

UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA
ECA/UNESCO Regional Symposium on the Utilization
of Science and Technology for Development in Africa
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WORKING GROUP III

REVISED REPORT

TOPIC  INDUSTRIAL RESEARCH AND DEVELOPMENT

RAPPORTEUR: Mr. M.S. Shanta

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A.1 Summary of Working Papers

A.2 Summary of Background Papers

A.3 Summary of Relevant Aspects of Country Papers

A.4 Summary of Discussions of the Working Group

The Topic of Industrial Research and Development was the province of Working Group III, and was taken up at this Group's afternoon session on 12 October. Mr. Abdelmalek Guessous (Morocco) and Mr. M.S. Shanta (Libya) continued as chairman and rapporteur, respectively.

As was the case for the other topics, a list of question was prepared and circulated as a basis for discussion (see Annex). On behalf of the ECA, Mr. A. Banjo summarized Paper WP/10 (see section A.1 of this topic report).

Much of the discussion focussed on the obstacles faced by African countries in industrial research and development. Among those mentioned were:

- The high capital cost of industrial development;
- The conflicting claims of the agricultural and industrial sectors;
- The lack of enthusiasm on the part of some of the developed countries for industrialization in Africa;
- The falling prices of African raw materials in the world markets;
- The difficulty of transferring research findings into African industrial operations, because many of the foreign controlled enterprises were only interested in short-term profits;
- The obstacles to the transfer of technology such as those caused by the often obsolete equipment sold or given to African countries by foreign concerns;
- The lack of funds or the conservative attitude of many African universities as reflected in their inability or unwillingness to undertake industrial and other applied research;

- The occasional tendency of embarking on industrial enterprises without adequate scientific or economic preparation such as the provision of raw materials, proper site selection and market studies;
- The inadequate nature of technical assistance, particularly with respect to the lack of training of national counterparts;
- Restrictions on trade and lack of industrial co-ordination between many neighbouring African countries;
- The lack of national agencies for standards and metrology.

Concerning the problems associated with the transfer of technology to the developing countries, it was emphasized by the observer from UNCTAD and agreed to by the participants that on acceleration of this transfer on improved terms would require paying special attention to the following questions: the channels through which the transfer is being effected and their improvement; the ways and means of reducing both direct and indirect costs of this transfer; and the need for alleviating any restrictive conditions, imposed under licensing and similar arrangements, which may hamper the expansion of the industries and exports of the developing countries.

Other points made were the need for each country in its industrial development to stay ahead of, or at least in step with, its demographic development; the necessity for each country to evolve a plan for industrial development, and to establish national Councils to oversee this development; the advisability of a closer liaison between university researchers and those in charge of the national economy; and the need for giving sufficient emphasis to industrial development in relation to agricultural development.

Summing up for UNESCO Mr. H. Lustig reminded those present of the prime importance of the United Nations Industrial Development Organization (UNIDO) as an executing agency in the field of industrial development. At the vital interface of teaching, research and development, there was

however, very close collaboration between UNESCO and UNIDO. This manifested itself in the joint staffing of technical assistance projects, with UNESCO supplying the academic experts and UNIDO sending persons from industry. On the basis of its experience UNESCO agreed with the view of the participants that the problem of linking research with industrial development can be tackled in one of two ways : (1) Where possible, by the strengthening of existing institutes of technology or the creation of such institutes within existing universities, all with a strong industrial orientation; or (2) the establishment of separate institutions outside of universities (e.g. institutes of petroleum, mining, agronomy, etc.), combining research, development, economic studies and industrial applications. In recent years the creation of national centres of standards and metrology had received a good deal of emphasis in UNESCO's technical assistance programme, and UNESCO would be glad to receive and consider requests from African countries for assistance in the establishment of these and other industrially related institutions. All of the projects aided by UNESCO had the training of national counterparts as a central part of the plan of operation.

On the basis of the suggestions that were made for overcoming the difficulties in industrial research and development, the following recommendations were submitted to the plenary session and adopted by it.

B. RECOMMENDATIONS

Recommendation 1

Before the establishment of new industries African countries should embark on a thorough programme of feasibility study relating to such questions as the availability of raw material, the suitability of the site, the availability of manpower, and the possibilities for marketing.

Recommendation 2

While for some time to come, some countries of Africa will have to rely heavily on foreign experts, technicians and enterprises for industrial development, this dependence should be circumscribed by appropriate safeguards and should be as short as possible. The need for proper safeguards applies particularly to programmes of bilateral assistance.

Recommendation 3

Governments should initiate closer cooperation between universities and other research institutions in the one hand, and industry on the other, through the operation of national research councils, for the purpose of promoting industrial research and relating it to industrial development.

Recommendation 4

Activities in the field of industrial research and development in African countries should give special attention to the adaptation of existing technologies to local physical conditions, the need for testing and quality control, and the economic and cultural factors involved in the marketing of the products.