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THE DISSEMINATION OF TECHNICAL INFORMATION
AS A MEANS OF ECONOMIC AND SOCIAL DEVELOPMENT

(Note prepared by the
Centre for Industrial Development)

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THE DISSEMINATION OF TECHNICAL INFORMATION AS A MEANS OF ECONOMIC AND
SOCIAL DEVELOPMENT

Introduction

1. The Economic Commission for Africa adopted a resolution at its fourth session 55 (iv) which called upon the Standing Committee on Industry and Natural Resources to urgently consider the dissemination of technical information as a means of economic and social development in Africa. In the light of this resolution, the following note has been prepared by the Centre for Industrial Development as a basis for discussion by the Standing Committee on Industry and Natural Resources. The object of this note is primarily to put before the Committee the programme of work of the Centre for Industrial Development in this area. While the orientation of the work of the Centre is to meet the needs of newly industrializing countries all over the world, due attention has been given in this note to the needs of African industry. It is hoped that as more data on the specific need of the newly industrializing countries in Africa become available, it will be possible to orient the programme of work of the Centre, in close co-operation with the Economic Commission for Africa, towards meeting these needs.
2. The Centre for Industrial Development has been entrusted with the task of collecting, analysing and disseminating the experience gained by various countries not only with regard to the promotion of industrial development but also with regard to the transfer of technology, the adaptation of techniques, the introduction of new processes and other such technological matters.^{1/}

^{1/} The latter subject has recently been emphasized in resolutions 829(XXXII) and 834(XXXII) of the Economic and Social Council, and the Conference on Science and Technology has been accordingly scheduled to meet in Geneva in February 1963.

3. The dissemination of information on the technical aspects of industrialization is a complex and formidable task. The subject is vast in the sense that the number of industries to be covered is very large, ranging from "basic" industries, such as iron and steel, to consumer industries, such as textiles, food processing, shoe-making, etc. Moreover, the dissemination of technical information on manufacturing processes and technology involves the problem of adaptation to suit the special needs of the developing economies. Many industrial techniques in existence have been basically evolved to meet the factor endowment of economies with relative abundance of capital and skills and relative shortage of unskilled labour. The developing economies, on the other hand, are afflicted by problems of capital and skill shortage and balance of payments difficulties, while remaining well-endowed with reserves of unskilled labour. The problem of developing appropriate technology for these conditions, therefore, is of fundamental importance. The dissemination of technical data thus will have to be carefully considered from the point of view of adaptation of this information to fit the needs of the developing economies. In doing so, the Centre will not attempt to compete with those established channels of technological information that can be easily tapped by the developing economies. The Centre, on the other hand, will assist the governments and institutions in locating these sources and in obtaining the necessary material.

Dissemination of technical information in selected industries.

4. With these considerations in mind, the Centre for Industrial Development has been assigned by the Committee for Industrial Development of the Economic and Social Council the following broad areas for study and dissemination of technical information. This does not preclude, however, collecting information on other industries. The Centre is in the process of establishing contacts with other national and international organizations to ascertain the work undertaken in specific areas. But

such work would be concerned more with the compilation of reference information, source material, etc., rather than with analytical studies in depth, as will be the case with the specific industries or industry groups mentioned below. These are:

1. machine building and machine industries;
2. metallurgy, including steel and other basic metals;
3. building materials (including cement);
4. chemical industries (including fertilizers);
5. textile industries; and
6. processing of agricultural raw materials.

5. It may be noted that these industries have also been studied in a report presented by the Secretariat of the Economic Commission for Africa, which is before the current session of the Standing Committee on Industry and Natural Resources. The study by the Economic Commission for Africa reviews the trends of production and trade in these areas, which should provide a suitable background for further work. The Centre, on the other hand, hopes to provide technical information and data to the African countries which should be useful for the planning and operation of these industries in Africa.

6. An important element of the work of the Centre will be the preparation of manuals on the industries that have been mentioned above. The manuals are conceived not as text books, but rather as loose-leaf collections of data that should be useful in particular for the pre-investment examination of industrial projects. Such data should include information on different processes, raw materials, capital and operating costs in relation to the size of plants, specifications of finished products, etc. The chief problem will be to select, from the vast amount of information available, those parts that are of real use to the countries for which the manuals are intended. The manuals will be periodically updated. These manuals will be prepared by the top level experts in each industry. The experts will be selected from among those who have had practical experience of designing or constructing plants in the developing countries.

The Centre has already started work on manuals for the iron and steel and the fertilizer industries, which will be ready in the course of 1963, and will start work on other manuals as soon as it is able to obtain the services of professional personnel of the highest quality.

Dissemination of information on specific industry problems

7. In addition to the above, the Centre is engaged in certain "across the board" areas which should be of special interest to the newly industrializing countries. The following areas have been selected for special study:

- The use of second-hand machinery in new industrial projects;
- Problems of maintenance and repairs of industrial equipment;
- Problems of quality control;
- The role of technological and industrial research institutes;
- Industrial standards;
- Packaged plants;
- Problems of product design;
- The use of modern automation techniques in the developing countries countries; and
- The adaptation of technological processes and equipment to the conditions of the developing countries.

8. While material on the above-mentioned areas would be made available for publication by the Centre, consideration will have to be given to the manner in which the information could be disseminated. One of the effective forms of dissemination of information and its eventual use by countries is through the convening of seminars with representation at the appropriate level. The experience of the regional commissions has indicated that expert seminars and inter-governmental meetings have yielded good results. The Centre has initiated, in co-operation with the regional commissions, a

number of seminars in 1963^{2/} at which the material prepared by the Centre would be considered.

The Centre's participation in other institutional activities for the dissemination of technical information

9. It is becoming increasingly important for newly industrializing countries to undertake work on the utilization of local raw materials, provision of services to industry and dissemination of scientific and technological information. Technological research institutes provide a useful framework to undertake such activities. A number of such institutes have been established recently on a national and regional basis, many of them with the assistance of the United Nations Special Fund. The Centre for Industrial Development will continue to provide the necessary assistance in the establishment and operation of technological research institutes. It will also provide a link in promoting mutual co-operation and exchange of information between these institutes. Towards this end, the Centre, in co-operation with the Economic Commission for Asia and the Far East, expects to convene a meeting of Directors of technological institutes in countries of Asia and the Far East in 1963 or 1964. It is hoped that, as a result of this meeting, an important step will be taken with regard to consultation and exchange of information between the different institutes. While the regional commissions remain directly responsible for the development of exchange of information in their regions, the Centre will keep in touch with their activities, and will continue to act as

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- 2/ Inter-regional seminar on modern methods of iron and steel making;
Seminar on the manufacture of machinery and industrial equipment
construction in the Economic Commission for Latin America region;
Seminar on the manufacture of fertilizers in the Economic Commission
for Asia and the Far East region; and
Seminar on the chemical industries in the Economic Commission for
Latin America region

an inter-regional link in these matters.^{3/}

10. A particular reference is called for in this connexion to the forthcoming United Nations conference on Science and Technology which is due to meet in February 1963 at Geneva. The Conference represents an important element in the dissemination of scientific and technological information especially relevant to the developing economies. The aim of the Conference is to "explore recent advances in the application of science and technology," and to "provide an opportunity for assessment of the impact of such applications on the processes of economic and social development..." A substantial amount of documentation is being prepared for the Conference on various aspects of industrial development. The deliberations and the exchange of ideas by the participants in the Conference are expected to add considerably to the understanding as to how best science and technology can serve the needs of less developed countries, and on the possible areas of co-operation among the less developed countries and between them and the advanced industrial countries of the world. The proceedings of this Conference will be of considerable value to the African countries which are embarking upon an integrated programme of industrialization.

11. The Centre expects to provide a follow-up on the industrialization problems dealt at the Conference. The Centre, in doing so, will systematically analyze the material presented and will undertake further studies based on the recommendations made at the Conference.

^{3/} A similar meeting of Directors of technological institutes in the Economic Commission for Latin America region is due to be held in early 1963 at Bogota, Colombia. The Centre expects to review the proceedings of that meeting for guidance in organizing similar meetings in other regions.

Dissemination of information on the work of the United Nations family
in the field of industrialization

12. The Centre has recently undertaken steps to provide a service of information on the work of the United Nations and the specialized agencies in the field of industrial development. The availability of this information, it is hoped, will facilitate better co-ordination of the work programmes of the various units so that the value of the total work of the United Nations family in the field of industrial development can be further enhanced. This information, which will be made available to all interested agencies, will include programmes of research as well as technical assistance activities undertaken by the United Nations family. The co-operation of the specialized agencies and the International Atomic Energy Agency has been pledged towards fulfilling the Centre's mandate in these matters.

13. These are only a few examples to give an indication of the broad outline of the work undertaken at the Centre for Industrial Development in the field of dissemination of technological information. This work will increase in volume and gather speed as human and material resources of the Centre expand.