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Expert Group Meeting on Evaluation and
Follow-up of Feasibility Studies in
Selected Least Developed Countries

Vienna, Austria, 4 - 8 December 1978

COUNTRY PAPER ON NEPAL *

by

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PART I

a) **The Procedure and Practice for Initiating and conceiving Industrial Projects**

The Planning Commission of Nepal in consultation with the Ministry of Industry & Commerce formulates the sectors to be promoted in each five year plan in the industrial sector. With reference to this guideline, the practice for initiating and conceiving industrial projects in Nepal lies with both the public sector and the private sector.

In the public sector, usually the Department of Mines and Geology under the Ministry of Industry and Commerce undertakes studies on big mineral-based industrial projects. Studies are also sometimes undertaken by friendly donor countries in close cooperation with the Ministry of Industry and Commerce.

In the private sector, usually an enterprising entrepreneur conceives of an industrial project of his choice. He undertakes the feasibility study of the project at his own cost usually through the Industrial Services Centre or through some private consultants. To help the shy private sector in Nepal, the Nepal Industrial Development Corporation (a development bank) usually has feasibility studies prepared of projects to be undertaken by the private sector. Most of these feasibility studies are carried out by the Industrial Services Centre.

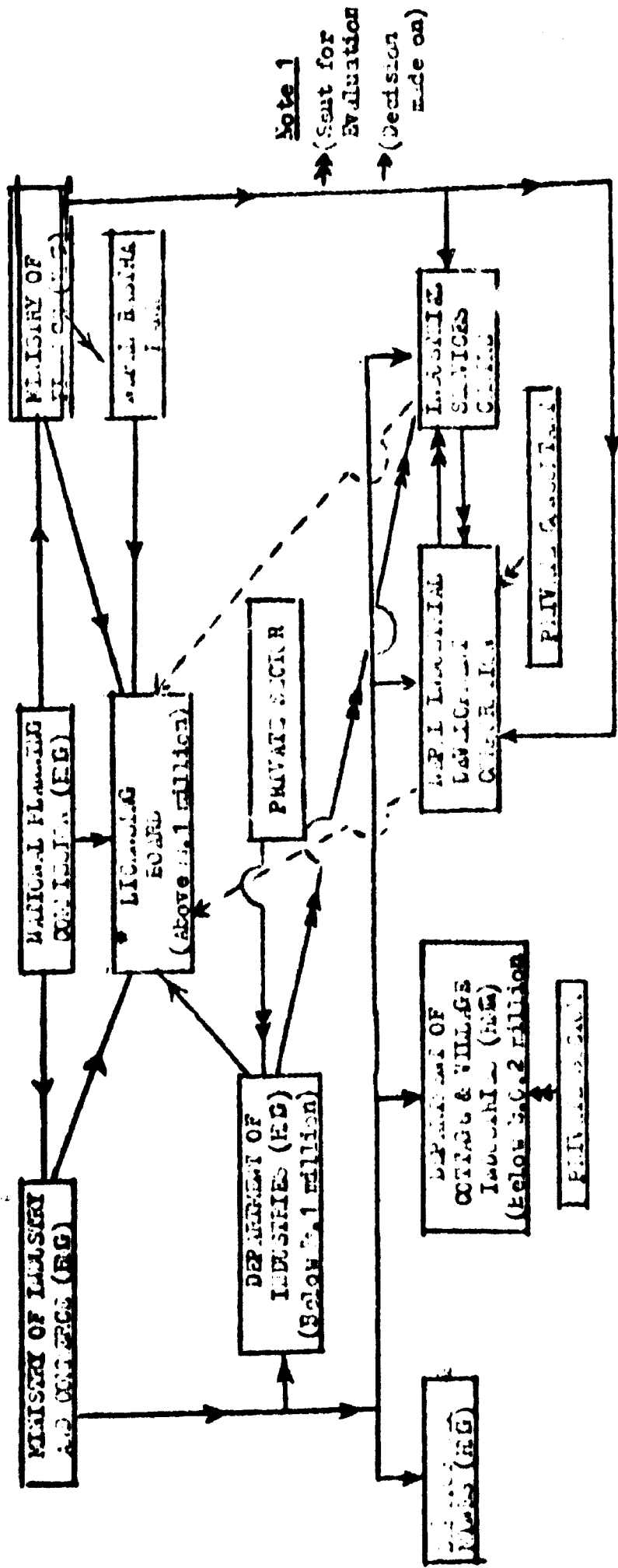
In the private sector, both domestic and foreign investment is encouraged by His Majesty's Government of Nepal.

b) **The Role of Institutions Concerned with Industrial Development in Initiation, Implementation and Evaluation of Pre-investment Studies**

All the institutions concerned with industrial development in initiation, implementation and evaluation of pre-investment studies in Nepal can be seen in the following flow diagram :

OF INDUSTRIAL FEASIBILITY STUDIES

IN
INDIA



• The Licensing Board is composed of

1. Hon. Minister of Industry & Commerce
2. Secretary, Industry & Commerce Ministry
3. Secretary, Finance Ministry
4. Member-Secretary, National Planning Commission
5. Governor, Central Bank
6. Director General, Department of Industries
7. Permanent Invitee : Executive Chairman of I.S.C.
8. Permanent Invitee : G.M. of MDC.

Note 2

Members of Decision Making on Evaluation & Follow-up of Feasibility Studies

1. Techno-Economic Study : Industrial Services Centre
 makes recommendation only
2. Licensing Board : It has the final say on the issue of licence to projects with fixed assets over Rs. 1 million.
3. Financial Member: a) Ministry of Finance
 b) Metal Industrial Development Corporation.

Before we move to the role of each institution it is important to know how the industrial sector has been sub-divided by the Industrial Enterprises Act of Nepal (2030).

- i) "Rural & Cottage Industries" means an industry with a fixed capital investment up to Rupees two hundred thousand.
- ii) "Small Industry" means an industry with a fixed capital investment ranging from Rupees two hundred thousand to Rupees one million.
- iii) "Medium Industry" means an industry with a fixed capital investment ranging from Rupees one million to Rupees five million.
- iv) "Large Industry" means an industry with a fixed capital investment of more than Rupees five million.

The Role of each Institutions Represented in the Flow-Chart will be briefly stated as follows

1. The National Planning Commission

The objective of the National Planning Commission is to make every possible effort to bring about planned economic development in Nepal in the framework of the broad directives of the National Development Councils. This broad objective of NPC is supported by the following subsidiary objectives :

- i) Formulating development policies and plans and periodic development projects in the framework of the broad directives of the National Development Council.
- ii) Supervising the process of national plan implementation
- iii) Evaluating the process of implementation and bringing about timely corrective measures.

Concerning the industrial sector, the NPC outlines the priority industries which are to be promoted during each five year plan period.

2. Licensing Board

The objectives of the licensing board is to issue licenses to industries whose capital investment will be more than as 1 million for the purposes of their establishment, extension and renewal.

The Department of Industry acts as the Secretariat to the licensing Board. The Director General is the ex-officio secretary to the Board.

For any industry with a fixed capital of Rs. 1 million the Director General recommends but has to take the application to the licensing board for approval or rejection.

3. Department of Industries

i) The objectives of the department are to :

- a) Strengthen the base of industrialization in Nepal
- b) Influence the speed of industrial development

ii) This department acts as the regulatory institution. It issues licenses to industries with fixed capital exceeding Rs. 200,000. Industries with fixed investment up to Rs. 200,000 do not require license. The licensed industries are registered in the Department of Industry. The Department of Industries is concerned with the registration of three different categories of industries namely Small, Medium and Large.

iii) Screening of Projects

The Director General in his capacity as the secretary to the licensing Board has the authority to screen applications forms for license to industries with any size or scale of fixed capital investment from his own level. But for approval his authority as Director General of the Department is limited to industries with fixed capital investment up to Rs. 1 million.

4. Department of Cottage & Village Industries

1) Objective

Its objective is to contribute to the growth of national income by developing Handicraft and Cottage and Village Industries through the process of production and unifications of the scattered handicraft skills, artisans and other skilled workers of the rural and urban areas.

2) Responsibility

As a regulatory job, this department registers new cottage and village industries. Besides this, it represents a financial and service institution as it is mainly responsible for the research, design and development, promotion of production and marketing of Cottages and Village Industry products and their financing.

5. Industrial Services Centre

This Centre (ISC) was established by HRE/M under the Development Board Act 2013 in the year 1974 with a view to undertake the industrial support functions, including promotion, planning, technical & managerial support to industries and feasibility studies. In addition it also supervises and administers all the industrial districts in the country.

The objectives of ISC are :

- 1) To study the country's natural resources and prepare industrial plans to foster industrial development.
- 2) To prepare detailed information on the country's resources and investment policies in order to attract foreign investment.
- 3) To undertake detailed engineering of industrial projects.
- 4) To provide management consulting services.
- 5) To manage industrial districts in the kingdom of Nepal.
- 6) To provide training in industrial management.

6. Nepal Industrial Development Corporation

It is the industrial development bank of Nepal. Its objectives are:

- 1) To promote and encourage the industries of Nepal to develop, modernize and expand their activities.
- 2) To provide financial, managerial and technical assistance to industries for development, modernisation and expansion.

7. Nepal Rastra Bank

It is the central bank of Nepal

Its objectives are:

- 1) to manage the issue of notes
- 2) to promote the circulation of the Nepalese currency within Nepal
- 3) to maintain stability in the foreign exchange rates of the Nepalese currency.
- 4) to encourage industrialization in the country.
- 5) to develop banking system in Nepal.
- 6) to devise appropriate monetary policy and promotional measures related to financial resources mobilization and the use of these resources.

8. Department of Mines ^{& Geol.} / ~~Min~~ Nepal

Its objectives are:

- 1) to undertake evaluation, research, feasibility studies, exploration of the mineral resources of Nepal in a scientific manner.
- 2) to regulate, control, develop the mining industries by implementing Mines Acts, Laws etc.
- 3) to maintain and increase contribution of the mining sector to the GDP of Nepal.

e) Critical review and of difficulties and constraints in generation of viable projects & agencies role in alleviating these difficulties.

There are still many constraints in the generation and implementation of viable industrial projects in Nepal. Some of the constraints in the generation of projects can be stated as follows:

(i) Because of lack of good data base, Nepal still lacks detailed sector studies in the industrial field. So the broad sub-sectors identified by the National Planning Commission in the five years plan has been based on somewhat ad-hoc basis up to now.

(ii) The private sector lacks the expertise in formulating industrial projects. Up to now this has been carried out by the public sector institutions.

(iii) Nepal lacks the technical expertise that is required for choosing right technology and proper choice of machinery for large industrial projects.

(iv) Nepal lacks the human resources & finance for undertaking extensive study of industrial projects in all sub-sectors.

Some of the constraints for lack of implementation of viable projects in Nepal are:

(i) Because of the short history of its planned development (i.e. from 1956) Nepal still lacks adequate enlightened entrepreneurship to undertake new industrial ventures.

(ii) Because of the limitation of available funds, viable venture gets tied down for a long time.

PART II

Case Study : Feasibility Study of Paper Project at Bhairahawa

A. Summary of Paper Project

A fairly detailed feasibility study of an integrated pulp and paper project was carried out during the early part of 1977 by the Industrial Services Centre (ISC) at the request of the Nepal Industrial Development Corporation (NIDC), the Government's main agency for providing investment finance to industry. Prior to this study, at least nine other reports on paper manufacturing in Nepal had been prepared since 1957, although no investment had followed from these reports.

The ISC study focusses on the feasibility of an integrated pulp and paper mill of 30 tons per day capacity based on agricultural residues such as rice and wheat straw, and sabai grass which grows wild in the southern terai belt of Nepal. The capacity of the plant was chosen on the basis of a detailed study of the market for paper in Nepal which showed that the consumption of writing and printing grades of paper was about 5000 tons p.a. and would grow to over 9000 tons p.a. by 1981/82. To produce this amount of paper the plant would require annual inputs of 18,150 tonnes of straw and 11,440 tonnes of sabai grass, which would be readily available from the project area. Other material inputs required would include caustic soda, chlorine, lime, alum, rosin, china clay, soda ash and coal, most of which would be imported. Water and electricity would also be important requirements. The availability of these were among the factors determining the chosen location of the plant at Bhairahawa, in the Western (less-developed) part of the country. Bhairahawa was also suitable in terms of availability of raw materials, proximity to main market areas, transportation network, and labour supply.

The project would use the soda process for pulping the raw material. Imported machinery and equipment would be required for main production processes, namely straw and sabai grass pulping, stock preparation, paper-making, and finishing. The manpower requirements for the factory would be 7 managerial staff, 40 production and engineering supervisory staff, 55 skilled labourers, 60 semi-skilled, and 150 unskilled; and for administrative and sales functions, 6 managerial, 23 staff, and 15 unskilled workers. The time period for implementing the project would be about 30 months. Total investment would amount to Rs. 108.1 million. The financial internal rate of return was calculated to be 19.4% with an economic rate of return of 21.4%.

B. Extent to which the study conformed to the UNIDO concept

1. Executive summary

The feasibility study opens with a quantitative statement of the highlights of the project and a summary chapter which covers most of the points listed in UNIDO's "Executive Summary" chapter. Reference to the national economic value of the project is made in chapter 3. This chapter seems to be slightly misplaced and could more appropriately form part of the summary.

2. Project background and history

The feasibility study's introduction presents a fairly detailed history of the studies carried out in Nepal since 1957 which were concerned with paper manufacture. Nine reports are referred to and comparisons made between the major reports in terms of products, markets, raw materials, plant capacity, location, etc. The introduction also follows the UNIDO concepts in describing briefly the major project parameters such as raw material, location and plant capacity. However, it is not stated who will promote the project or who the equity holders might be.

3. Market and plant capacity

The market study is quite detailed, consisting of 26 pages. The study examines the different types of papers, sources of supply, prices, sectors of consumption, and the geographical segmentation of the market. The types and sizes of paper used is also examined in detail. In the absence of time series of data, projections are based on international comparisons and estimates of population and income growth. However, the chapter does not go on to select a sales programme or to calculate estimates of sales revenue. A more detailed examination of this area seems particularly important in this case as 30% of the demand for the plant's output is expected to be from ancillary industries manufacturing books, envelopes etc., which, however have yet to be established (but separate from the paper plant). A marketing strategy is only briefly mentioned (factory sales to wholesalers on a commission basis). Sales and distribution costs are not presented in

this chapter. The chapter does not go to set up a production programme, although this would be a logical step after the market study. Similarly, the consequences of the market findings for plant capacity is not spelled out in this section.

4. Materials and inputs

The chapter on raw materials examines in considerable detail alternative raw pulping materials for the plant, qualitative properties, availability, unit costs etc. However, an explicit supply programme is not drawn up nor a statement of annual production cost. (This is presented in an annex but is not referred to). Not all materials and inputs are covered in this chapter e.g. chemicals, utilities. (These are dealt with in a later chapter on financial analysis and in annexes). An improvement in presentation and clarity would be possible here by following the UNIDO format and treating all materials inputs in the same section of the study and by relating annual production costs explicitly to the discussion of material inputs.

5. Location and site

The study comes out with quite a detailed locational analysis comparing the relative merits of three different locations in Western Nepal in terms of labour, power and water supply, infrastructure, means for effluent disposal, and transportation costs. However, the locational analysis is inappropriately split between two chapters (4 and 7) instead of being covered in the one chapter. An environmental impact study was prepared subsequently by outside consultants to identify the ecological aspects of the project, select a suitable site, and calculate the cost of emission disposal.

6. Process engineering

The study presents general flow diagrams of the manufacturing process but does not cover other types of charts and layout drawings. Scope of the project is covered briefly. Various technological processes are examined and compared and a technology selected. Equipment is listed but costing is covered in a later chapter. Civil engineering works is not covered in this section but is dealt with in a later chapter covering the economic analysis of the project. Presentation could be greatly improved by following the UNIDO format and bringing all the engineering aspects of the project into one section.

The selection of machinery and equipment and the source of such is not explained. It is not indicated where the cost estimates are derived from.

7. Plant organization and overhead costs

The study does not contain a section explicitly dealing with this aspect.

8. Manpower

The study gives the total manpower required and breakdown between managerial, supervisory and workers. A breakdown between factory and administrative & sales is also given. Training needs are indicated only briefly. Cost of manpower is not specified in this section nor the number of shifts to be run. (Costs are presented in an annex but no reference to this annex is made in the text).

9. Project implementation

This is covered in the study but not in detail and build up of recruitment and training of labour and staff is omitted. The cost of the various implementation activities is not stated or discussed.

10. Financial and economic evaluation

The financial analysis chapter of the ISC feasibility study follows closely the UNIDO concepts and format, covering investment costs, project financing, production costs, various commercial profitability criteria, and sensitivity analysis. A chapter on national economic evaluation is included which consists mainly of a detailed analysis of shadow prices for all cost items. (The economic rate of return calculated on this basis is found to be about 2% higher than the financial rate of return).

PART III

a) Ways by which the decision-making process in the country could be improved

A major study sponsored by UNIDO and carried out by the Industrial Services Centre in 1977 entitled Development of an Institutional Infrastructure For Industry, Nepal, examined in detail the progress Nepal had made in developing and strengthening institutional structures and operations to facilitate industrial development, and examined the areas obstructing industrial development and the need for corrective action. Included in the conclusions and recommendations of the study were the following points which have a bearing on the subject of this country paper:

- Communication between the public sector institutions concerned with industrial development and the private sector was found to be poor and increased dialogue and willingness to exchange information were needed. This could be achieved in some measure by frequent seminars and discussion forums for a free exchange of views.
- A lack of co-ordination between the various regulating agencies created an atmosphere of distrust in investors.
- There was little attempt to plan investment in the industrial sector. (This is now being remedied by the preparation of an industrial sector plan by Industrial Services Centre).
- A number of institutions were carrying out feasibility studies, investment promotion, consulting services, financing and training. To avoid duplication and waste of resources, more collaboration between these various institutions and between the institutions and the users was necessary.

The study found that the existing institutions were functionally well-designed and numerically adequate but that they required to be strengthened qualitatively, and administrative procedures streamlined so as to speed up the decision-making process. Some of the recommendations included a "Board of Industrial Investment and Development" (or alternatively a reconstitution of the existing Industrial Licensing Board) in order to improve inter-ministerial co-ordination;

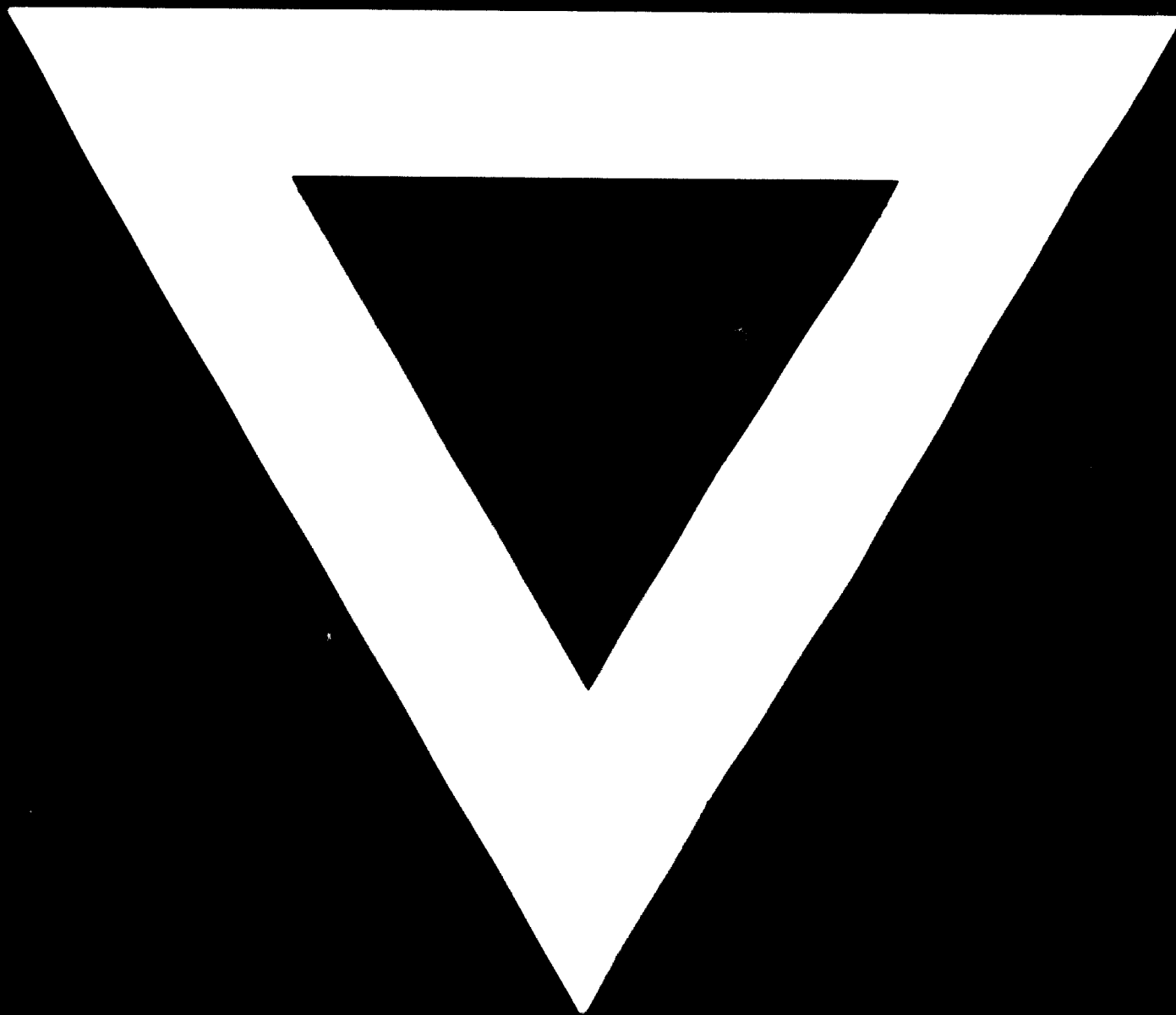
and a joint 'Industrial Promotion Committee', comprising representatives from NIDC, ISC, the Dept. of Industries, and the Dept. of Geology and Mines, to co-ordinate the promotional and financial activities required for the establishment and operation of industrial projects.

In addition to the foregoing points, it is considered that a closer and more systematic follow-up should be carried out by ISC subsequent to the completion of feasibility studies for various clients, in order to determine what problems of project implementation are being encountered and, if possible, to assist in devising and implementing solutions to these problems.

b) Recommendations for possible UNIDO assistance

- i) - Short-term experts in specific industries to advise on alternative technologies, detailed itemisation of machinery and equipment, sources of supply, and costs of the technology.
- ii) - Assistance in promoting projects, possibly through UNIDO's existing Investment Co-operative Programme Office.
- iii) - Provision of experts for carrying out detailed market potential research studies for export oriented industrial projects to be set up in Nepal.
- iv) - Further strengthening of the Industrial Services Centre, the main industrial promotional agency of IEG/Nepal, through financial aid for purchasing sophisticated support equipment and a power development brought about by facilitating post graduation studies abroad.

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