



**TOGETHER**  
*for a sustainable future*

## OCCASION

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



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

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

## FAIR USE POLICY

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

## CONTACT

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

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

C.66/13

UNITED NATIONS

DO4771

copy 2

CONSULTATIVE GROUP ON INDUSTRIAL  
ESTATES AND INDUSTRIAL AREAS

Geneva, Switzerland  
24 to 29 October 1966

Agenda item 9



CID/IE.1/10  
24 August 1966

ORIGINAL: ENGLISH

UNITED NATIONS ACTIVITIES IN THE FIELD OF INDUSTRIAL ESTATES

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

**TABLE OF CONTENTS**

	<u>Page</u>
<b>I. RESEARCH PROJECTS AND SEMINARS . . . . .</b>	<b>3</b>
<b>Form, purpose and scope . . . . .</b>	<b>3</b>
<b>Projects 1960-1966 . . . . .</b>	<b>5</b>
<b>II. TECHNICAL CO-OPERATION . . . . .</b>	<b>10</b>
<b>Special Fund operations . . . . .</b>	<b>11</b>
<b>Operations under the Expanded Programme of</b>	
<b>Technical Assistance . . . . .</b>	<b>14</b>
<b>Special Industrial Services . . . . .</b>	<b>16</b>
<b>ANNEX I - Outline of a Hypothetical Request to the United Nations Development Programme (Special Fund) for Assistance in the Establishment of a Demonstration Industrial Estate . . . . .</b>	<b>17</b>
<b>ANNEX II - Initial Planning of Industrial Estates - Hypothetical Terms of Reference of Experts. . . . .</b>	<b>22</b>

## UNITED NATIONS ACTIVITIES IN THE FIELD OF INDUSTRIAL ESTATES

Although industrial estates were first set up nearly eighty years ago, it is only in the past thirty years that their number increased significantly, at first in the industrial countries and, in the last ten to fifteen years, in the developing countries. While, in the advanced countries, the role of industrial estates was mostly to induce industrial decentralization or, especially in the United States, to facilitate industrial location in or near large urban centres, it soon became apparent that, in the developing countries, the industrial estate could be a highly effective tool for the development and planned location of industry, particularly of small-scale and medium-sized enterprises, the improvement of management, processing and productivity through provision of integrated assistance, servicing and training facilities, the attraction of industry from abroad, and the achievement of other development objectives. In certain developing countries, in particular India and Puerto Rico, large industrial estate programmes were devised and implemented in the course of the nineteen fifties. At the end of that decade and the beginning of the nineteen sixties, interest for industrial estates was spreading in developing countries in all regions.

The value of the industrial estate as a tool for development was recognized by the Economic and Social Council at its twenty-seventh session, in April 1959. The Council adopted a resolution (709 A (XXVII)) in which, among other things, it requested the Secretary-General to "lay particular emphasis on projects of direct practical value to economic development" and especially to "projects concerning industrial zones and estates". In accordance with this request, the Secretariat of the United Nations undertook, under its work programme on industrialization, a series of research studies and seminars on this subject - the latter organized in co-operation with the regional economic commissions - and encouraged Governments to set up industrial estates, availing themselves, as necessary, of the assistance offered by the United Nations under its technical co-operation programme and the programme of the Special Fund.

---

This paper has been prepared by the Small-scale Industry Section, Centre for Industrial Development.

In 1961, the General Assembly of the United Nations adopted a resolution (1710 (XVI)) in which it designated the current decade as the United Nations Development Decade, in which major efforts would be made to accelerate economic growth in the developing countries. In this resolution, the Assembly requested the Secretary-General to develop proposals for the intensification of action in the fields of economic and social development by the United Nations system of organizations, with a view to furthering the objectives of the Development Decade. In his proposals, <sup>1/</sup> the Secretary-General laid stress, among other things, on industrial estates for small-scale industries as one of the areas in which a massive and increasing effort was required on the part of Governments and in which a corresponding expansion in supporting activities by the United Nations would be needed.

The effectiveness of industrial estates as an instrument for the development of small-scale industries was also recognized by the Committee for Industrial Development <sup>2/</sup> which, as from its first session, held in 1961, included a series of research studies and seminars on this subject in the Secretariat's programme of work. At its fourth session, in March 1964, the Committee recommended an expansion in Government requests for technical assistance and Special Fund operations in this area.

The purpose of the present paper is to provide a brief review of the activities of the United Nations in the field of industrial estates. The first part discusses the rationale and scope of research projects and seminars already carried out or being prepared by the Secretariat. The second part describes the facilities offered by the United Nations to assist Governments in the establishment and operation of industrial estates and the procedures for obtaining such assistance.

---

<sup>1/</sup> The United Nations Development Decade - Proposals for Action (United Nations publication, Sales No.: 62.II.B.2).

<sup>2/</sup> Official Records of the Economic and Social Council, Thirty-third Session, Supplement No. 2, document E/3600/Rev.1, para 71; Thirty-sixth Session, Supplement No. 14, document E/3781, para. 22; Thirty-seventh Session, Supplement No. 6, document E/3869, paras. 44 to 46; Thirty-ninth Session, Supplement No. 6, document E/4065, paras. 103 to 109; and Forty-first Session, Supplement No. 6, document E/4202, paras. 80 to 86.

## I. RESEARCH PROJECTS AND SEMINARS

### Form, purpose and scope

Most of the research studies on industrial estates already carried out or planned by the Secretariat are closely linked with regional and inter-regional seminars on the subject. The studies usually relate to the main items of the agenda of the seminars and serve as discussion papers in the proceedings.

Both the Economic and Social Council and the Committee for Industrial Development have repeatedly stressed the usefulness of pooling expert knowledge and experience from both advanced and developing countries in seminars and working parties focused on specific industrialization problems of high priority, with a view to contributing to their understanding and solution. Another objective expected from seminars and studies is that the interest of Governments would be stimulated to undertaking certain types of projects to which inadequate attention appears to be paid. In the field under consideration, the seminars and related studies are expected to help in evolving guidelines for the formulation and implementation of policies, programmes and standards for industrial estate projects, in the light of regional conditions and needs, encouraging Governments to set up industrial estates, and providing guidance for the formulation and implementation of technical assistance operations.

Regional projects are undertaken in close co-operation between the Secretariat at Headquarters and the regional economic commission concerned. They are expected to contribute to the elaboration of an extensive body of experience and information to serve the needs of countries at different stages of development and placed in different economic, social, geographic and climatic conditions.

Before reviewing the work of the United Nations in the field of industrial estates, attention should be drawn to the fact that although this method of industrial organization lends itself to the development of large-scale industrial centres and complexes, including heavy and light industries of all sizes, it is principally its role in promoting small-scale industries which has been stressed in the Secretariat's projects.

The reason for this is that small-scale industries need, on the part of public authorities, assistance of a type and scope which, as a rule, is not required by large establishments. The industrial estate is a particularly appropriate instrument for providing such assistance, and the special facilities which it features usually do not need to be provided with a view to stimulating the establishment and operation of large concerns. <sup>2/</sup> The provision of sites improved in advance and, above all, of ready-built general-purpose factories offered for rent is one of the most powerful incentives to start up industries for small entrepreneurs having limited financial resources. The grouping of small entrepreneurs in an industrial estate makes it practical and economical to provide them with technical assistance in several fields, such as engineering, quality control, maintenance, management and training, with an effectiveness that can seldom be achieved when rendered to individual small enterprises outside the estates. If the estate is sufficiently large, certain assistance and servicing facilities, such as industrial extension and other advisory services, vocational training, and so on may be institutionalized as an integral part of the project. Provision of common repair and maintenance shops, tool rooms, warehouses and other common facilities helps in improving labour productivity and product quality and in reducing operating costs. The grouping of industries in estates also facilitates the establishment of relationships of interdependence and complementarity among some of the occupants, through inter-trading and inter-servicing, and, in some cases, of subcontracting relationships between large-scale and small-scale enterprises

---

<sup>2/</sup> Large industries may benefit from the provision of land, utilities, transportation facilities, zoning, and the advantage of industrial clustering, which are an integral part of any industrial area scheme, and the implementation of which may sometimes call for certain forms of government assistance. They do not require, however, the standard factory buildings, common services, assistance facilities and other incentives which are usually featured on government-sponsored industrial estates for small-scale industries.



It is for these reasons that most of the under-developed countries use or intend to use the device of the industrial estate primarily for the promotion of small units, and, in concentrating its activities on this aspect, the Secretariat has endeavoured to serve the needs of these countries. In doing this, the Secretariat has emphasized the fact that industrial estates are only one facility - though an extremely important one - for the development of small-scale industries and that an industrial estate programme can be effective only if integrated in a comprehensive system of measures to assist and serve small enterprises at all stages of establishment and operation, e.g. financing, installation, operation and maintenance of equipment, processing, management, marketing, etc. <sup>4/</sup> Research projects on these related subjects are also included in the work programme of the responsible unit of the Secretariat - the Centre for Industrial Development of the Department of Economic and Social Affairs - and technical assistance operations are undertaken under the United Nations Development Programme. Research and operations in this broader area are, however, outside the scope of the present paper which is limited to activities in the field of industrial estates.

#### Projects 1960-1966

##### 1. Establishment of Industrial Estates in Under-developed Countries (United Nations publication, Sales No.: 60.II.B.4)

This report, prepared by the Division of Industrial Development of the Department of Economic and Social Affairs and published in February 1961, was the first United Nations project undertaken in response to resolution 709 A (XXVII) of the Economic and Social Council. It deals principally with the role of industrial estates in policies of industrialization and industrial location in both developed and under-developed countries, with special reference to promotion of small-scale industries. The report also reviews industrial estates of different types, problems of planning, establishment, organization, financing, and technical assistance. This report was submitted as a discussion paper to the Seminar on Industrial Estates in the ECAFE Region (See section 3, below).

---

<sup>4/</sup> See "The Role of Industrial Estates in Policies and Programmes for the Development of Small-scale Industries".

2. The Physical Planning of Industrial Estates

(United Nations publication, Sales No.: 62.II.B.4)

This report, prepared by the Bureau of Social Affairs of the Department of Economic and Social Affairs and published in November 1962, is a revised version of a discussion paper submitted to the Seminar on Industrial Estates in the ECAFE Region. Its purpose is to provide guidance in locating, planning, laying out and building industrial estates, especially those for small-scale industries. It contains data on the norms for plots, factories, road widths and land use adopted or recommended in various countries.

3. Seminar on Industrial Estates in the ECAFE Region, Madras, India, 1 to 11 November 1961

This Seminar, which covered the region of the Economic Commission for Asia and the Far East (ECAFE) was organized by the secretariat of the Commission, the Division of Industrial Development and the Bureau of Technical Assistance Operations of the Department of Economic and Social Affairs. It was attended by fifty-seven participants and observers from twenty-three countries and sixteen representatives of the United Nations, the specialized agencies and non-governmental organizations.

The agenda included the following substantive items:

- (i) Objectives and policies in establishing industrial estates;
- (ii) planning of industrial estates;
- (iii) organization, management and financing of industrial estates;
- (iv) co-operation between, and assistance to, small industries established on industrial estates;
- (v) co-ordination or integration of industrial estate projects with programmes of urban or regional development; and
- (vi) international and regional co-operation in the development of industrial estates.

The report of the Seminar and large excerpts from the discussion and information papers submitted to the Seminar were published in Industrial Estates in Asia and the Far East, the contents of which is briefly reviewed in the following paragraph.

4. Industrial Estates in Asia and the Far East

(United Nations publication, Sales No.: 62.II.B.5).

This publication, edited by the Centre for Industrial Development, Department of Economic and Social Affairs, and issued in February 1965, contains the report of the Seminar on Industrial Estates in the ECAFE Region and large excerpts from the discussion and information papers submitted to the Seminar. The report of the Seminar and most of the discussion papers relate to industrial estates as a means of promoting small-scale industries. Discussion papers are concerned with aspects of labour and management, assistance to small-scale units, physical planning, and establishment of industrial estates in rural areas.

The information papers submitted by countries of the ECAFE Region describe plans, progress and problems, review the objectives of the current plans and programmes and, in a number of cases, outline future developments.

The volume also includes information papers submitted by some advanced countries outside the region, and discussion papers on industrial ports, large-scale industrial estates, and industrial areas vs. industrial estates.

5. Questionnaire on industrial estates and analysis of the replies

A questionnaire on industrial estates prepared by the Centre for Industrial Development was sent on 11 February 1964 to those Member and non-member States which, according to available information, have plans or projects for the establishment of industrial estates. The purpose of the questionnaire was to elicit information from countries, developed and less-developed, on their policies, plans and progress in the field of industrial estates, including organization, management and financing, with a view to deriving, from an analysis of the replies, some guidelines for the establishment of industrial estates in developing countries. Governments were also invited to evaluate their experience in this field. The analysis of the replies was published by the United Nations in 1966 (see para. 8, below).

6. Seminar on Industrial Estates in Africa, Addis Ababa  
14 to 21 December 1964

This Seminar, which covered the region of the Economic Commission for Africa (ECA) was organized by the secretariat of the Commission, the Centre for Industrial Development and the Bureau of Technical Assistance Operations.

The agenda included the following substantive items:

- (i) general discussion on the role of industrial estates and industrial areas;
- (ii) planning the establishment of industrial estates;
- (iii) physical planning and engineering aspects;
- (iv) organization, management and financing; and
- (v) regional and international co-operation in the development of industrial estates.

The report of the Seminar and large excerpts of the discussion papers submitted to the Seminar were published in 1966 by the United Nations under the title Industrial Estates in Africa, the contents of which is briefly reviewed in the following paragraph.

7. Industrial Estates in Africa

(United Nations publication, Sales No.: 66.II.B.2)

This publication, edited by the Centre for Industrial Development, and issued in February 1966, contains the report of the Seminar on Industrial Estates in the ECA region, a report on planning, design and construction of industrial estates with particular reference to Africa, prepared by a consultant, and a survey of industrial estate plans and projects in African countries, prepared by the Secretariat on the basis of country papers submitted to the Seminar and of replies of Governments to the questionnaire on industrial estates.

8. Industrial Estates: Policies, Plans and Progress - A Comparative Analysis of International Experience

(United Nations publication, Sales No.: 66.II.B.16)

This study, published in June 1966, is based on replies from Governments of fifty-six countries to the questionnaire on industrial estates, and other relevant material. The publication discusses objectives and policies (industrialization, regional development, area and community development), planning and organization of industrial estates (sponsorship, types and sizes of industrial estates), management (administration, admission and occupancy policies, services and facilities, sales and lease policies and special inducements), and financing of industrial estates.

9. Consultative Groups on Industrial Estates, 1966

Two consultative groups on industrial estates, one for European and other countries in the process of development, the other for Arab countries of the Middle East, are being organized in October and November 1966. The purpose of the meetings and the scope of the discussion are similar to those of earlier regional seminars.

10. Seminar on Small-scale Industries in Latin America, Quito, Ecuador,

28 November to 5 December 1966

This Seminar, which covers the region of the Economic Commission for Latin America (ECLA), is being organized by the secretariat of the Commission, the Centre for Industrial Development and the Bureau of Technical Assistance Operations. One of the main purposes of the meeting will be to draw the attention of Governments in the region to the role which small-scale industries could play in their industrial development programmes which, so far, have been principally centred on large projects. The Seminar would be principally concerned with the role of the Government in promoting the development of small-scale industries and certain specific measures which might be adopted to that end, including the development of industrial estates, a subject to which special emphasis will be given in the discussion.

## II. TECHNICAL CO-OPERATION

It is not intended, in the present paper, to describe in detail the organization and procedures of the United Nations Development Programme (UNDP) that is, the Expanded Programme of Technical Assistance and the programme of the Special Fund - information on which may be found in a number of publications. <sup>5/</sup> It will only be recalled that assistance under both programmes is extended only at the request of Governments. Requests are channelled through the Resident-Representatives of UNDP, who serve also in the capacity of Directors of Special Fund Programmes and act as the principal channel of communications between the United Nations and the Government of the country to which they are assigned. Under both programmes, operations include expert missions, award of fellowships, and, to a minor extent, provision of certain types of equipment and supplies. Capital investment is not financed under either programme. <sup>6/</sup>

Assistance in the field of industrial estates may be requested either under the Expanded Programme or the programme of the Special Fund. The principal criteria for distinguishing Special Fund operations from those of the Expanded Programme are the size and duration of the projects.

---

<sup>5/</sup> See, in particular, The Expanded Programme of Technical Assistance for Economic Development of Under-developed Countries, document TAB/1/Rev.4; and the Annual Reports of the Technical Assistance Board to the Technical Assistance Committee, published as Supplements to the Official Records of the Economic and Social Council. The Annual Reports of the Governing Council of the Special Fund to the Economic and Social Council, also published as Supplements to the Council's Official Records; and recently published booklets: The Priorities of Progress - The United Nations Special Fund, 1961 (Sales No.: 62.I.2), and Target: An Expanding World Economy - A United Nations Special Fund Report, 1963 (Sales No.: 63.I.7).

<sup>6/</sup> Such financing may be provided by the International Bank for Reconstruction and Development and its two affiliates - the International Finance Corporation and the International Development Association. The latter is prepared to consider projects for the establishment of industrial estates.

In principle, projects which call for the services of one or two experts only for a relatively short period, say, a few months to two years, would be dealt with under the Expanded Programme. More important projects requiring a team of several experts for a longer period of time - not exceeding five years - and involving a substantial contribution on the part of both the Government and UNDP <sup>1/</sup> might be considered by the Special Fund. <sup>8/</sup>

The differences in size and duration are in general reflected in differences in the scope of the operations to be assisted from these two sources. As a rule, the Special Fund might be interested in projects covering several or all phases of the establishment of an industrial estate, from early planning to beginning of operations. Projects of more limited scope might be assisted under the Expanded Programme. <sup>2/</sup>

The scope of the operations which may be assisted under the two programmes is briefly discussed in the following paragraphs.

#### Special Fund operations

UNDP (Special Fund) would be prepared to consider industrial estate projects involving an initial feasibility study, the preparation of the layout and plans, provision of advice during the construction phase, and the

---

<sup>1/</sup> The contribution of the Special Fund is scheduled to decrease and that of the Government to increase during the period of the project.

<sup>8/</sup> The responsibility for implementing Special Fund projects in the field of industrial estates is assumed by the United Nations serving in the capacity of Executing Agency. A detailed description of the arrangements for the execution of the project is contained in a Plan of Operations, which is a tripartite Agreement between Government, the Special Fund and the Executing Agency.

<sup>2/</sup> In this connexion, it may be of interest to point out that assistance for drawing up an initial submission to the Special Fund would be within the competence of the Expanded Programme, not that of the Special Fund. If it is established, as a result of such assistance, that the project is suitable for Special Fund financing, a formal request may be submitted to this organ. Should it be found to be within the Fund's terms of reference but, subsequent to a technical evaluation, to need reformulation or revision, expert assistance might be provided for this purpose by the Special Fund, under a "preparatory allocation".

establishment and provision of certain common facilities. In special circumstances, assistance might be provided in the initial administration and direction of an estate, including training of personnel for the administration and maintenance of common services.

Since its assistance is limited to pre-investment operations, the Special Fund would not contribute to the design or construction of industrial plants in the estate, nor would it provide these with capital equipment.

It is of interest to point out that the Special Fund is prepared to support the establishment of certain assistance and servicing facilities for small-scale industries, and that it recognizes the particular effectiveness of providing such facilities to the occupants of an industrial estate, a fact mentioned earlier in this report. For this reason, the Fund might consider requests for the establishment of a Small-scale Industries Service Institute as part of an industrial estate. It might also support the establishment of pilot plant facilities on an industrial estate. The services and facilities made available as a result of such Special Fund support would not necessarily be restricted to industries housed on the estate.

The number of experts whose services may be needed to carry out a Special Fund industrial estate project, their field of specialization, period and scheduling of service and terms of reference, and the organization of the team may vary from one project to another. Two examples relating to recent projects may be indicative of the requirements in this connexion.

Subsequent to the submission by the Government of an Asian country of a request to the Special Fund for assistance in the establishment of an industrial estate for small-scale and medium-sized industries, a team of two experts - an industrial economist and a civil engineer - was sent on a short-term mission (a total of six man-months) to make a preliminary survey. In accordance with its terms of reference, the team selected, among alternative possibilities, the location and site for the estate, drew up a list of industries which might be set up thereon, prepared a provisional layout and estimated construction and development costs; it also made recommendations on the establishment of an industrial estate authority and on incentives and promotional measures to accelerate occupancy of the estate.



The project was approved by the Governing Council of the Special Fund and a project manager, a mechanical engineer and a civil engineer were appointed during the first year of the project. A managing director, a deputy managing director and a staff of thirty-five technical, administrative and service personnel were appointed by the Industrial Estate Authority. A site of fifty acres (20.2 hectares) was purchased. Studies were carried out of the layout and physical planning of the estate, including common service facilities and utilities. Specifications for equipment of the common service facilities - a mechanical workshop and a testing laboratory - were drawn up and requisitions for machinery and equipment were prepared and sent to UNDP (Special Fund) which will provide these as part of the project.

In the second year, the team will be joined by an industrial engineer, a chemical engineer and a foundry metallurgical engineer who will operate the common service facilities and provide technical assistance to the occupants of the estate as well as to small industrialists in the surrounding area. While the team concentrates its work on the estate under construction, it also assists the Government in planning industrial estate projects in other parts of the country.

The Special Fund also provides fellowships to the counterparts of the United Nations experts.

At the request of the Government of an African country, a team of two officials of the Centre for Industrial Development visited the country on a short mission during which, in consultation and in co-operation with government officials, they drew up, in its main lines, a nation-wide programme of promotion of, and assistance to, small-scale industries and recommended, as part of this programme, the establishment of a first industrial estate as a pilot and demonstration project, and of an adjoining industrial area for industries of all sizes. They selected a site for the estate and area, estimated the construction and development costs and assisted the Government in drafting a request to the Special Fund for assistance in carrying out the small industry development programme and in establishing the industrial estate and the industrial area.

During the five-year period of the project, fifteen standard factories of 2,000 square feet each (186 square metres) and fifteen factories of 5,000 square feet (464 square metres) will be erected on part of the 25 acres (9.3 hectares)

initial site of the estate (to be doubled in the future). The industrial area - of a total of 104 acres (42 hectares) - will be developed at the rate of 5 acres (2 hectares) per year during the period of the project. The common service facilities will include initially a mechanical workshop and tool room and a testing laboratory.

The Special Fund will provide a team of seven experts - project manager, industrial economist, industrial engineer, civil engineer, chemical engineer, mechanical engineer, and industrial loan evaluator - short-term consultants, fellowships, and equipment for the common service facilities.

The project was approved by the Governing Council and a project manager has been appointed.

The outline of a hypothetical request to the Special Fund for assistance in establishing an industrial estate is given in Annex I.

#### Operations under the Expanded Programme of Technical Assistance

As mentioned earlier, a variety of needs in the field of industrial estate development may be served by the United Nations Development Programme under the Expanded Programme of Technical Assistance, at the request of Governments. Assistance may range from a brief visit, say one or two weeks, by a staff member of the Centre for Industrial Development or a Technical Adviser on Small-scale Industries and Industrial Estates attached to the Centre, for the purpose of drawing up a programme of United Nations assistance in this field, to provision of a two-man team for a period of up to two years to assist in the planning and construction of an estate, the establishment and operation of common service facilities, the management of an existing estate, or other assignments.

The first step usually taken by the United Nations in response to a Government request for assistance in the establishment of an industrial estate is to send a team consisting of an industrial economist and a civil engineer for a period of two to six months to make a feasibility study, select the location and site, estimate costs for an estate of the required type and size, draw up the preliminary plans for layout and construction, and schedule the development of the estate. Hypothetical terms of reference for an industrial economist and a civil engineer are given in Annex II, for illustration.

Sometimes further United Nations assistance is not needed, the Government services being able to develop the project up to the final stage, including the preparation of blueprints, the carrying out of construction and the management of the estate once it is established.

In many cases, however, further assistance is requested, for varying periods of time, on the part of specialists in fields often different from those required in the first stage. Thus, a construction engineer may be needed to assist in building the estate; mechanical or industrial engineers to provide advice in setting up and operating common service facilities such as maintenance and repair shop, forging and heat-treatment shop, foundry, die and tool designing centre, quality control centre, etc.; a chemical engineer to assist in the establishment and operation of a testing laboratory; a management adviser to help in the operation of the estate,<sup>10/</sup> etc. Most of these specialists would also provide assistance to the small entrepreneurs established on the estate and, inasmuch as possible, outside the estate.

Fellowships for advanced training overseas may also be made available under the Expanded Programme to national personnel participating in industrial estate programmes. Experience indicates that fellowships are particularly useful when granted to the counterparts of technical assistance experts.

In recent years, the United Nations has provided increasingly - and has encouraged Governments to request - multi-expert team missions to provide integrated and comprehensive assistance in the field of industrial development. Such missions are usually concerned with the formulation of industrialization policies and co-ordinated planning of industrial projects, planning of investment and production in important industrial sectors, and selection of high priority industrial projects and preparation of bankable projects for submission to financing institutions. Two recent missions of this type included industrial estate experts who studied, besides industrial estates proper, the problems of industrial location and zoning raised by the missions' proposals for the establishment of new industries. The experience gained suggests that the inclusion of industrial estate experts in integrated survey missions would often be useful.

---

<sup>10/</sup> If need be, experts in vocational training and organization of co-operatives may be provided by the International Labour Organisation.

### Special Industrial Services

In the course of 1966, a new programme of assistance for the industrial development of the developing countries was established as part of the technical co-operation machinery of the United Nations - the Special Industrial Services (SIS). A fund financed by voluntary contributions is used for special operations by joint approval of the Administrator of UNDP and the Commissioner for Industrial Development. Requests for SIS may be addressed to either UNDP or the Centre for Industrial Development through the UNDP Resident-Representatives or directly.

SIS is not a substitute or an alternative to EPTA or Special Fund assistance, but is additional to these, and is of a distinctive nature. Assistance under SIS is given particularly for (i) manufacturing industry projects for which feasibility studies have already been carried out, in order to promote their financing and implementation; (ii) existing manufacturing enterprises, whose performance needs to be improved; and (iii) exploratory and advisory activities leading to one or both of the above activities. Operations under SIS may lead to, or be generated through, EPTA or Special Fund projects.

While the programme is still at an early stage, and rules and procedures are still being developed, it appears that assistance to industrial estate projects may be provided under SIS in cases where plans have gone beyond the feasibility study stage and difficulties are encountered in the achievement of the planned development objectives. The difficulties may relate to construction, financing, management, promotion of entrepreneurship, operation of common service facilities, and so on.

As a rule, SIS projects would have a character of urgency, and assistance would be provided speedily.

ANNEX I

Outline  
of a Hypothetical Request to the United Nations Development Programme  
(Special Fund) for Assistance in the Establishment of a  
Demonstration Industrial Estate

I. BACKGROUND INFORMATION LEADING TO THE JUSTIFICATION OF THE PROJECT

1. The place of small industries in the country's industrial structure

General information on the industrial development in the country. Wherever possible information should be given on the number of small establishments and share of small industries in total production and employment.

2. Main problems limiting small industry development in the country

A brief review of the major factors limiting small industry development such as absence of credit facilities, skilled workers, technical knowledge, good factory accommodation, and so on.

3. Policies and programmes for small industry development

(a) The industrial development policy of the government with special reference to small-scale industries. Describe legislation, if any exists, or about to be introduced, which would offer satisfactory incentives for new industries or the expansion or relocation of existing ones.

(b) Agencies for promotion of small industries, if any, for example, small industry development corporations, service institutes, financing institutions, institutes of technology, industrial research, etc.

4. Why industrial estates

Explain how the establishment of industrial estates will contribute to the strengthening of small industries, in particular, the promotion and development of new entrepreneurship in the country .

5. Justification for Special Fund assistance

Explain why and how Special Fund assistance through a demonstration project will assist the programme of development of industrial estates and small industries in the country. Briefly describe the functioning of industrial estates, if any, in the country and their main problems.

## II. THE PROJECT

### 1. Background of the proposal

Give a brief historical summary of the work leading to the submission of the request to the Special Fund.

### 2. Description of the project

Give a brief description of the objectives of the industrial estate and its functions. The following points may serve as guidelines:

- stimulation of new enterprises in the area concerned;
- relocation of existing units;
- common facility services through workshops and laboratories;
- training of workers and foremen in the workshops and laboratories;
- extension service to small industries in and outside the estate.

The United Nations team will provide advisory services to government and other authorities in the planning and establishment of industrial estates in other locations.

### 3. Location and siting

(a) Assessment of demand, existing and potential, for factory accommodation in the suggested location and in the neighbouring region.

(b) Other factors relevant to location:

- (i) Integration of the project with plans for industrial and residential land use and zoning, if any.
- (ii) Suitability of the land for industrial buildings.
- (iii) Availability of land for future expansion.
- (iv) Economical installation of utilities such as water, electricity, gas and sewerage disposal.
- (v) Availability of economical transport.
- (vi) Convenient access to residential areas.

### 4. Planning and layout of the estate

An assessment of the prospects for industrial development in the area and of the needs of prospective tenants and the type of products they will be manufacturing should be made to serve as a guide for designing a proper layout for the estate. Information on the following points should be furnished:

- (a) Size of the estate;
- (b) Layout of the plots;
- (c) Roads and streets;
- (d) Number and size of factories and provision for future expansion.

5. Type of factory buildings

Indicate the type and number of factories proposed, and give the justification for standard factories or custom-built factories as recommended.

6. Administrative and ancillary buildings

A brief description of the general facilities and services proposed for the estate should be given to explain the need for ancillary buildings. Ancillary buildings may include administration offices, fire station, post office, bank, transport office, dispensary, canteen, warehouses, showrooms, club rooms, and so on.

7. Technical services facilities in the estate

A brief description of the technical services and facilities proposed for the estate and their justification

Such facilities may take the form of a fully-equipped small industry service institute or may include one or several workshops such as repair and maintenance shop, machine lease shop, tool room, testing and quality control laboratory, and so on.

Details on machinery and equipment required for such centres should be given in an annex.

8. Admission and lease policies

Describe the policies recommended for admission of tenants and for leasing, hire-purchase or sale of factories and/or improved sites.

9. Administrative arrangements

Describe the legal status of the industrial estate organization and its relations with other government organizations. Give a short account of the arrangements proposed for planning, construction, financing and management of the estate.

### III. ASSISTANCE REQUESTED FROM THE SPECIAL FUND

- (1) Duration of the assistance; timetable showing estimated date for work on the project, phasing and scheduled date of completion;
- (2) Number of experts, fields of specialization, length of service and specific tasks within the project.

The project manager is usually appointed first. Other members of the team may include an industrial engineer, a chemical engineer, a civil engineer and other experts. If there is a concentration of a particular industry in the location, a specialist in that industry may be included in the team. A provision for short-term consultants may be included as necessary.

- (3) Number, field of study and duration of fellowships for training abroad - such fellowships may be required for the counterparts of the United Nations experts as well as for other nationals engaged in the project.
- (4) Types of equipment and supplies required. The Special Fund may provide some equipment for certain common service facilities, for instance, a laboratory and a maintenance and repair shop.

### IV. GOVERNMENT CONTRIBUTION

- (1) Land, buildings and construction;
- (2) Equipment;
- (3) Staff, counterparts and auxiliary personnel;
- (4) Ancillary services.

### V. FINANCING

- (1) Cost of Special Fund assistance, by categories as per III above, on an annual basis for each year of the project. Special Fund assistance will not normally continue beyond five years, and should diminish in each of the last three years, with the Government assuming a steadily increasing responsibility for its continuity.



- (11) Government counterpart contribution, by categories as per IV above on an annual basis.

The Special Fund will not finance expenditure in local currencies, nor will it necessarily meet all foreign currency costs of a project. The Government counterpart contribution may be made either in cash, or in kind, or both.

Where the Special Fund supplies the services of experts, the Government will be expected to pay to the Special Fund in local currency an additional sum equal to fifteen per cent of the full cost of such experts as a cash contribution towards the local operating costs of the project.

ANNEX II

Initial Planning of Industrial Estates - Hypothetical Terms of Reference of Experts

The following terms of reference for, respectively, an industrial economist and a civil engineer, are given for illustration purposes. In order to show the types of assignments which may need to be carried out in feasibility surveys and initial planning of industrial estates for small-scale industries, the terms of reference are more comprehensive and more detailed than may be needed in certain cases. The period of assignment may vary with local requirements and the scope of the project. In the example given, the industrial economist and the civil engineer would work as a team. In most cases, and especially in short-term missions, the period of assignment of the two experts would be the same. Sometimes, however, the civil engineer may need to join his colleague only after a few months, for example, if the latter has to complete first a preliminary economic survey. The functions assigned in the present example to an industrial economist may sometimes need to be discharged by an industrial engineer (for instance, those under item 1 (iii)).

1. Industrial economist

The industrial economist, specialized in small-scale industries, will, in consultation with the competent government services, and in co-operation with the civil engineer, advise the Government on the formulation and implementation of an industrial estate programme and the measures necessary to facilitate and stimulate the establishment of small-scale industries in the factories of the estate(s). In particular, the expert will:

- (i) Make feasibility studies for industrial estates at alternative locations, in the light of the availability of supporting facilities and the prospective industrial development of the area; and, in the light of this survey, recommend the location, site, type and size of the estate(s).
- (ii) Estimate the type and number of new or existing industries suitable for establishment.

- (iii) For each estate, estimate the requirements in power and other utilities. For each industry, estimate the number of workers and the type, quantity and cost of the machinery needed for production at the appropriate level of capacity, and the investment costs, working capital requirements and turnover for each enterprise.
- (iv) Advise on the organization of an industrial estate authority and the organization and management of the industrial estate(s), including the estate's admission policies, rules and regulations, rent or sale policies, rate of charges, etc.
- (v) Advise on methods of financing the construction and development of the industrial estate(s);
- (vi) Advise on legislative and administrative measures needed for establishing and operating the industrial estate(s), including, if need be, provision of incentives, and assistance and servicing facilities for the occupants in the fields of technology, management and financing.
- (vii) Make recommendations on the organization of training and apprenticeship facilities for workers and intermediate supervisory personnel of the industries to be set up on the estates.
- (viii) Make recommendations on the number and type of fellowships needed to implement the project, e.g. for the future managers of the industrial estates or the department heads of the government authority in charge of their establishment.
- (ix) Make recommendations on further United Nations assistance which might be needed to carry out the project.

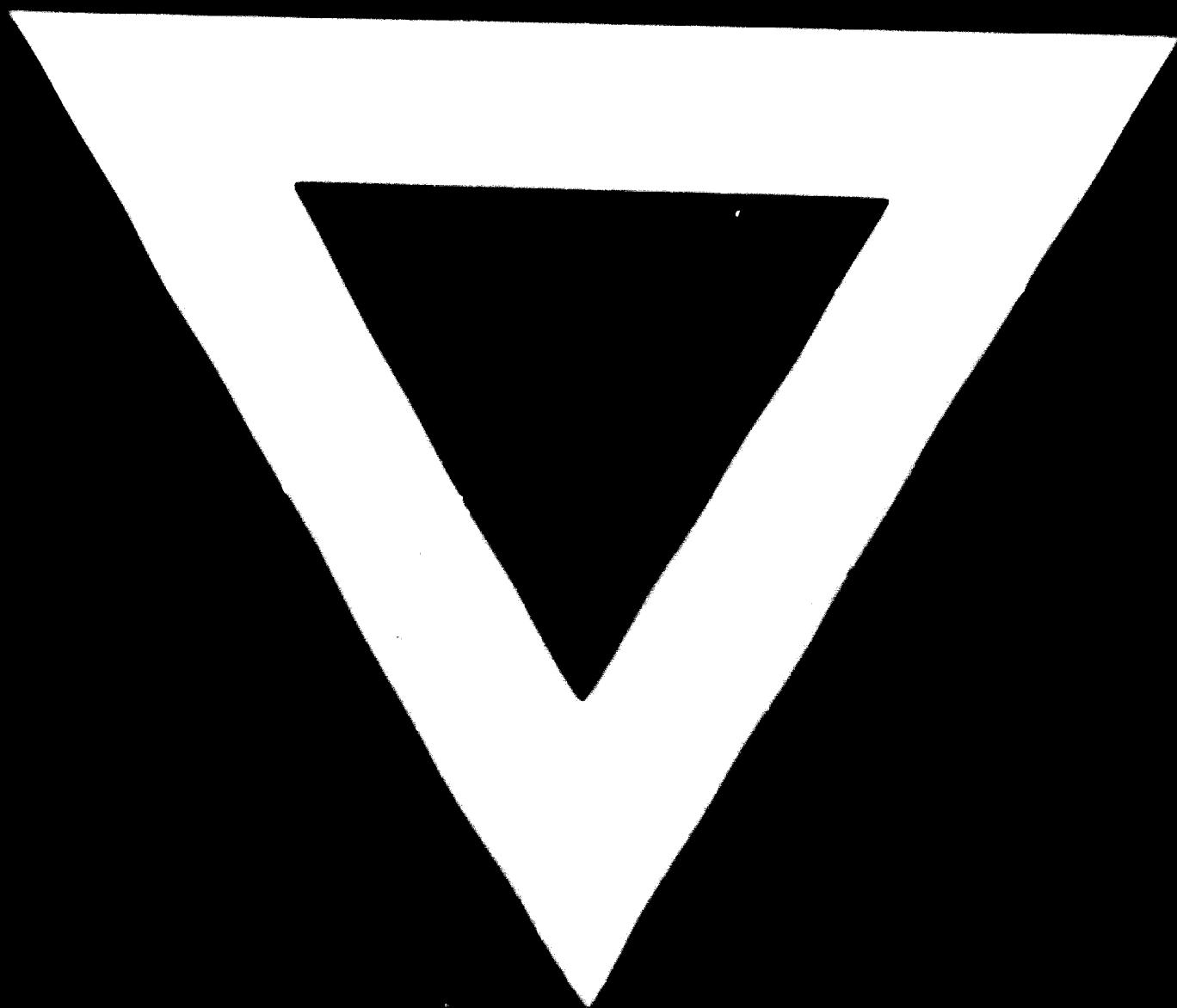
## 2. Civil engineer

In co-operation with the industrial economist, the expert will:

- (1) Survey, evaluate and select the site of the industrial estate(s), taking into account, besides physical planning requirements, the availability and development prospects of labour, power, water and other utilities, transport, communications, housing, and other supporting facilities.

- (ii) Prepare estimates of the size and number of factories and other buildings, common facilities and amenities;
- (iii) Prepare layout and engineering plans for factories, common service facilities, administrative and auxiliary building, drainage, sewerage, roads, rail lead tracks, electric stations and other utilities, and recommend appropriate building materials and techniques;
- (iv) Propose a development schedule for the estate(s).
- (v) Advise on the zoning regulations required in connexion with the establishment of the industrial estate(s).
- (vi) Estimate the cost of development of the estate(s).
- (vii) Make recommendations on the organization of construction works and the training of construction workers and intermediate supervisory personnel.





**8 . 4 . 7 4**