



45890



Distr. GENERAL

E/CN.14/673

7 February 1977

Original: ENGLISH

UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

ECONOMIC COMMISSION FOR AFRICA

Thirteenth Session

Fourth meeting of the Conference of Ministers

Kinshasa, 24 February - 3 March 1977

Item 16 of the provisional agenda

TECHNOLOGY TRANSFER CENTRE
PROGRESS REPORT ON THE ESTABLISHMENT OF AN AFRICAN REGIONAL
CENTRE FOR THE TRANSFER, ADAPTATION AND DEVELOPMENT OF
TECHNOLOGY

1. In pursuance of the recommendations of the Lima Plan of Action in Industrial Development and Co-operation, the decisions of the third Conference of African Ministers of Industry, meeting in Nairobi in 1975, UNCTAD resolution 87(IV) and a resolution adopted by the OAU Assembly of Heads of State and Government in Mauritius in 1976, ECA and OAU were entrusted, in co-operation with interested specialized agencies, with the task of establishing an African Regional Centre for the Transfer, Adaptation and Development of Technology. While the final decisions would be taken by a meeting of plenipotentiaries, appropriate preparatory work would be required before that meeting.

2. The question of the establishment of such a Centre was considered by the Executive Committee at its fifteenth meeting, held in Algiers in October 1976. The participants emphasized that the Centre should take into account the actual needs of member States, to which end there should be adequate consultation with Governments in the preparatory stage. The Committee also suggested that initially special emphasis should be placed on the development of technology, as well as on regulating its inflow in accordance with the principles of self-reliance.

3. As a part of the preparatory activities, the Secretariat undertook informal consultations with a number of specialized agencies in 1976 and the beginning of 1977 concerning the functions, objectives and mode of operation of the Centre, in order to prepare a basis for consultations with member States. On the basis of its discussions and bearing in mind the specific requirements of the African region, the Secretariat prepared draft terms of reference for field missions to start work in March 1977, and submitted them to the Intergovernmental Committee of Experts for Science and Technology Development in Africa at its fourth meeting held in January 1977.

4. The Committee adopted the draft terms of reference subject to a few amendments. It also discussed arrangements for the involvement of the United Nations Office of Science and Technology, UNCTAD, UNDP, UNIDO, FAO, UNESCO and WIPO. The Secretariat subsequently finalized the terms of reference and prepared a project document, which has been circulated to African Governments and the specialized agencies.

5. ECA and OAU have invited the specialized agencies concerned to contribute one staff member each to participate in the field missions at their own expense. African Governments have been asked to indicate their willingness to assist with the activities of the missions and to undertake preparatory work to facilitate their work. Such preparations would include the setting up of a national committee on the various aspects of the transfer, adaptation and development of technology, which would then be the focal point for the activities of the missions in each country and would organize consultations on specific issues with various national groups and organizations.

6. It is proposed that the missions should begin their work by 15 March 1977, spending about three months in the field before returning to Addis Ababa for one month to prepare their final report. The report would then be submitted to all African Governments in preparation for a planned governmental expert meeting early in November 1977, which would prepare the ground for the meeting of plenipotentiaries in December 1977. An interagency meeting of all the agencies concerned would be convened some time in September 1977.

ANNEX I

I. Background

1. The programme for the transfer, adaptation and development of technology was accorded high priority in the Lima Plan of Action, by the fourth session of UNCTAD and by the OAU Assembly of Heads of State and Government meeting in Mauritius in 1976.
2. The objectives of the Centre include the provision of assistance to African Governments in the formulation of technological policies as an integral part of socio and economic development, and the establishment and strengthening of national technological centres to enable them to negotiate for and adapt imported technologies and to promote over-all technological development.

II. Tasks to be performed by the mission

- 3(a) To identify and evaluate, in a comprehensive manner, the needs of African Governments in terms of the choice, transfer and development of technology, and at the same time to examine existing institutions in the field of technology, their linkages to the productive sectors and the educational sector and their relationship to training, manpower development programmes and engineering education, and the design capability of the system, with a view to establishing modalities for building on existing institutions by modifying their structures to enable them better to serve the technological needs of the African region;
- (b) To formulate, in the light of the above and of national and regional objectives, a coherent self-reliant African approach to the problem of building the technological capability of Africa, and to outline specific responses to problems identified in various sectors and set out the nature and structure of the proposed centre, taking particular note of the need to spell out in detail the role, functions, linkages and organizational structure as well as the location, funding and financing of the proposed centre. In this, as in all other matters, the mission should identify priority areas for action and draw up a short-term and long-term programme of action for Africa in this field;

(c) To present its recommendations to an intergovernmental meeting in the form of a report covering the following areas:

- i) General report;
- ii) Work programme of the Centre for the first five years;
- iii) The specific relations between regional and national centres;
- iv) The budget for implementation of the programme for the first five years;
- v) Draft agreement among African countries for the establishment of the Regional Centre (including the terms of reference of the Centre, the structure and functions of the national centres, and sources of financing);
- vi) Recommendations on the criteria to govern the choice of location of the Centre taking into account, inter alia, a substantial contribution by host government, good communications, a suitable industrial environment and reasonable local costs;
- vii) Arrangements for establishing contacts with similar institutions in other developing countries and elsewhere; and
- viii) Action programme for the establishment of the Centre.

III. Modalities for the operation of the mission

4. The regional and national centres should be geared to solving current, medium-term and long-term technological problems. The mission should therefore see and hold discussions with personnel who utilize, pay for, and plan socio-economic development and training of personnel.

5. The mission should carry out its tasks by visiting:

- (a) Ministries of finance, planning, industry, education, mining and works, agriculture, transport and communications, and problem-oriented research institutions;
- (b) Public sector institutions engaged in productive activities, that is, public utilities, State corporations and engineering works and workshops plus agribusinesses, agricultural co-ops and editors of one or two leading national papers;

- (c) Institutions engaged in scientific and technological activities, such as academies of scientific research and technology, national research centres, and so on;
- (d) Indigenous industrial technological enterprises in the private sector;
- (e) Formal and non-formal educational institutions in science and technology; universities, polytechnics, the central manpower planning body (if any), technical schools; semi-professional training programmes, industrial training schemes, on-the-job training and other forms of learning and doing;
- (f) International agencies involved in the field; and
- (g) Such other institutions and individuals as may assist them.

IV. Composition of the mission

6. The mission will consist primarily of:

- 1 outside consultant as leader
- 1 outside consultant as member
- 1 expert each from any of the following agencies which wish to make such a contribution: UNIDO, UNCTAD, UNESCO, WIPO, UNEP, FAO and the Headquarters Office of Science and Technology
- 1 expert representing ECA
- 1 secretary to the mission, provided by ECA.

7. The mission will be divided into three teams, one led by the mission leader, ~~and by the independent consultant and one~~ by an ECA staff member.

8. Each of the teams will cover about 10 countries.

9. The team leaders will assemble at ECA headquarters in Addis Ababa on 15 March 1977 for a period of one week for briefing. Beginning on 15 March 1977, all activities including briefing, field activities, completion of the preparations and submission of the report make a total of four months' assignment.

10. The mission leader, who should come from outside the United Nations system, and the independent consultant will be appointed by ECA.

V. Country coverage

11. The mission should aim at visiting a diverse cross-section of African countries including large and semi-industrialized countries, medium industrializing countries, least developed countries, land-locked countries, island countries, countries with different political ideologies and newly independent countries.

ANNEX II

PROJECT DOCUMENT

ON THE

ESTABLISHMENT OF A REGIONAL CENTRE FOR THE TRANSFER,
ADAPTATION AND DEVELOPMENT OF TECHNOLOGY

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I. Authority, origin and nature of the proposal

- (a) High priority in Lima Plan of Action [para. 60(b)];
- (b) Second and Third Conferences of African Ministers of Industry (Cairo, 1973 and Nairobi 1975);
- (c) General Assembly resolution 3362(S-VII);
- (d) General Assembly resolution 3507(XXX)(para.5);
- (e) UNCTAD conference resolution 87(IV) (para.7);
- (f) Economic and Social Council resolution 2034(LXI);
- (g) OAU Assembly of Heads of State and Government (Mauritius, 1976).

II. Justification for establishing the Centre

- (a) Need for assistance in formulating policies at the national level for the transfer, adaptation and development of technology as integral part of social and economic development;
- (b) Need for assistance in building national institutions in the field of development and adaptation of technology to meet the needs of the African people;
- (c) Inadequacy of research and development in Africa;
- (d) National industrial structures characterized by low level of technology, lack of innovation and lack of support for indigenous research and development and technological activities;
- (e) Need to train skilled personnel to handle all aspects of the transfer, adaptation and development of technology;
- (f) Limited capacity of domestic industries for adaptation and absorption of foreign technology;
- (g) National education systems still not geared to move to more technology-oriented skill formation systems;
- (h) Need to promote a move from excessive reliance on imported technology to more self-reliant solutions, thus reducing technological dependence;
- (i) Need to monitor, appraise and disseminate appropriate technologies.

III. Objectives

- (a) To assist in the formulation of national and regional technological policy as an integral part of integrated social and economic development, especially industrial development;
- (b) To regulate the inflow of technology;
- (c) To reduce significantly the cost of imported technology;
- (d) To remove or alleviate restrictive terms and conditions in technology contracts and thus to ease and increase the flow of technology to African countries;
- (e) To stimulate Governments and public and private agencies to be more aware of the need for indigenous technological solutions and change;
- (f) To assist in the identification of technological needs and the evaluation of technology, the unpackaging of technology, the promotion of absorption and adaptation of technology and the long-term forecasting of technological needs;
- (g) To establish **pools** of technological information and assist in their operation;
- (h) To develop national and multinational programmes for the development of technology in various sectors, such as agriculture, transport and communications and industry;
- (i) To develop theoretical and practical indigenous technological know-how through training and education;
- (j) To up-grade and modernize indigenous technological capability;
- (k) To develop a local negotiating capability in respect of foreign investment;
- (l) To provide advisory services on technological choices in relation to national and multinational enterprises;
- (m) To promote the diffusion of technology already assimilated, whether indigenous or foreign;
- (n) To provide a clearing house for national centres.

IV. Modalities of operation and funding

- (a) A close working relationship with existing similar national and subregional institutions;
- (b) Organization of an information system to enable the Centre to obtain data related to its objectives from inside and outside the region and ensure the flow of information to national centres;
- (c) Preparation of an inventory of existing national centres and other facilities in this field and their capabilities in order to determine critical areas for improvements;
- (d) On the basis of the information collected, assistance to countries in developing programmes for improving their capability for the transfer, adaptation and development of technology;
- (e) Assistance to national institutions in establishing a working relationship with the industrial sector;
- (f) The Centre should establish working relationships with similar institutions in the rest of the world, and particularly in other developing regions, within the framework of technical co-operation among developing countries.

The Centre will assist African countries, through national centres, especially in the following areas:

- (a) Assistance for the development of national policies (which remains a governmental prerogative);
- (b) Identification of priority areas;
- (c) Systematic collection and dissemination of information on available technologies, objectively analysed as to terms obvious advantages and drawbacks;
- (d) Assistance in the evaluation and selection of technologies which fit in with national needs and priorities;
- (e) Improvement of negotiating capabilities to secure the best terms for the acquisition of imported technologies;

- (f) Institutionalization of the negotiation and acquisition processes, including guidelines for agreements (licensing, know-how), turnkey projects, equipment specifications, guarantee and training provisions, consultancy and engineering, etc., at the national level;
- (g) Establishment of methods and national institutions for the effective adoption or adaptation and the final absorption of technologies after transfer;
- (h) Promotion of the co-operative development of indigenous technologies, including commercialization of research and development results;
- (i) Training officials from government, business and industry in different aspects of technology transfer, development and adaptation;
- (j) Supply, through national centres and systems, of information to local development institutions, to government (for planning, control and feed-back), business (for export) and industry (for improvement and expansion);
- (k) Improvement of existing national institutions and arrangements, and promotion of and assistance in the establishment of new ones;
- (l) Encouragement of systematic exchanges of information and experience among countries of the region, preferably through national and regional centres, and assistance in the creation of suitable channels for that purpose;
- (m) Advice and practical help to national centres regarding problems and matters related to foreign investment, joint ventures, legal incentives to investment flow and safeguards, and so on.

The functions may be expanded, re-arranged or postponed according to the countries' needs. The Regional Centre is expected to deal with the whole problem, taking also into account provisions for subregional activities for a group of countries encountering similar technological problems which require specific solutions.

Furthermore, the Centre should serve as a major catalyst for the development of indigenous technologies appropriate to local raw materials; serve as a forum for the development of new ideas as a result of co-operation among countries of the region; prepare long-term forecasts of the technological needs of the region; provide short-term ad hoc advisory services, and so on.

V. Phasing

(a) A preliminary time-table for the Centre would be as follows:

Preparatory phase	1976 - 1977
Phase I	1978 - 1981
Phase II (full operation)	1982-1984

(b) The final phasing will be determined by the outcome of the field missions.

VI. Expected impact

(a) Introduction of policies on technology transfer and development at the national level;

(b) Better utilization of sums allocated for importation of technology;

(c) Qualitative increase of the flow of technology;

(d) Better utilization of indigenous research and development results;

(e) Increase of available indigenous professional manpower;

(f) Gradual reduction of dependence on foreign technology;

(g) Increased employment;

(h) Savings or better utilization of foreign currencies;

(i) Greater utilization of local raw materials.

VII. Sources of financing

The courses of financing the Centre and its operations will consist of:

(a) Subscriptions and/or grants from member African countries;

(b) Grants and/or subscriptions from other developing countries (especially oil producers);

(c) Grants and/or subscriptions from developed countries;

(d) Subscriptions, grants and soft loans from intergovernmental organizations in Africa such as ADB and the Arab Bank for Economic Development in Africa;

(e) Technical assistance from bilateral and multilateral sources; and

(f) Service charges and fees when the Centre is fully operational.

VIII. Personnel

The qualifications of the personnel required for the Centre will be directly related to the objectives of the Centre. The staff must be such as to enable the Centre to implement at least a minimum effective programme as described in the objectives and modalities. In line with the concept of self-reliance, it is expected that the Centre will be staffed predominantly by Africans. However, in view of the present scarcity of qualified African personnel in this field, the ratio of African staff to expatriates as well as the actual total personnel required will have to be determined by the field missions and the Committee of Experts.

IX. Location

The choice of location will depend on the following basic criteria:

- (a) Substantial contributions from host Governments;
- (b) Fair geographical and linguistic distribution of centres;
- (c) Good communications;
- (d) Suitable industrial environments;
- (e) Reasonable local costs.

X. Organizational set-up

The Regional Centre will contain the following substantive divisions:

- (a) Technology Policies and Evaluation Division;
- (b) Technology Information Division;
- (c) Advisory Services Division;
- (d) Training and Personnel Management Division

The Policies Division will work on ~~short-term~~ and ~~long-term~~ forecasts and analysis of the needs of the region in terms of technology development and inflow, study of the possibility of institutionalizing the flow of technology and its indigenous development, and serve as a liaison with other regional centres foreseen for Africa.

The Information Division will collect and disseminate technological and other information as needed by Governments and entrepreneurs, secure a suitable link with the UNIDO and Industrial Technological Information Bank and take care of publications and other material prepared by the Centre.

The Advisory Services Division will provide such services at the request of Governments at the national and subregional levels. Close co-operation with the Policies Division will be secured.

The Division dealing with Training Questions will secure the necessary training facilities to be put at the disposal of individuals and organizations dealing with various questions of technology development and transfer, as well as management and personnel questions.

It should be stressed that, at least initially, the Centre will be heavily dependent on direct substantive support from UNIDO (as well as other United Nations agencies), particularly in those areas where UNIDO has accumulated considerable expertise and knowledge.

XI. Schedule of implementation

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|-----|---|------------------------|
| (a) | Field missions to select African countries and submission of report | March to July 1977 |
| (b) | Interagency meeting | September 1977 |
| (c) | Governmental expert meeting to approve the final project document | November 1977 |
| (d) | Meeting of plenipotentiaries on the establishment of the Centre | November/December 1977 |
| (e) | Establishment of the Centre | 1 January 1978 |