information on the individual steps as listed above:

1. Collecting of General Status Information:

1.1 Import, Export, Production statistics:

- Sort out products possible as import substitutes, products for increased export, and production which raw material are exported that should rather be utilized for production of finished products.

1.2 Trader information : Sort out from shop visits products which are in short supply, of low qualities and imported too expensive

1.3 Industries information : Which inputs are inadequate as regards supply, price, or quality ?. Which wastes or by-products are available ?.

1.4 Consumers Information and general knowledge : Which products are lacking, easy to manufacture or to expensive ?. Which raw materials are extensively available, which wastes ?. Which are the basic need products and services inadequately available ?.

1.5 Compare with project lists from other sources, form machine suppliers and from other countries.

2. Listing of project possibilities.

2.1 List projects which may be expected to be:

- Fit for small scale production
- Are required to settle basic needs and can ease the life in rural areas.
- Utilizes available wastes and locally abudantly available raw materials
- Require limited skills.

2.2 Categorize the list on industrial trades, and range as to expected priority.

3. Discussion of project Possibilities

- The list to be distributed internally and to the outstations, inviting to comments on individual projects and to providing of futher project possibilities

- Comments to the list should refere to :
  - Knowledge and experience available within the project
  - Warning against specific difficulties within the trade or emphasising on the needs
  - Reference to information sources, available project studies, literature etc. to ease the project preparation
  - Reference to potential clients or locations
  - Bottle necks, and difficult available inputs
  - Available market information and information about suppliers of machinery and raw materials.

4. Estimating of Key figures

For each project estimate after only limited investigations figures for:

- Competitive price
- Lowest economical size of project in terms of production volume, manpower, investment and working capital, profitability
- Foreign exchange savings
- Required efforts for preparation and implementation of the project, multiplying potentials
- Importance ranking of the project (1-5) based on above figures
- Difficulty in Implementation ranking (1-5) based on time factor, technology difficulty, financing problems/capital demand.

5. Temporary Priority Listing

List the projects, ranking according to the above factors in sequence of recommended order of preparation and implementation.

6. Delegating of Collecting of project information

The information collection for the prefeasibility study should be as brief as possible, tne much that one will be able to quickly get only a rough picture of the situation: Finding roughly product price, material cost, approximate cost of equipment, assessment of labour cost, and seing the market in general to be sufficient and seing that the required inputs can be expected to be available sufficiently to prepare a very short presentation as required for the purpose of expecting the project to be so prospective that a complete feasibility study can be made and that the project can be given initial green lights.
There is normally no reason for dividing this work between different people or departements.

7. Prepare a pre feasibility study

The pre feasibility study

The pre feasibility study should be brief, normally 2 - 5 pages. It should not contain more than what is necessary to roughly judge the viability of the projects, determining the sufficiency of the market demand, prices, investment and a 3rd year profitability estimate determing the break even point.

8.- 9. Project Approval and clearing by the intended financer

The project should be approved at this stage before preparing the final feasibility study, a approval which of course will be subject to that no serious problems or short-comings will ocur during the final investigations. One can hence avoid working extensively on projects which stand limited chanses of being implemented.
The project may as to its situation require approval by UNIDO, the ministry and posibly also other institutions dependent on circumtances, and by the local authoryties Renewed approval may under certain sircumstances be required ofter completion of the final feasibility study if the picture changes drastically.

10. Client Identification

When a brief study is available and the project in the principle is accepted for financing, this is normally the stage that one will identify prospective entrepreneurs for the project.
Several ways may be used in seanching for, and selecting the client including advertising, generally and specifically, for interested people.
The client must under all circumstances have the necessary and best possible qualifications:

- The necessary knowledge and experience of the required technology, (especially for smaller projects where no manager should be employed).
- Being able to prove that he has the required equity capital, equal to the working capital + the pre-perational costs or at least 20 % of total project cost

- Being well fit to establish him-self where the project will have the most prosperous working conditions
- Having sufficient ability to do managerial administration of the project
- To the extent its is required, have available suitable working premises for the project.

It is important that the client will take part in the continued preparations and provide parts of the required inputs.
This is in order both to make him conversant with the project, to learn him properly to know. Whether he really is well fit to manage the project, and to ease the job of project preparation.

The client must be made completely aware and he must sign a document that the project is in no way committed to him.

11. Priority listing of project.

It is expected that prefeasibility studies will be made for many more projects than what will be implemented and that one will have capacity of making any complete feasibility study for. A priority list for projects in the pipeline for making full feasibility study, will always be maintained and continiously be updated.
The same parameters as mentioned under (5) above will apply, together with client and location questions.

12. Feasibility study

Prefeasibility studies can at time be made for any project.

The final feasibility study will in general only be made for the project appering highest on the priority list for approved projects.
The study will in general be prepared by the one who has taken main interest and taken part in the preparations. The work may however be shared, and it should be expected that marketing and engineering dept. will participate with investigations and in compiling parts of the reports within their specific fields. Also is it expected that documentation will take required part in collecting and providing of required information.
The feasibility study should be sufficiently comprehensive to get the necessary picture of the economy and the technology and function as a brief guideline for implementation of the project. Necessary data for financial judgement should appear, but one should avoid filling the study with unnecessary information. Simple and small projects with obvious feasibility may always be much shorter than the more complicated ones.

13. - 14. Location and planning of building installation

If the location has not been clarified earlier, the most economical selection of location and premises will now be done. One will if possible rather make use of existing premises for lease or belonging to the client.
Installations will be planned in conjuction with the client.

15. Financing

The project will not be committed to the client before;

- The project is finally approved

- Financing is approved
- The equity of the client is deposited on a joint account with the finance institution.

The means of the client will be utilized before drawing on loans.

16. Implementation Assistance

UNIDO will only give advice on the implementation without taking any active part. It is however a condition that the advice will be followed for UNIDO to approve disbursment of funds. It is expected that the client will liase with UNIDO in all important matters of the implementation.

17. Training

The UNIDO training officer will at an early stage acess the need for training of personnel of the project and collaborate with the client to ensure that possible requirements will be fulfilled before the project starts its operations.
Also he will follow the initial operations closely to see to which extent futher training on the job or otherwise will be required.
He will take the necessary steps to ensure that the required training will be acheived. It is expected that the client will be capable of the required technology, management and bookeeping.

18. Assistance duing start of operations

UNIDO will not take any active part in start of operations but will at different times monitor the progress, identify loop-holes, and take steps that the client will be guided accordingly.

19 - 20 Result Registration and Improvement

The client will be expected to send ½ yearly accounts to UNIDO. As far as these are satisfactory, no futher actions are expected, while otherwise a monitoring visit followed by a improvement programme is required.

21. Duplication of Project

Before committing the project to the client, it will be made clear that UNIDO will utilize the project experiences for the establisment of similar projects elsehwere. Duplication will be encouraged as soon as it is felt that the result possibilities are certain enough. Dependant on the technology and the economical situation, that may occur at any stage of development.

Jakarta, 9th December 1982

Industrial Engineering Expert,

(BJORN EIDSVIG)

BE/KN

DP/ INS 78/078./IE

IE.83-50/IV -03.

SCREENING AND RANKING OF PROJECT POSSIBILITIES

To promote an industrial project, there are only 2 goals that the project must fulfil; but these are very definite :

1. The products or the services of the project must be of value to the society.
2. The project must be sufficiently profitable.

If the outputs of the new enterprise does not improve the situation of the society, you should not promote it, even how profitable it could be for the entrepreneur and his employees !

There are only 3 ways in which the project can be of real value for the society:

1. That it manufactures products which the people <u>really</u> need; products that makes <u>life better</u> at costs that are not too high.
2. That the production substitutes importation-to save foreign currency.
3. That the production is being exported - to gain foreign currency.

If the project is not of value to the society; than leave it. Do not promote it even if it means high profits for the entrepreneur and good employment opportunities !

Other factors are all related to profitability, including environmental matters, which may require costs in order limit harmful side effects.

For us particularly to devote time to project promotion, two more conditions should be fulfilled. These are:

1. The project must be small scale. This means that the required bank financing capital must be limited to a maximum of Rp. 75 million.

2. The involvement of working hours for the promotion should not be unreasonably high compated with the effects of the project. Hence; projects making more important products, projects employing many people, projects which has good growth potential and projects within new technology on the local level possible to duplicate by promoting further similar projects, should be given the highest priority.

The further questions, more or less related to profitability, are the following:

- Market considerations
- Technology considerations
- Investment requirements
- Raw material situation
- Employment
- Environmental and location situation
- Concluded profitability.

For the screening out of projects that does not appear sufficiently positive, and the ranking of the acceptable ones, the different areas should receive reasonable attention at least within the following subquestions. Considering the limited time which is available one can obviously not go too much in detail, and finding answers to the questions in the form of figures should be done only to the extent that this is important in the individual case.

1. <u>Market Considerations</u>

- How big is the demand within the natural nearby market for the products of the project and how does that compare with an expected normal production volume of the project ?

- To which extent is the local market demand settled by other local manufactures, through Indonesian production in general, and how much is settled through importation ? Can the required share of the market be reached comfortably without too much strain ?
- Which are the prospects on a wider market area, and which extra complications will that involve in terms of freight and communication ? Which is the export potential ?
- How will the project be able to compete with the existing net prices from other manufacture ?
- How will the project in general be able to compete with the established manufacturers having long time training and depreciated equipment ?
- How will the project be able to compete in quality ?
- How will the project be able to provide credit-facilities for the sales, similar to the conditions offered within this trade ?
- Can one come to violate any patents, licenses, or other restrictions on the product ?

2. Technology

It may be possible to establish the project within different levels of technology. One will normally try to make use of the technology which gives the lowest cost per manufactured unit under our local conditions. This will normally for us mean a Semi labour intensive alternative with individual simple machines.

- Will we be able to operate the processess and to manage the maintenance wihout too big problems ? Do there so far exist any local experience to operate such equipment ?

- Are we adding any new technology through this project, or are we only repeating what is already present ?
- To which extent can the required equipment be locally available ?

3. Investment Requirement

What approximately will the project investment be:

- Process machinery	Rp .....
- Other equipment, tools, factory furniture, transport means;	Rp .....
- Import fright, and transport costs to get the equipment in position in the factory;	Rp .....
- Installation cost, electricity, water, etc.;	Rp .....
- Building costs (only if necessary) or building modifications;	Rp .....
- Working capital, net.	Rp .....
- Pre-operational cost. All expenses before production start incl. interests, rents, salaries, training, etc.	Rp .....
Total	Rp .....

Can one expect the investment related to sales volume to be reasonable ?

4. Raw Material Situation

- Are adequate raw materials of local origin at all times available in sufficient quantities at acceptable prices ?
- Can one expect any of the raw materials to become scarcely available, or prices to increase unreasonably ? Is it possible that a license or a quota system can come to apply ? Can one risk to be refered to one single controlling supplier only ?

- Which are the normal payment conditions in the trade ?

5. Employment

- How many people will the project require ?
- Will these people be available with the required amount of skill and training ?
- Will the project be strong enough to offer good salaries and working conditions ?
- What will be the investment per employcee ? (Preferably under 1 million Rp)

6. Location and Environment

- Is the prefered location the place where this project can be run most economically ?
- Are buildings, electricity, water, drainage for effluent, roads and, transport, telephone and communication, as well as employees accomodation sufficiently available there ?
- Will noice, smell, wastes, traffic, dust or smoke create any problems in the local environment ?

Concluded Profitability.

In calculating the profitability, the situation related to the above questions are important.

If you have time and information enough, do a rough calculation or estimate of the possible projects, if not, try to get a clue about the economy situation within the trade in general. Contact people within other enterprises as similar as possible. They will let you know. The rough calculation you can do as follows:

- Yearly sales = Net sales price for the product to wholeseller or other first link to be sold to, deducted freight, sales tax, packaging, discounts, and commissions,

multiplited with

80 % of the no of products you expect possible to manufacture and sell in a normal year = Rp .....

- Less Variable cost = Material costs, consumeables, electricity, and operators wages, yearly = Rp .....

Gross profit = Rp .....

- Less Fixed costs = Salaries, building rent, depreciation of equipment (10 %), interest on total capital in volvement (11 %), maintenance, office expenses, sales cost, transport, insurance etc. = Rp .....

Net profit = Rp .....

From this you can calculated a few economy parameters for comparison with other project alternatives:

- Profit on sales = $\frac{\text{Net profit X 100}}{\text{Yearly sales}}$ = ... % (Preferably over 10 %)

- Profit on investment = $\frac{\text{Net profit X 100}}{\text{Total investment}}$ = ... % (Preferably over 30 %)

- Break even point = $\frac{\text{Fixed costs X 100}}{\text{Gross profit}}$ = ... % (Preferably under 65 %).

Project Screening

Having done a preliminary investigation/judgement of the project opportunities as specified above, we can now do a screening of the projects. A schedule as below can than be useful:

Project Alternative	SITUATION EVALUATION																								CONCLUSION
	Society need for the project		Market potential		Technology requirements		Investment and financing requirement		Raw material requirement		Employment demand		Location		Profitability		Potential for growth								
	Not required	Required	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable	Not acceptable	Acceptable							Not acceptable Acceptable
1.																									
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
12.																									

Any project being determined as not required or not acceptable for any of the parameters above must be concluded as not acceptable while the others are acceptable for the further investigations to follow.

It might however, sometimes be worthwile to look into the not acceptable projects once again: Why is it not acceptable ? What can be done about it ? May it be possible to alter the project to make it better fit ? Can the product construction be improved ? Can different raw materials or a different technology be used ? Can the location be altered or other steps be taken ? And how can the profitability be improved upon ?

It is always possible to change and improve a project at this stage !

Project Ranking

The projects accepted in the screening are more or less important for the society, the profitability and the works involved varies from project to project, the preparation work can be more or less, and the project can have bigger or smaller ring effects. In one project can it be easier to find prospective enterpreneurs and locations than in others.

It is therefore useful to rank the projects which have been accepted in the screening for the sake of putting first of all the main emphasis on promoting the high priority projects.

The ranking can be done in a table like this:

Project	Project Importance	Profitability	Risk	Prospects for enterpreneur and location	Preparatory work related to impact and growth potential	Priority	Comment
1.							
2.							
3.							
4.							
5.							

We propose to limit the parameterss to be judged to the 5 which are specified in the table. Values for the prospects of the projects can be filled with any scale as desired, e.g. a simple 1 - 5 scale for each of them. Priority making should better not be done merely by adding the points together, with or without applying a weight factor to each of the parameters, without rather comparing the scores and adding up with discussion and common sence !

Opportunity study and prefeasibility study.

In preparetion at least of larger projects is it common and useful first to prepare an opportunity study, and there-after a pre-feasibility study.

The opportunity study is a roughly worked out economy comparison of several project opportunities. The aim is to find out which of the opportunities offer the best prospect in terms of profitability and other requirements.

The prefeasibility study to follow use to be a bit more thoroughly done study, for the one selected project, to determine wheter the expectancies are within reach. Only when being fairly sure of that, is it that one usually will go ahead with a fully pledged feasibility study.

In our small scale project case is it now up to you to judge: Have the investigations been so throughly done and are the observations so safe that we can go straight ahead with a full scale feasibility study, requiring work and waiting time for several weeks to come ? And are you also confident enough, that the right selection and priority making is done ?

If you answer is uncertain, is it better to work through the highest priority project once again !

Jakarta 26th February 1983.

Bjorn Eidsvig,
Industrial Engineer - UNIDO.

IE.83-75/V - 08. DP/IRS/78/078.

CREATIVE WORKING TECHNIQUE.

Creativity is the ability to develop and utilize new ideas, to create new better situations.
Your creative ability is dependent on

1. Inborn fantasy
2. Rational working technique
3. Identification of, and freedom from habit thinking.
   An open mind.

Of these, the 2 last factors are the most important. That you are not creative enough; that you do not see the opportunities for better solutions, develop and implement them; is not because you are lacking fantacy. It is because you have stopped using it, and because habitual thinking have depressed your imaginative thinking !

WORKING TECHNIQUE.

Rational creative working technique must follow a logic sequence.
You will not start developing ideas unless having made clear to yourself what their objectives should be. The objectives you lay down must also be related to the situation that require improvement.
It is also not practical to judge or select ideas or to work further on them before a reasonable number of ideas have been developed.

The following sequence has proved to be useful:

1. Collect information
2. Determine the required functions
3. Develop ideas (Brain storm)
4. Select ideas
5. Develop solutions from the best ideas
6. Cost calculate the alternatives
7. Select Solution

1. Collect Information.

First make sure that you know the existing situation.

Collect the information you require to have a sufficient picture of the present situation. Dependant on the study object, the requirement may include; costing, technical situation, alternatives available on the market, raw material or seasonal problems, short-comings, difficulties, market coverage and what ever is important to know about the present situation.

2. Determine the Required functions.

What to expect from the new solutions, should be clearly and consisely defined. The ideas to be sought should clearly aim at covering these functions. Hence it is the functions which one should try to cover that are important to identify, not only those that earlier solutions cover to a higher or lesser degree. For example, new industrial projects in Indonesia should generally as much possible satisfy the following functions:

- Save or provide foreign currency
- Make life better for the ordinary Indonesian people
- Limit the capital requirements
- Give employment and income to people
- Be safe against collapse and having potential for growth
- Utilize available local raw materials and prevent exploitation of scarce resources.
- Have manageable demands to skill, housing, power and other inputs
- Prevent too big seasonal variations.

It is important to identify the real goals, and we should avoid functions that merely specifies particular ways of solving the problems. Hence in the example above it is employment income, growth, potential, and safety that are required more than profit margin. Further, saving of foreign currency can be done in many ways, and is what counts, more than just thinking of export. Similarly to cover the needs of the people is better goal than merely identifying a market potential.

3. Develop Ideas.

Most of the time we are using our creativity and solve problems individually and separately, and that has most often to be so. Some times is it however very useful to sit together in a small group of 3 - 4 people to spin ideas (Brain storm). The positive interaction between different people will normally help diverting from too traditional thinking. Whether spinning ideas alone or in a group; use the same principles:

1. Mention all the ideas you can think of, vague or well considered ones, realistic ones and also those considered more utopic and wild.
2. List all the ideas on paper without any screening
3. Do not critizise any of the ideas, but think how you can improve upon them. A poor idea can lead you to create a new and better/one
4. Make many ideas, at least over 30, very well 100. Do not stop because you think you have got one idea that is brilliant.

When working in group, it is of course important that all the participants are well informed in advance and have got the list of functions (which may also be improved upon)

4. Select Ideas.

Go through the list of ideas. Look first at the most untraditional ones and the simplest ones, those involving less costs. If they have serious short comings; consider how they can be improved upon. Your job is not to determine what is impossible, but to change and develop the ideas, and from there to create realistic solutions.

5. - 6. Develop Solutions.

Having worked on the ideas and found realistic alternatives, select initially the few ones appearing having the best potential in terms of simplicity, low costing and function cover; develop them into solutions. Than calculate the costing before finally selecting alternative for implementation.

7. Select Solution.

The selection should always be based on a weighing of how well the final solution covers the required functions against its costing.

It is important that we reach a best possible solution; i.e. that we can cover the required functions as best possible, but it is also a question what are the cost involed. Very often one will find that the best alternatives cost less. But when cost increases with quality, a judgement must be done, carefully weighing cost against value. It is hence advisable to quantify with figures both the costing and the value side, making clear the extra costs for added value.
The working technique, as explained above, can be adapted to the unlike working situations and problems that require creative thinking. One will normally however find that no much change of the methodology is required. Shortly spoken; the technique is this: Get to know the situation and the purpos - Make many ideas - Develop the ideas further before you judge them - Weigh cost against value when you do final selection.

AN OPEN MIND.

If you in addition to adapting a rational creative working methodology also can develop an open mind, you will be unlikely more creative than before !
You must than first come to know what blocks your mind so that you can work actively on improving first of all your attitudes !
The most serious hinderance is your habit thinking. You cut off your own and other peoples good ideas with viewpoints you have adapted from past negative experience, from what you think is expected of you, and also simply because you are lazy ! You normally prefer to find out what is wrong with the idea, and to give good reasons for that, rather than involving your brain in finding out whether what you say really is corect, or in finding out how the idea can be adapted or modified.

You are a manufacturer of "Stumbeling stones and use them as your tool to prevent further involvement !
Here are some of the usual stumbling stones:

- That is not the way we use to do it
- It does not comply with the requirements in Indonesia
- It is not within the frame of the Government policy
- If it had worked, somebody would certainly have done it before.
- Why change ? We are satisfied the way it is now
- You have not been requested to involve in this
- Our situation is different
- You do not know what you are talking about
- All our experts have already look into the matter and approved it.
- That is nothing new, we have already analysed the situation
- It does not fit into our existing plans
- Certainly it is a good idea, but you seem not to understand the problems that are implicated.
- Somebody tried it. He failed completely
- It know it will not work.
- Oh yes, you are very right, it would have been good if only we had the capacity.
- That is already in our budget
- I will think it over. You will hear from me sometimes.
- I do not like it
- Just now we are too busy.

You have certainly felt fustrated when others have used these expressions. Can you now watch your own steps too see that you yourself will use a more constructive approach in the future ?

Jakarta 21st April, 1983.

Bjørn Lidsvig,
Industrial Engineer UNIDO.

DP/INS/78/078/IE

IE.83-49/V-04.

LISTING OF PROJECT OPPORTUNITIES - SOURCES OF PROJECT IDEAS

Before starting to work out a comprehensive feasibility study for a project is it important that we select the most suitable project.

We should also not select a project without first listing the projects which we could consider as possibilities. That is to make sure that we make our selection among the best opportunities. It is therefore very important that we as far as possible list adequate projects that can be implemented under our umbrella.
To give this a flying start we have enclosed made a list of 280 projects, roughly criteria-evaluated and with a brief description for many of them.

This list is however not in any way exhaustive and we would prefer if you can prolong the list with ideas from your own and other sources before doing a rough selection of a number of them for further studying, screening, and ranking.

The question then arises; where will you get the project ideas from ? Again our list is not exhaustive but we can indicate a few sources you can consult with at an early stage (preferably in due time before any assembly).

1. **Use your own imagination**

Which projects are the country or the local community lacking ? What can be made from locally available raw materials ? How can the working programme be enlarged for the local existing industry ? Which technologies do the local industries represent ?. Which technologies are lacking or weakly represented ? What is lacking in the rural house-hold and what can make life easier there ?.
List everything you have in mind and leave the judgement as a next step !

2. **Go through commodity lists**

The ISIC industrial project code is available. Go through it crossing out projects worthwhile considering. The going through price-lists and stock-lists of certain traders as e.g hardware merchants, may prove to be useful. Go through trade cataloques, go through directories over commodities and processing machinery from foreign countries.
Go through the telephone directory yellow pages. What should be duplicated ? What should be improved ? What should be locally made ?.

3. **Go through Import and Export statistics**

The official annual statistics for Indonesia for export and import are quite detailed and comprehensive, specifying costing and quantities, distributed on individual local ports and on corresponding countries. Which of the products in the

import list should we consider to manufacture ? Which of the exported commodities can we manufacture more of, or rather, which of all the exported raw materials should be processed and made into finished products before exporting ?

4. Visit shops, traders and Super-Markets

Go through the shelves. Why do we see all this imported goods that we could better make locally ? Make notes as you go through ! Discuss with the traders and the shop owners. They will tell you what is fast moving, what can not be obtained locally, and what they have had in mind them-selves for local production.

5. List the agricultural products and the agricultural wastes

How can they be better utilized ? All agricultural wastes and crops can be developed into high value products. Which are they ?

6. Utilize the town wastes

What goes into the dustbins in industry and house-hold can all be recycled to create new high value products. Look into the dustbin, list the content and its uses !

7. Talk to the Industries

What do they require of under supplies ? What is not adequately available for them today ? Which of their wastes can be utilized ? Which product ideas have they had in mind for them-selves ?

8. List products/projects to fit for under supplies

to major assembly industries as car and vehicle assembly industries, motor bike industry, bikes industry, engines and road working machinery manufacture, electronic, radio, television and telephone industry, and agricultural machinery industries. Study the assembled products and see for yourself what can be made.
Go also through the directories of Industry in Indonesia. What is lacking. Who should have under supplies ? What should be duplicated ?

9. Talk to financers, technology experts and institutions

Banks and other financers have project ideas. They get many proposals for consideration. Technology experts know the trend within their trades and are in contact with foreign parties. Research and other institutes search for existing and new products and methods, test them and get many requests. They maintain opportunity lists. Government promoting offices are also supposed to maintain opportunity lists. (Do you?).

10. Which local skills are available ?

List them and consider how they can be utilized to make new important products.

11. Talk to the potential Entrepreneurs

Which projects do they have in mind ?. What would they themselves like to start manufacturing ?.

Many others can also propose important industrial projects.
List it all down.

After having the long list ready, sort out the projects that you think will have major interest in your case. Pick on those which are much needed in your area and are in short supply, are imported, can be made from local raw materials, from wastes, are not too difficult to make or demand too high capital, those ones introducing new needed technology, these utilizing local skills and these which can fit within existing buildings.
The list may still be long, shorten it slowly but do not throuw away any idea ! Finally you will have to do further investigation and screening of some few selected projects.
Please see further notes on the proposed procedures for screening and ranking .

Jakarta, 24th February 1983

BJORN EIDSVIG,
Industrial Engineer - UNIDO.

DP/IND 78/078/11.

IE.83-53/V -05.

IDENTIFICATION AND SELECTION OF ENTREPRENEURS.

Unless getting a first class entrepreneur, the best project can be turned into a disaster. Therefore, start in time and see that you get hold of the best possible candidate to implement the project. You must start searching for him as early as possible because you will need time to know him sufficiently. You also will need to have a good number of applicants from whom you can select the few best as potential candidates, and from whom you finally again can select the one who after some experience of the few, prove to be the most potential among them.

You can divide the task into stages as follows:

1. Announcing that applicants from potential entrepreneurs to take up projects, or one particular project, are required.
2. On request from interested people provide them with initial information, preferably both written and verbal and an application form.
3. Select the apparently most prospective from the applicants and call them for an interview (E.g. 12 people).
4. Interview them and let them if they still appear prospective do an entrepreneurial aptitude test.
5. Select a few (e.g. 3) condidates for the project and inform them separately about the selection.
6. Give them individually small tasks related to the project, preferably one task after the other. That may assist you in collecting required information, and more important; it will help you to know the candidates better and make a correct final selection easier.

7. When the feasibility study is ready, select the most potential candidate, inform him about the selection and give him in writing a time limit for the solving of initial tasks of project implementation, including securing of project financing.

8. When this is fulfilled and implementation has started, inform the other applicants in writing accordingly and request them to inform you;

   a) whether they want to withdraw the application

   b) whether they want the application to be pending a possible later duplication of the project or any other future available project, or

   c) whether they want to send a fresh application for a particular project of their own proposal

On the above we can comment further as follows:

1. Announcing projects.

The project can be announced in a noncommitting way, separate or together with other projects, when there is a clear intention to complete the planning of it. It is under no circumstance wise to wait until the planning is done. That would prevent possible assistance from the clients, it hinders learning them better to know, and it creates dangerous delays.

Several ways of announcing exist, and it seems necessary to gain some experience to find out which way is better. The following ways can be mentioned, but other alternatives also exist:

A. Pass the information on to known potentials and to colleagues and friends for them to do the same. Use also the internal notice boards.

B. Make announcement in the internal BIPIK bulletin and possibly in a trade journal.

C. Send circulars to those who have applied for projects earlier, supposed to appear in you register.

D. Announce through the PENILIK representatives and the TPL's for them to encourage first of all people with known potential and to announce the matter in gatherings.

E. Announce equally through the Village chiefs, and for them also to inform the local LPMD board to notify prospective people.

F. Announce to relevant schools and training institutions, where the students may be suitably qualified to run the projects in question.

G. Announce through local newspapers and TV programmes, preferably rather in the news communication than as an announcement.

Have in mind, during announcement and during selection of channels of information, that you are much more interested to reach the really potential clients rather than getting applications from many people with low potential.

The announcement should be sent or handed out as a circular writing instead of being communicated only verbally.

Dependant on the project the announcement may contain some rough information about:

- Type of project, or products to be made
- Suitable location(s) for the project
- Anticipated financial requirements
- Requirements to the entrepreneurs
- Anticipated number of workers
- Building and power requirements

- Possible specific demands of the project
- Encouragement to apply, and information on application procedure.

2. Provide information and request for Application.

Provide the information which is required. If the applicant has no potential, let him know, otherwise let him have the required application form and inform about the time limitation.

The application form may contain the following information questions/requirements:

A. - Name, address, telephone, date age and signature of the applicant

B. - Which project do you primarily apply for, and which projects are possible second and 3rd choices ?

C. - If you on your own have identified any project possibilities and want our assistance in planning or implementation, than mention this (these) project(s) separately and give as many details about the project(s) as possible on a separate sheet.

D. - Specify if any, your knowledge/experience within management of manufacturing or trade.

E. - Specify if any, your knowledge/experience within the technology of the project and of other relevant technologies.

F. - Specify if any, your knowledge/experience within bookkeeping and economy control.

G. - Describe the personal qualities you think that you have, that makes you especially fit as an entrepreneur for the project.

H. - Describe similarly the personal qualities you think that you have that make you less fit to run the project.

I. - Describe your present occupation or work

J. - What is your present yearly net salary or income ?

K. - Which other activities are you engaged in and possibly which honorary positions do you held ?

L. - If starting the project will you continue with your present jobs and assignments ?

M. - Do you intend to start the project as a sole proprietorship or in partnership with others ?

N. - Who is intended to manage the project and what will be your position ?

O. - Where do you prefere to locate the project and where do you presently live ?

P. - Which is the capital you can invest in the project which you have ready available yourself ?

Q. - What would you consider being presently a suitable size project for you to run in terms of;

- total capital invested Rp _____
- number a people engaged _____
- yearly turnover in Rp _____
- size of building area, M^2 _____

R. - Which do you consider being the most important preconditions for the project to succeed ? (Rank 10 of them in order of importance).

S. - Which assistance do you require to be able to run the project efficiently ?

T. - Why do you apply for this particular project ?

U. - Any other information or comments that you consider important for the judging of the application.

V. - References.

3. **Select the most prospective applicants for Interview.**

You can from the application only get a vague clue about the fitnes and personal qualities of the applicants. It is normally easier to sort out some obviously unfit ones, than to determine any-body as fit . An interview is therefore necessary.

To end up with 3 selected potential candidates, it may be appropriate to call 15 for interview, expecting 10 - 12 of them to turn up.

Go firstly through the applications and sort out the obviously unfit ones and mark the answers in the rest of the forms with, + or a - mark as they appear fit or doubtful.

If that by itself is not sufficient for a clear selection of candidates for the interview, than fill the scores for each of the applicants in the picture into a form like this : (Mark 1 for a very doubtful situation and 5 for an expected ideal case).

Applicant - Judgement of functions :	Do your judgement reply to the following questions :	1 - 5 score for applicant no.: 1 2 3 4 5
- May he have a sufficient back ground within management ?	C D F R	
- May his technology back-ground be sufficient ?	E J K T	
- May this type of project be fit for him ?	B C K [illegible] T	
- May this size of project be fit for him ?	A C [illegible] T	
- Can the project get a suitable location ?	A K L O	
- Is it likely that he will have the required resources ?	J K P [illegible]	
- Does he appear realistic and honest ?	C G H L A S	
- Does he appear sufficiently motivated ?	C G [illegible] T	
- Is he working suitably independant ?	G H K S	
- Does he appear being matured and hard working enough ?	C D [illegible] K R	
- Can he be expected to engage himself fully ?	G H I J K L	
S U M S C O R E		

Your over-all judgement is more important than the score in points, and you will also be aware that any judgement at this stage may be very wrong !

If necessary you can call on references for clarification.

4. Interview and Test

The aim of the interview is to determine as well as possible who will be best fit to run the project and to make a sucsess out of it.

To the extent that this can be determined through interviews no tests are required. The judgement however is difficult and some tests can sometimes clarify the situation better even if that is also far from any exact measurement.

Interviews are some-times done by individuals and sometimes by panels. Whithout doubt the most efficient is it when the interviews are done by more than one individual, separately and comparison and discussion is done first after recording the scores individually.

The importance of different personal abilities varies from project to project and it is often difficult to determine which ability is more important than the other. The ranking we have done below must therefore not be trusted too much, but the necessity of considering these factors may in itself help to clarify the judgement of the condidates.

Accordingly, we can indicate judging and scoring as follows:

Performance	Weight	Scoring and points for appliecants					
		No.:		No.:		No.:	
		Score	Points	Score	Points	Score	Points
- Personal fitnes	5						
- Ability and Understanding of Management requirements	2						
- Ability and understanding of technology and processing	1						
- Ability of sales, and market knowledge	1						
- Availability of required resources	2						
Total points							

The question of <u>personal fitness</u> is composed of very many different characteristics. We have asumed the following ones being the major requirements. E.g. risk taking tendency is given limited weight.

Going to the extreme, a gambler may still be able to ruin a project in a few days. That indicates that any proper valuation can not be done in a simple schedule like this and the overall judgement is often more important than the score in figures. Still we expect that the exercise will be of some guidance.

Specification of Personal fitnes.

Performance	Weight	Scoring and points for applicants					
		No:		No:		No:	
		Score	Points	Score	Points	Score	Points
1. Determination	5						
2. Initiative	4						
3. Creativity	3						
4. Industriousnes	3						
5. Common Sense	3						
6. Sense of economy and proportions	3						
7. Decision making efficiency	2						
8. Responsibility and Honesty	2						
9. Ability to utilize and ecourage others	2						
10. Ability to sell products and ideas	1						
11. Risk taking tendency	1						
Total points							

The Interview

The aim of the interview is to learn to know the person and to determine his fitnes to run the project; to find out the scores on the listed performances.

In the interview discuss about the project and find out his views and his personality related to the required performances.
His score must be judged on the total impression after seing his reaction to a multitude of questions. The following notes may assist during intervew and evaluation:

Determination: How determined is he to reach the goals he sets for him self ? Does he take a no for an answer and easily gives up ?

Use questions as: What will you do if you will not be selected for the project ? If the bank says no to financing ?
If you will not be admitted in the industrial estate ? etc.

Initiative: To what extent does he on his own decide to take action when it is required ? Use questions as:
Who do you think should investigate about market or raw materials for the project ? What does he think about matters as uneven local voltage, unstable water supply etc. Does he intend to take any initiative if such matters will create problems for the project in the future ?.
Does he make proposals on his own ? Does he take any lead in the discussion ?

Creativity: Is he in the talking proposing ideas how to solve problems as well as possible ? Ask him questions as:
If the market will be too limited when already started, what will you do ? Which other products do you think this project could make ?

Industriousnes: How hard working is he ? How far can you discuss with him before he gets bored or want to wind up ? When does he start and finish his working hours ? How well is he able to concentrate on the important topics of the discussion ?

Common Sense: Can he find simple and good solutions to small problems ? Is he logic and constructive in his reasoning ? Can he see reasons behind actions and situations ?

Sense of economy and proportions : Show him a temporary chart of the running cost budget for the project and get his evaluation and reactions.

Decision making efficiency: Is he too slow or too quick in making decisions ? Has he made sure he has got the necessary information before taking his decisions ? Ask him questions as: If we offer you the project, is it sure you will take it ? Are you prepared to sign a contract now ? Can you agree on the selection of machinery now ?

Responsibility and Honesty: Is he committing himself too easily ? Find out how much he can invest. See to which extent he is willing to commit himself to invest say 20 or 50 % more. See to which extent he will commit himself to implement the project quicker than possible.

Ability to utilize and encourage others: Is he able to delegate ? How will he go about doing all the preparatory work for the project implementation ? Explain him how it will take time for him to do all what is needed. See his reaction on that. Which promises has he now been able to make you give about the further proceedings ?

Ability to Sell Products and Ideas: Is he convincing in his talk ? Is he friendly and positive ? Do you trust what he says. Are matters clearly demonstrated and make obvious for you ? If he can sell himself, he can certainly also sell his products !

Risk taking tendency: Do he require too much security ? Or is he too much of a gambler ? The last is much more dangerous for the project than the first ! Does he take part in games where money is involved ? Does he easily accept the idea to participate in continued preparations not knowing if he finally will be selected? How would he have reacted to pay an application fee for the project if it was required, not knowing its fate, and not in order to increase particullarly his potential.

How much could he have agreed to ? You can judge well from that provided he is honest. Similar questions can be asked to find out his knowledge and understanding within management, technology and market. Some quick direct questions will often prevail whether he has reasonable knowledge or not.
If the candidate can not be screened out as non potential after these questions, give him a practically oriented test, at least within these 3 last mentioned topics where one can find straight answer to questions and relatively easily be able to measure performance.

The tests, especially for technology and market, may be made according to the specific requirements of the project.
Questions should not be about definitions or expressions, but geared to sort out whether he would be able to act wisely !

5. Select Candidates and inform them.

As indicated, about 3 candidates should be selected from the interviews/tests. To have more than 1 candidate is important, because the one may easily fail, and the project will be endangered. It may later on take too much time to select and come to know a fresh candidate.

The 3 candidates should not be ranked, but appear with equal chances. A ranking can more easily be done after some time when learning them better to know.

It is hoped, that the above procedure will do the selection of the 3 candidates possible without making too big mistakes. One will get the best possible clue if 3 different interviewers compare their notes after separate interviews. If there is no sufficient time for that, at least the one and same person should interview all the candidates on the same topic.

Inform the 3 selected candidates. Do not let them know each other, but let them always know that they represent 1 of 3 possibilities and that the project in no way is committed to them or can take any responsibility for them what so ever.

6. Give the Candidates Small tasks related to the project.

Tests and interviews may sometimes be very misleading. It is too easy to fail, measuring their ability to convince about own superiority, rather than measuring the real qualities ! When giving the 3 selected candidates tasks, one will see whether they live up to the impression one got during the interview. The tasks should not be too big as that may make too tight ties to the project, and the tasks should preferably be related to the candidates own connection with the project. The following tasks may be useful:

Prepare a list of possible premises. Give us a letter from the bank or the landlord confining that they will accept you, specify your connections within the trade and give data about them, specify the list of equipment as you prefere it, etc.

7. Select the Entrepreneurs.

When the feasibility study is ready, the entrepreneur must be finally selected and an application for financing sent to the bank immediately.

The selected entrepreneur should now receive a letter committing the project to him and specifying the conditions and time limits that he must comply with.

The letter must also state that if conditions are not fulfilled in time, the project may automatically and without further warning be taken from him and passed to other candidates, in which case the project will not in any way, economically or otherwise, be liable to him.

8. Message to other candidates and applicants.

The further applicants and candidates should first get the final message, when implementation has started, that they will not be considered for the project. Get to know from them whether they withdraw the application, whether they want it pending for a possible project duplication to be considered later or another project to be offered, or whether they want to apply for a particular project of their own proposal.

Jakarta 9th March 1983.

Bjorn Lidsvig,
Industrial Engineer - UNIDO.

IE.83-100/V -13.

AIMS OF THE FEASIBILITY STUDY

When preparing a feasibility study, the task is not just "to write something" about the project, to make it look good, and to satisfy the requirements of the bank. To make a feasibility study is to construct, to shape, and to tailor a best possible industry, not so much to see if the project is viable, as to search for the most viable or most profitable solution. The difference between a good and a poor feasibility study is the difference between good and poor choices. It is the difference between good and poor industries !

Hence, the feasibility study must give the best possible answers to the following questions:

1. How should the project be made ? What is the best and most economical solution within the following areas :
   - Product execution and product varieties to be made
   - Selection of technology and production equipment
   - Deciding on capacity and production volume
   - Selection of location, building arrangement and lay out
   - Selection of ownership and management
2. Is it profitable, and is it more profitable and beneficial to the owners and to the country than to involve in other investment alternatives ?
3. Which resources are required, especially as regarding capital and financing, building arrangements, raw materials, market and sales organization.
4. To be a work plan, a construction guide, and a time plan for establishing of the project.
5. To serve at informing others about the project, including the authorities, the sponsors, and the financers.

Jakarta, 1 June 1983.

UNIDO IMS 78/078,

Bjørn Eidsvig,
Industrial Engineer.

IE.83-101/V -14.

FEASIBILITY STUDY WORKING PLAN

Proposal for a standard plan for the content for preparation of feasibility studies.

1. INTRODUCTION

Short description of proposed project and articles to be manufactured and/or services to be offered.

This should high-light the following:

(a) Motive for the proposed project e.g. import substitution, export oriented, unsatisfied local demand, subcrontracting, etc.

(b) Summary of important findings like profitability, employment creation, protection requirements, location, etc.

2. SPONSORS, CLIENTS OR APPLICANTS

A. For New tailormade Projects:

Where the sponsors or applicants will be owner/managers, state:

(a) Name(s), Age, Nationality/Resident Status.

(b) Present Occupation

(c) Proposed Ownership structure;

(d) Management and technology qualifications and skills

(e) Relevant experience in particular industry or related industry

(f) Present Bankers, credit worthiness and ability to raise the required contribution and timing.

(g) Evaluation of the applicant and need for further extension services (engineering, marketing, etc.)

Where the sponsors or entrepreneurs do not manage the enterprise, acceptable key management and technical staff should be identified.

B. For new open projects.

(a) Project capacity related to market demand

(b) Recommended location(s) for the project and limitation in the number of projects

(c) The need to start of with pilot project(s) and recommended location of this (these)

(d) Requirements to the owners/managers regarding management and technology skills, capital contribution and building availability.

C. For Expansion/Modernisation of existing industry.

(a) Nature of present business

(b) Date and place of incorporation of company

(c) Principal shareholders

(d) Names of Directors

(e) Location of industry

(f) Number of employees; management; technical; skilled; semi-skilled and unskilled

(g) Operational and financial record.

(i) description of existing facilities
(ii) annual volume of production and sales broken down by principal product lines for at least three years
(iii) trends on sales and prices
(iv) utilization of productive capacity
(v) audited annual accounts for past three years
(vi) Bank reports and statements

(h) Evaluation of the applicants fitness for the proposed expansion, and when required, proposed or conditional changes in the structures.

3. THE PRODUCTS AND/OR SERVICES

The following should be highlighted:

(a) Product specification. The limitation of product varieties. (With justification)

(b) Mention allied products that can be substituted (when applicable)

(c) Mention other attributes of the product and its effects on the consumers or population.

4. IMPORT POLICY

(a) Specify existing import procedures and import conditions the product.

(b) Specify existing import procedures and conditions for imported raw materials used for the proposed project.

(c) Show anomalies that may exist between the tariffs for products and imported raw materials.

5. MARKET ANALYSIS

5.1 Present Production and Consumption

(a) To which extent is the product manufactured locally and imported ? If manufactured, give names of present manufacturers and if possible how much they produce.

(b) Specify capacity utilization for the local manufacturers and the competition situation on the market.

(c) What are the present distribution channels or organization for sales ?

(d) Mention quality of products presently produced as compared to imported ones.

(e) If products are imported, mention quantities imported during the last 3 - 5 years.

5.2 Demand Analysis and Projected future Development.

(a) Specify and justify the existing total demand for the product within a specified potential market area for the project. Specify geographical variations in the demand.

Try to arrive at so correct and justified figures as possible preferably through 3 different methods. Specify the information from the market and compare the figures from the different methodes of observation.

Dependant on the situation some of these information sources may prove useful:

- Direct contact with the manufacturers or a number of them
- Data from import, export, and manufacturing statistics.
- Trade organization information
- Importers or traders information.
- Pro capita consumption calculation, based on; income spending statistics and income statistics, consumer interviews, quantity of units to be serviced, etc.
- Comparison with figures from other geographical areas or other countries.
- Comparison with other products
- Limited test sales.

(b) Specify seasonal variations in the demand, and possible other variations.

(c) Specify possible unsettled demand. Judge the certainty of these quantities.

(d) Estimate expected change in the total demand in the future. Judge factors as:

- change to or from other alternative products
- change in population and income
- change over the past few years
- change between emphasis on different sectors of life, industry or in the community.

(e) Expected change in local manufacture from existing and other not yet started projects, and expected change in import and export.

(f) Conclude the rest demand for the coming 5 years, open for this project to compete within. Optimistic and pessimistic limitation figures may be used.

(g) Judge the strengths and weaknesses of the project competed with other supplies, estimate a reasonable market share and conclude the possible sales from the project.

5.3 Training System and Price Structure

(a) Specify the present normal trading system, and the prices on different level for the product, including import and ex-factory price, retail and whole-sale prices of the product

(b) Specify the recommended trading system and price structure for the project.

(c) Give any justification for change of prices, etc.

(d) Specify the market area for the project and the volume of trading units required

(e) Specify required marketing activities for the project

(f) Specify the marketing costs for the project.

6. RAW MATERIALS AVAILABILITY

(a) State type and origin of materials to be processed.

(b) For imported materials state whether the project must do any importation it self. For agricultural materials, state seasonality.

(c) State the methods available for transporting the raw materials to location of the industry.

7. LOCATION OF INDUSTRY.

State the following:

(a) Area of building or plot available.

(b) Infrastructure available - roads, electricity, water etc.

(c) Distance to sources of raw materials, labour and market.

(d) State reasons for choice of location and when applicable compare the cost consequences for different locations.

(e) For open projects outline the requirements to the location, specification of geographical areas, and the reasonable number of projects within the different regions.

8. PROPOSED PRODUCTION

8.1 Selection of technology.

(a) Do technical and economical comparison of technologies in question, confirming the differences in investment, costing and required production volume. A chart as appended may be used.

(b) Select technology for the project and justify the selection.

8.2 Production Programme.

(a) Specify the envisaged production year by year up to the optimum utilization of the installed capacity of the plant. (40 - 80 % dependant on trade and technology) justify the expectances from market and technology views.

(b) Specify number of shifts and hours per year to be worked. Seasonality of production should also be specified on the calendar months.

8.3 Management and skills requirement:

(a) Specify the experience of the management required to manage industry.

(b) Specify the number of Managerial, Technical, skilled, semi-skilled and unskilled workers required by the industry, yearly up to the third year.

(c) Specify possible expatriate staff requirement either for installation and commissioning of the plant or for training the workers and running the plant.

9 INVESTMENTS

9.1 Land and Building:

(a) Specify costs to be undertaken by the project, existing and new installations for land, building, road, fencing, sewer and water installation etc.; alterations repair and modifications

(b) If leased, state contract period, conditions of lease, amount and payment conditions.

9.2 Machinery and Equipment.

(a) Specify costs of all machinery and add necessary packaging, freight, insurance, import duty, sales tax, handling, bank expenses, clearing and forwarding.

(b) Specify installation costs for fundations, electricity, power connection, water, machinery, fuel

(c) Add contigencies and possibilities for price increases and currency fluctuations

(d) State individual capacities and confirm if seconhad.

9.3 Other Assets Required:

Furniture, transport means, fire extinguishing, office equipment, telephone, sundry deposits and prepayments.

9.4 **Pre-operational Expenses**

(a) Feasibility study fee, engineering fees and legal fees

(b) Company formation expenses and loan establishment expenses

(c) Training expenses.

(d) Interest during construction

(e) Salaries, power consumption and sundry expenses before start of operations

(f) Inputs for faulty trial products during trial production.

9.5 **Working Capital Requirements:**

(a) Cash (wages, salaries, and other cash expenses)

(b) Stock of raw materials

(c) Prepayment/precommitment for purchases in order, and under dispatchment

(d) Work in progress

(e) Stock of finished products

(f) Debtors less Creditors

10. **Financing of project**

	Total	Bank loan	Entrepreneur	Other specified sources
Land and building				
Building improvements				
Machinery and equipment				
Installations				
Other assets				
Pre operational expenses				
Working capital requirement.				
T o t a l				

11. PROFITABILITY ESTIMATE

	Yearly costs in 1000 Rp.		
	1ST YR.	2ND YR.	3RD YR.
Production quantity in % of nominal production			
Production quantity in no of units			
Sales Receipts:			
- Gross sales Receipts			
- Less sales tax, product transport, discounts, commissions			
Net Sales receipts			
Production Costs			
Variable Costs			
Wages (variable part)			
Raw materials, consumables			
Electricity, water-fuel			
Raw material transport			
Others			
Sub - total			
Gross Profit			
Fixed Costs			
Salaries and wages (fixed part)			
Rent			
Maintenance and Repair			
Stationery, Postage and telephone			
Sales expenses			
Transport and veichle expenses.			
Travelling			
Insurance			
Audit and licenses. Bank charges			
Depreciation			
Interests			
Sundries			
Sub - total			
TOTAL PRODUCTION COSTS			
NET PROFIT			

	Yearly costs in 1000 Rp.		
	1ST YR.	2ND YR.	3RD YR.
Corporate Tax			
Net profit after tax			
Return on investment or internal rate of interest.			
Return on equity			
Value added			
Employment (no of persons)			
Break-even point (% of expected sales)			
Investment/worker			

12. CASH FLOW

	YR. 0	YR. 1	YR. 2	YR. 3
Sources of Fund				
Profit before tax				
Depreciation				
Loan				
Equity				
Total Sources				
Uses of Fund				
Fixed Assests				
Working Capital Increase				
Tax payment				
Loan repayments				
Total Uses				
Cash Surplus (deficit)				
Accumulated Cash				

13. LOAN REPAYMENT SCHEDULE

Interest Percentage	.....
Loan repayments period (Years)	.....
Grace period (year, month)	.....
Installments (monthly, quarterly 1/2 yearly)	.....
Interest during grace period	.....
Principal + Interest repayments (shs.)	.....

14. LOAN SECURITY REQUIREMENTS

(a) Loan to be secured by fixed assets mortgage

(b) Loan to be secured by other collateral security like land title-deeds or property title-deed

(c) Loan to be secured by other acceptable security

(d) Personnal guarantee and floating debeture in fluctuating assets

15. CONCLUSION/RECOMMENDATIONS

- Discuss the viability of the project
- State which measures to be taken to safeguard the viability of the project
- Give recommendations about the sponsors or applicants of the project
- Request for approval and financing of the project.

Jakarta 2nd June 1983.

UNIDO IN~~S~~ 78/078,

Bjørn Eidsvig,
Industrial Engineer.

SELECTION OF TECHNOLOGY FOR INDUSTRIAL PROJECTS

- The success of any one project is fully dependant on selection of suitable machinery and equipment for the production.

- The equipment must be fit for the need, be economical, and have reasonable capacity.

- The selection must be based on comparison of operation costs, not on prices, quality or capacity alone and not on feelings!

Follow these steps in the selection of equipment:

1. Determine which products should be made.

   Make as few products as possible within the project and make products which can be made by help of the same equipment.

   Not only few machines will be required.

2. Determine the required capacity.

   The capacity must be big enough to allow for a reasonable profit for the project. (This is again dependant on the selection of technology.) The capacity need should normally require only a limited share of the market demand and not be higher than that the client can obtain the required working capital.

3. Cost comparison of technologies.

   Before comparing individual equipment, try to find out on which technological level the machinery should be sought. Do this by comparing the yearly cost for the different alternatives. Make use of the enclosed comparison chart! As long as the alternatives differ extensively, it might be possible to compare without collecting very detailed information and still get a reasonable picture of the degree of labour intensivity and mechanisation to be sought.

...2

4. Collect offers for equipment.

It might or it might not from the above comparison be possible to determine which technology to be used. If a final selection is not possible, then it may be necessary to collect offers for equipment on different technological levels.

Collect many offers, both from overseas and from local sources. Find out which offers and further information is available at KIE Nairobi or at other offices before going too far.

5. Compare the Costing of Possible Machinery.

Compare which total yearly costs one will get using the different alternative possible production equipment. Separate fixed from variable costs to see how the cost will change with different production volumes.

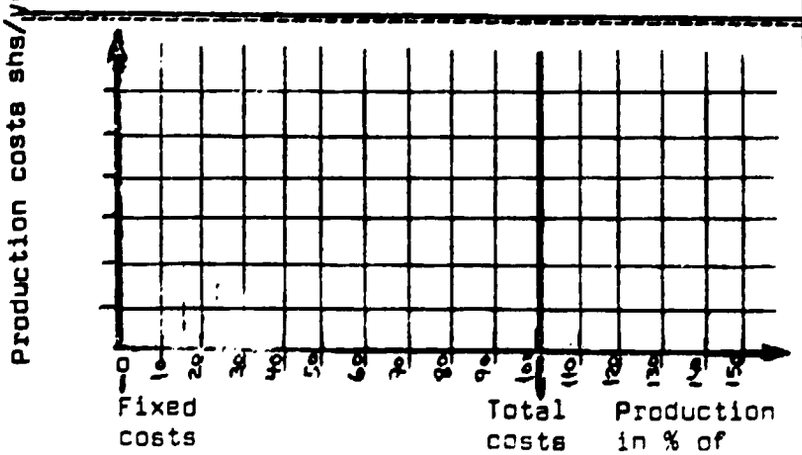
Parameters having the same value for all alternatives can normally be excluded from the comparison since it is the differences one first of all is interested in.

Alternatives with lower fixed costs are more economical at lower production and have better safety margins. They will also provide better return on investment. Whenever in doubt; select the alternative with the lowest fixed costs.

Machines comparison chart:

OBS: Costs being equal for all the compared alternatives can be left out of the comparison!

		Machine or Technology alternative A=	B=	C=
Gross Machine capacity	items/hour			
x No of working hours per year	(2140hours/shift)			
x Speed utilisation factor	(50-100%)			
x Techbical time utilisation factor	(50%-80%)			
x Personnel/administration efficiency factor	(60-90%)			
x Wreck production factor	(90-100%)			
x Seasonal factor	(30-100%)			
= Net capacity per machine	items/year			
Expected sales	items/year			
Required no of machines	number			
Required operation time for expected sales	% of no of shifts			
Product quality from the machine (Describe)				
Product price from this machine	(shs/each			
Total sales	shs/year			
Machine depreciation	% per year			
Rate of interest	%			
Floor space requirement	m^2			
Operators, skilled	No/shift			
Operators, less skilled	No/shift			
Waste of rawmaterials (incl. wreck)	%			
Cost of main machine as offered	shs.			
+ packing, seafreight, duty, salestax, clearing, local freight	shs.			
+ Additional equipment required	shs.			
+ Insallation of electricity machinery, water etc.	shs.			
Total machinery cost	shs.			
Fixed costs: Depreciation	shs/year			
Interest	"			
House rent	"			
Supervision	"			
Total fixed costs	"			
Variable Costs: Labour costs	shs/year			
Maintanence				
Material costs incl. wastes	"			
Electricity	"			
Fuel, water etc.	"			
Total variable costs	"			
Total costs	shs./year			
Sales less total costs	shs./year			
Return on investment	%			
Break even point	%			



Conclusion:

SELECTION OF TECHNOLOGY - EXERCISE:

A bakery making 5000 loaves of bread per day on 2 shifts require equipment for portioning of the dough into 500 g pieces for the individual loaves.

Equipment as follows on 3 different levels of technology may be considered:

A) An automatic electrically operated continuously working dough divider for 3000 pieces per hour, available f.o.b. England at £s 3,500.

B) An ordinary pointer scale for weighing up portions of 10 loaves lot. Thereafter dividing each portion into individual pieces of equal volume on a manual dough divider of capacity 800 loaves/hour. Machine prices: Scale shs. 2,000, Divider £s 350 C&F Mombasa.

C) A pointer scale + a knife available locally at shs.1,500/-. Operation speed for 2 operators together, 8 seconds per piece.

Make your own judgement for lacking information!

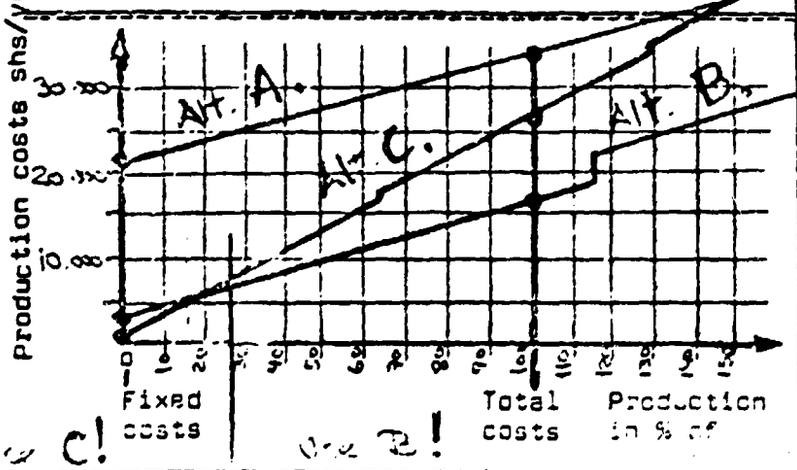
a) Make use of the enclosed comparison chart and complete it for all questions where the 3 alternatives are not equal. Determine the differences in yearly costs between the alternatives.

b) Complete also the cost diagram. Which equipment will you select and why?

c) For which capacity would you make a different selection?

Cost items being equal for all the compared alternatives can be left out of the comparison!

		A=	B=	C=
Gross machine capacity	items/hour			
x No of working hours per year	(2140hours/shift)			
x Speed utilisation factor	(50-100%)			
x Technical time utilisation factor	(50%-80%)			
x Personnel/administration efficiency factor	(60-90%)			
x Wreck production factor	(90-100%)			
x Seasonal factor	(30-100%)			
= Net capacity per machine	items/year			
Expected sales	items/year			
Required no of machines	number			
Required operation time for expected sales	% of no of shifts			
Product quality from the machine (Describe)				
Product price from this machine	shs/each			
Total sales	shs/year			
Machine depreciation	% per year			
Rate of interest	%			
Floor space requirement	m^2 additional			
Operators, skilled @ 500 + 20%	No/shift			
Operators, less skilled 400+20%	No/shift			
Waste of rawmaterials (incl. wreck)	%			
Cost of main machine as offered	shs.			
+ packing, seafreight, duty, salestax, C/clearing, local freight	shs.			
+ Additional equipment required	shs.			
+ Installation of electricity machinery, water etc.	shs.			
Total machinery cost	shs.			
Fixed costs: Depreciation	shs/year			
Interest	"			
House rent	" @ 100/- per m^2			
Supervision	"			
Total fixed costs	"			
Variable Costs: Labour costs	shs/year			
Maintanance	"			
Material costs incl. wastes	"			
Electricity	"			
Fuel, water etc.	"			
Total variable costs	"			
Total costs	shs./year			
Sales less total costs	shs./year			
Return on investment	%			
Break even point	%			



Use C!

Use B!

Conclusion:

Alt. B. is most economical for this capacity.

Alt. C. may be preferred for capacities less than 30% this.

Alt. A. may possibly be economical only for much higher production than

IE.83-56/V -06.

PROGRAMME FOR COLLECTING INFORMATION FOR PREPARATION OF THE FEASIBILITY STUDY

For calculation of project viability and writing of the feasibility study, the sufficient background information must be ready available when needed. That includes information about technology, market, entrepreneur and location.
The information must be collected and organized before we can start writing the feasibility study.

The following specifies the information which normally is required. What require the main emphasis will differ from one projects to another, but the most important will often be what is less obvious and more difficult to collect !

Go through the requirements in detail and make a list of the required actions. Start the collection with what require the longest time, which will normally be information which must be written enquires for, especially quotations for machinery.

TECHNOLOGY IDENTIFICATION

What normally use to be the biggest problem during the collection of information, is the time required for potential machine supplies to provide quotations. Especially is that so when we will have to collect quotations from foreign countries.
It is therefore important that we first collect only the very basic information required to give us necessary data for collection of quotations. If we have already enough information to do so, we should <u>first of all collect adequate quotations</u> for machinery and equipment.

In general the required information is the following, but the requiredments are extensively dependant on the product, etc.

1. Which product varieties can or should be made ?

   Determining the number of products and varieties on the production programme, one will have the following goals:

   A. Standardisation of the production, limiting it to as few product varieties as possible to sell without considerable problems. This make sense when we through standardisation will be able to operate more efficiently with lower costs, possibly save capital in stocks, and limit the investments in tools and machinery.

   B. Having as many varieties of different products that we will be able to sell enough to keep the plant in full operation.

Normally one will find that most manufacturers make too many varieties, not too few ! So try to reduce !

The execution, composition or construction of the products themselves, is also of the greatest importance for investment and operational costs. This should therefore be carefully studied at one stage or the other, to ensure that unnecessary machinery and tools will not be bought, that the cost of materials or processing will be limited and that the product will satisfy the functional requirements. Studying especially together-built products properly, is it amazing how big savings that are possible in operation costs and also in investments.

To the extent that this is important for the selection of manufacturing equipment; do the first rough analysis at the very initial stages.

2. **Which influence has selection of the product construction on technology, investment, and market ?**

In the above mentioned analysis, be sure that you are aware of which equipment is required, so that you can actively search for alternatives with limited requirements to machinery and tools. Also make sure that the varieties you want to make, are those that the market will become pleased with.

3. **Which Technologies are available ?**

This is a very important question. Selection of technology is a main factor for the viability of the project.
The technology selection is a question about :

A) **System** of working to be used, and which different processes will be required.

B) Degree of **mechanisation.**

C) **Sophistication** and **robustnes** of the manufacturing equipment.

D) Machinery **capacity**.

The **system** to be used may determine not only product execution but also material selection, possible capacity, labour, costs and quality. Should a bowl be hammered into shape, welded, folded, spinned or pressed ? Should bolt threads be rolled or cut to shape ? Should drying take place in the sun or in a heated dryer ?

The possible degree of **mechanization** may often vary from fully manual working to fully automatic production.
The requirement will normally be some-where in between.

Sophisticated equipment is normally less robust and more liable to repair and maintenance while the most robust equipment is normally very unsophisticated. In most cases unsophisticated, robust equipment are to prefere for sophisticated delicate equipment bringing maintenance and operation problems.

The capacity is often determined by the above 3 characteristics. What is important is not to get a capacity to match the demand, but to get the lowest possible production cost for reasonable expectanicies to production volume. One will hence regularly prefere to start with a capacity far below the market demand.

No final selection of technology will be done at this stage, and it is often better to collect quotations on different levels of technology, but it is important at least to get a good idea of which levels of technology that may become the most economical. Therefore, before collecting any information, do the exercise of comparing yearly costs of different technologies. Use estimated figures in a table as follows; Each alternative must be based on the same number of manufactured units:

	Alternative I	Alternative II	Alternative III
- Cost of Labour - Cost of Electricity - Maintenance costs - Depreciation of machines and equipment 10 % - Interest on machinery 11 % - Possible differences in material costs			
Total yearly costs			

If one of the alternatives have definitely too low capacity, base it on duplicating, using 2 or 3 sets of machinery. Be also aware that it is always better to start in a too small, rather than a too big scale !

4. Where is information about the selected technology available ?

May be you had already enough information to find out the above. If not, you must seek further information.
Dependant on your requirements, it may include the following:

- The building up of the product
- Which processes are required
- How the processes can be done and on which production equipment
- How processing and equipment can wary in its construction and use
- Processing time requirement or manpower requirement
- Which are the suppliers of machinery and raw materials.

When you require further information on this, try the following sources:

A. Machinery and raw material suppliers. The suppliers will often have the easiest available and the most up to date technology information. They are also eager to share their information with you, because they want to sell their products. The suppliers will always remain your most important information source. But of course their information is always dominated and coloured by their wish that you will use their equipment. As long as you yourself do the necessary comparison and selection you will be safe enough.

You must than be sure that you get information from alternative suppliers of different equipment and on different level of technology.
Can you not get sufficiently balanced and complete information from the suppliers, than go to other sources !

B. Manufacturers using similar technology. Existing manufacturers will allways be able to give you very specific and accurate information about the way they do it and the equipment they use. The problem is only that they do not always know sufficiently about the process when using other types of equipment. May be you can visit a few manufacturers using different equipment ?

C. Engineers in the trade. You can find engineers on all levels within all technologies within manufacture, sales, use, research, and consultancy. If any-body is available, if he has the required skill, and if he is willing to inform you without any charge, you can get much good information in a very short time !

D. Literature. There exist books about everything, but they are not always up to date, it may be cumbersome to find them and to search through them. If you need to go to the literature and the required book is not readily available, look through the list of the many hundred libraries in Indonesia, see in the list what they spezialize in and ask the local library to assist you.

5. Which suppliers exist for the required equipment ?

Who should be contacted for getting machinery quotations ?

In next to all cases there exist somewhere machine manufacturers doing regular production and having many years experience in the production of exactly what you require. Make sure that you get your machinery from one of those, and not from somebody who will make it especially for you and says that for certain; it will be much cheaper and just as good. Just be sure; it will not !

Make use of experienced suppliers with good records for the supply of equipment. Make use of Indonesian suppliers if they are good enough, but do not hesitate on going to foreign suppliers if it is necessary. You can choose between the following alternative suppliers:

A. Machinery manufacturers
B. Machinery traders; stockists or representatives
C. Machinery traders who are shopping around to find alternatives for you.
D. Suppliers of ready erected plants

A. The lowest costing alternative you will get when negotiating directly with the machinery manufacturers. Unless dealing with a stocklist, it will also mean the shortest time requirement before delivery. Also no misunderstanding will be created through any middlemen. In general this is the best alternative if you can live up to the requirements of selecting, planning, and followup.

B. The manufacturers may have established traders. If these are efficient and knowledgeable, and keeping stocks of machinery and spareparts, they may be of benefit. If that is not the case, they may just create cost and waste of time.

C. The shoppingaround trader may be useful if he really is able and willing to do a better selection than yourself. That often is a doubtful question and you will normally pay more for the equipment. Ask him to give you the manufacturers quotations, but he will still request them to add in a commission to himself.

D. If the plant is very complicated and can not be installed by local people, tham a ready installed plant can be required, but normally it will be better to request the machine supplier to do the job. Also will it normally be bettwe to buy the equipment directly and rather establish a contract for the installation only.

When it comes to finding the addresses of suitable suppliers, there are many sources and you must use them well to be sure that you find the most adequate supplier. Again inquire with people around you. Inquire with users, engineers, traders and manufacturers to find out which (countries and which) companies can serve you best. Make use of machinery or export directories from different relevant countries. If necessary, contact trade promotion offices in their respective countries.

6. Collect quotations for adequate equipment.

Knowing the adequate suppliers on the possible levels of technology, please have the quotations collected as soon as possible . The suppliers will often take time in sending quotations and it is therefore important that no unnecessary delay occurs in getting the inquiries sent. It is also no need to wait with sending inquiries until one know most of the suppliers.

Give the supplier as much information about your requirements as possible. If not, he will just send you a letter to ask that sort of information.

When adequate, you can give the following information:

- Required capacity of the machine, either in the form of production volume or major machine specifications as the products may require. Keep the requirements flexible so that standard equipment may be used.
- Specify information about raw materials when that may be of importance.
- If necessary, mention number of the shifts or hours to be worked.
- Working conditions, especially voltage, electric frequency, phases and system.
- Any other information relevant to the process.
- CIF conditions (Cost, insurance, and freight included) up to which harbour.
- Explain that you require a plain and robust machine, of their simplest type without any special sophistication.
- Stress that the quotation is urgently required.

The more uncertainly there is about the suppliers ability to cope with the requirements and the more spread there may be in execution and price of the different equipment, the more inquireies you will have to send.
Also not everybody will be in a position to quote, and some quotations will be very much delayed. To get as little as 3 useful quotations, you may have to send as much as 10 - 15 inquiries, and very often you require more than 3 quotations, to have a reasonable possibility to get offer for adequate equipment. Do not put up too may intricate questions in the inquiry, only the most important ones. Otherwise you may risk getting no reaction at all. You can always get the lacking details later on.

Do not let the supplier understand that you are sending many inquiries. That may make him loosing interest. Always send him original or typed letters, never copies or duplicated inquiries !

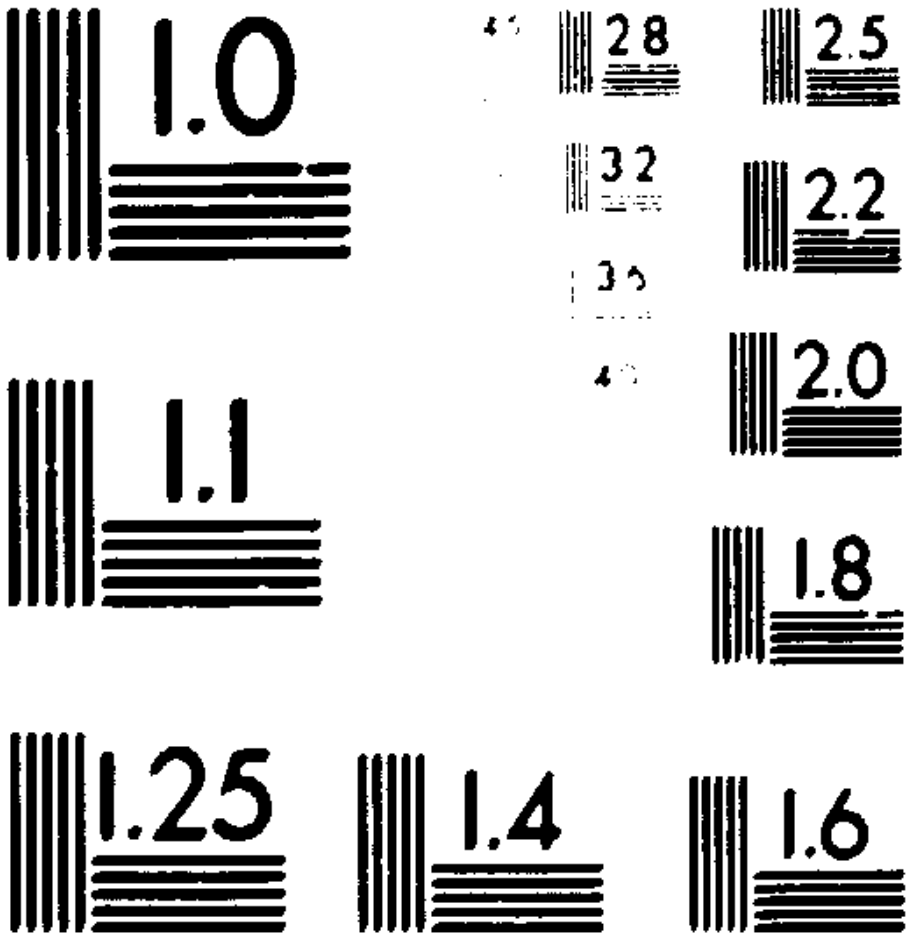
7. Collaborate with the suppliers until the quotation cover the requirements.

If 2 weeks have lapsed without any reaction from the suppliers (that it has been pending with him for one week), send a reminder ! Inform him about the urgency, and tell him to inform you whether he is in a position to quote or not. Ask him, if he is not yet ready to send the quotation, to inform you when it can be expected and what is holding him. Ask him, if he can not quote, to refer you to a suitable supplier.
When you get the quotation, go through it immediately. It is quite likely that you will find it unfit. The equipment might be too sophisticated, having too high capacity, being too expensive or being for a different process all together. Inform him urgently about the situation and ask for ratification.
Sometimes it may be required to contact him again and again before the situation is clear. Do not waste any time on that, act without delay !

CONSIDERATIONS FOR COLLECTING INFORMATION ON RAW MATERIALS FOR THE PROJECT.

First of all clearify which materials will be required in which quantities. Clarify also which dimensions or qualities that can be accepted.

Having this list ready, you mainly need to know to which extent requirements will be available and to which prices.



You must contact the suppliers. Dependant on the volume requirements, you may get the requirements from local stockists, from centrally located distributors, or directly from the manufacturers. From the local stockist you may settle your day to day requirements, but the prices may be too high.

The manufacturer may offer you the lowest prices, but the question is whether the required quantities will be high enough to qualify for supplies directly form him. If it is dependant on direct shipments from abrood, the delivery times will be uncertain, and you must calculate with stocks of 3 - 4 months to be sure. If the local representative of the foreign manufacturer can keep stocks locally for you, the price may not be much increased and you can operate with very limited stocks.

The economy and the working capital demand is quite dependant on the selection of raw material supplier, his prices and terms.

Be sure that freight and other costs are included in your calculation prices and be sure that delivery an payment terms are specified as the best possible since costs and capital demands are dependant on these.

Also see that you get clarification of regularity of supply and the occurance of possible seasonal variations which can cause the need for enormous stocks or stop in production for periods.

MARKET INVESTIGATIONS.

The prime market information can in general be collected in 3 different ways:

A. By Telephone. To simplify the work, use the telephone as much as possible. Unless when very important, complicated and voluminous information is required, try to get it through the telephone.

B. By requesting in Writing. The method is simple and the obtained information is reliable, but you should still avoid this as much as possible. People will not bother to answer you !

Only if specially requested, or for very distant contacts can it make any sense to write.

C. By your Personal Visit. This is applicable to the most important information and sources and when you could not get sufficient response on the telephone. Prepare a complete list of questions in advance, but be flexible during the discussions ! Important information you can get is often not covered on your list of questions. Make notes immediately and proper minutes soon after the meeting.

- Try to get the information quantified with figures. The information should be as reliable as possible, but is not required to be accurate !
- Prevent putting any answer into the mouth of the person you interview; he gladly agrees with you, even how wrong it might be !
- Do not take a "no" for an answer. If you do not get a satisfactory answer, ask in a different way again, may be after a few minutes, until you at least get the main information you require.
- Be aware that people tend to exaggerate information to appear more brilliant. If you can carefully arrest some exaggeration and he understands that you are experienced enough, he may become more careful with his figures !
- If you want frank and open information, be frank and open yourself. When people see that they get information through giving information, they will be much more open to you. Confidence creates confidence !

The primary information we should get, is first of all the following :

- Which product varieties exist on the market and how is the demand distributed between the varieties ?
- Which quantities are sold and how is that distributed on the nearby and further away markets ?
- Which are the prices for the different varieties ?
- Which are the normal trading channels in the trade and how is the price building up from manufacturer to retailer. Which profits are normal for the different traders and which costs (freight and others) apply of the way ?
- Application of Sales tax.
- Which are the normal payment conditions in the trade ?
- Which seasonal variation exist ?

It is normally better to get the above information through direct questioning of people in the trade; manufacturers and traders on the different stages. Get as much duplication of the information as possible. Much of it may be wrong and you need to cross check !

It is also very useful to get as much information as possible on some secondary questions. Those can vary with the situation, but will normally include the following:

- Strength, capacity, and capacity loading of the existing manufacturers. Plans for expanding existing industries and for establishing of new ones.
- General trends in the trade, about increase or decrease of demand.
- The possibility of other alternative products coming up in the future, expected to take market from the existing ones. Expected construction changes in the existing products.

In communication with the people in the trade you will normally be able to get a good picture also about these questions.
In addition to the information you will get within the trade, you can also check up some general information from the statistics which the trade connections will normally not know. If you check that information first, you may be able to communicate easier with the traders. Inform them, and they will inform you !
Statistical and theoretical information to be obtained should include the following :

- Production volume according to the manufacturing statistics.
- Product tariff number Import and export policy, Rates of duty.
- Import and export volumes over the last few years.
- Calculated consumption based on the size of local population and the normal distribution of the household income available in statistics.
- Comparative consumption in other countries, based on their statistics.

Compile the information nicely together in the file !

ENTERPRENEURS.

Identification and selection of entrepreneur has been handled in a separate paper.
The information that is required for including in the feasibility study, concerns the finally selected candidate and includes:

- Name, birth place and date, family situation.
- Address, telephone number
- Employment record and Present occupation

- Educational background
- Resources provinsion, Equity Capital specification, possible providing of industrial premises or plot, security for loans.
- Judging of the entrepreneurs fitnes to run the project.
- Any other relevant information as to the entrepreneurship.

LOCATION.

To write the feasibility study we should know the following about premises and location:

- The size, shape and standard of the premises.
- The location and road distance from the nearest market and central town.
- The size of the electrical installation. 1 - phase or 3 - phase, voltage. If the installation is too small, the distance to the nearest capable tranformator.
- Adequateness of water and effluent installations.
- The monthly rent, possible advance requirement, rent agreement duration. Possible requirements for building modifications.
- Telephone installation and local infrastructure.

Jakarta 12th March 1983.

Bjørn Eidsvig,
Industrial Engineer - UNIDO.

DP/INS/78/078/IE.

18th March 1983.

IE.83-58/V -07.

CHECK LIST

FOR THE COLLECTION OF INFORMATION FOR PREPARATION OF FEASIBILITY STUDIES.

Not all questions apply for all projects. Before starting the collection, tick of which information is not required, and date for when action is required for the rest. Be aware that your information source may require time before replaying to you. Always act as early as possible and start with the most crucial information.

At this stage, concentrate the questions on finding out the prevailing situation. Decissions for the project will come later !

Required Information.	Not required	Required date	Matter initiated date.	Matters settled date	Notes.
1. **PRODUCT**					
1. Which product(s) should be made ? (as few as possible to keep the project fully loaded)					
2. Which varieties (sizes, capacities, colours, etc) must be made to satisfy the market ? (limit as much as possible)					
3. What is the statistical no (SITC) and duty tariff no (CCCN) ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
4. Do there exist any standard specifications for the product, nationally or internationally ? What is specified in the standards ?					
5. Is any license required to manufacture this product ? Do there exist any patent-righs ? Will any royality or know-how fee apply ?					
6. Which other products can substitute the product, or how can the use of the product be omitted ?					
7. Which changes in the product on the market is likely to take place ? Which product subsitutes can be expected in the future ?					
8. Which is the rational construction or composition of the product ?					
9. How important is the product ? What will happen if this product is no longer available ?					
10. How perishable is this product ? Which special storage requirements exist ?					
2. <u>Market</u>.					
1. Which are the present sales volumes of the product, and how much of the sales are within the local market and within the province of the project ?					
2. How is the sales volume distributed between the different sizes or types of the product ?					
3. Which are the seasonal variations in the sales ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
4. What are the export and import volumes of the product ?					
5. What are the local production volumes of the product, and how is the local production divided between the major manufacturers or the geographical areas ?					
6. What are the local manufacturing capacities for existing industry for the product ? To which extent are these capacities utilized ? What is the reason if any manufacturer does not operate at full capacity ?					
7. How strong or dominating are the existing manufacturers ? Which plans do they have of increasing their production ?					
8. Which is the situation on the market for the substituting products ? Which plans are there to increase the production of substituting products ?					
9. Is there any unsettled demand for the product ? How big is it ? What is presently the substitution alternative ?					
10. For a comparison, which are the consumptions and the situation for the product in other areas or other countries, compareable with Indonesia ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
11. How have the sales volumes changed over the last years ? What are the reasons for these changes ? How can these change be expected to alter in the future ? What has been the trend for possible substituting products ?					
12. Which are the normal trading channels for this product in the market ? How does the different trading links operate ? Which spread are there on other trading systems within this product, and how sucsessful have the alternative trading systems been ?					
13. Which are the ex Factory prices for the product and the retail prices ? Which profits and costs are calculated on the different trading links between manufacture and consumer ? Which spread are there in these figures ? Which is the sales tax ?					
14. How does prices wary with different executions of the product ?					
15. Which are the normal import and export prices ? Which duty rates exist ? Is there any export incentive ? Will duty on raw materials be refunded on expostation ?					
16. Which are the normal payment conditions for the manufacturers ? And which spread are there in these conditions ?					
17. Which possibilities do other manufacturers have to lower their prices and improve their payment terms ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
18. Which concrete arrangements have been made with potential customers of the project to sell what, at which prices and conditions ?					
3. Raw Materials.					
1. List which materials will be required, with quantities, qualities and dimension required for a product unit.					
2. Find out which quantities/materials qualifies for purchase from which type of suppliers (from manufacturer to local retail stocklist)					
3. List potential supplier alternatives.					
4. Collect price quotations from 2 - 3 alternative sources.					
5. Get the payment terms.					
6. Which is the availability of raw materials ? Can scarcity become a problem ? Which seasonal problems exist ?					
7. Which other consumers exist ? What quantities do they require ? Which collaboration opportunities does that open, or which extra scarcity problems may arise ?					
8. May any quota or license be required ?					
9. Is any materials Perishable ? Do they require any seasoning ? Is any special storage facilities needed ? Or any special transport or handling equipment ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
4. Manufacturing Process.					
1. Which different processes are involved from raw material handling to finishing, packing, and dispatchement for the product and its components ?					
2. Which are the volume or capacity requirements or these different processes.					
3. Which are the expected economical levels of technology for the different processes which are involved ? (Estimate roughly yearly costs for the sum of labour, electricity, maintenance, depreciation and interests)					
5. Machinery.					
1. Which machines are required, and which capacities ?					
2. Which are appropriate alternative suppliers for the machinery ?.					
3. Collect quotations for the required machinery and equipment.					
4. Check the quotations, their information and the requirement to :					
- Adequatenes of working principle					
- Capability to cope with the production requirements, dimensions, and quantity requirements					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
- Gross and net production capacity.					
- Level of technology. Robustnes and quality of machine.					
- Working space requirements					
- Requirements to operators					
- Including of an adequate sparepart set					
- Maintenance requirements					
- Machine connections and concumptions as regards electricity, steam, fuel, other energy requirements, Compressed air, ventilation, water, drainage, cooling, etc.					
- Problems of the local climate					
- Price, landed cost and payment conditions					
- Delivery time					
- Shipment control, and part shipment not allowed.					
6. <u>BUILDING and INSTALLATION</u>.					
1. Determine approximately space demand and identify a suitable building.					
2. Which are rental conditions, possible advance payment of rent and the rental contract period ?					
3. Which are the shape of the building, doors and windows, building contruction and floor loading ?					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
4. Will the building be approved by the authorities for the intended use ?					
5. Which building modifications are required and who will pay for them ?					
6. To which extent are the following services adequate, who will improve them and what will it cost the project :					
- The size of the external electrical wireing					
- The water installation, water treatment, water pressure, water storage					
- Drainage system					
- Boiler installation, water heater, other heaters					
- Road connection					
- Security					
- Fire fighting equipment and fire protection					
- Internal and external transport arrangements, lifts, cranes, vagons, trolleys, etc.					
- Compressed air					
- Evacuation of smoke, vapours, dust, etc.					
- Storage facilities for raw materials and products.					
- Refrigeration, deep freezing, air conditioning, ventilation.					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
- Drying opportunities, climatizing arrangements, soaking.					
- Telephone connection.					
- Customers expedition, shop or product display.					
- Other special requirements of the project.					
7. LOCATION.					
1. Proper address of the place. How to reach there. Telephone number.					
2. Road distance from the nearest market and town. Status of the road.					
3. The nature and population of the place. Accommodation possibilities for staff and labour.					
4. Raw materials and market for the products in the vicinity.					
8. Entrepreneur					
1. Name, place and date of birth, family situation					
2. Address and telephone number					
3. Employment record and present occupation					
4. Educational background					

	Not required	Required date	Matter initiated date	Matters settled date	Notes.
5. Rescurces position. Equity capital specification, possible providing of industrial premises or plot, security for loans					
6. Judging of the entrepreneurs fitnes to run the project.