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UNITED NATIONS INDUSTRIAL
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Round Table Ministerial Meeting
Organized by the United Nations
Industrial Development Organization
(UNIDO) in Co-operation with the
Government of the Republic of
India

New Delhi, India
4 - 8 January 1977

INDUSTRIAL AND TECHNOLOGICAL CO-OPERATION

AMONG DEVELOPING COUNTRIES ^{1/}

prepared by

UNIDO Secretariat

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1. INTRODUCTION

1. Although the subject of co-operation among developing countries has been engaging the attention of the international community for almost a decade, it received the main impetus in the form of an action programme for economic co-operation adopted at the Algiers Conference of Heads of States and Governments of the Non-aligned Countries in 1973. In response to the Algiers Conference, the General Assembly adopted resolution 2974 (XXVII), which provided an operational content to the concept of collective self-reliance and mutual help among developing countries in order to attain their development goals. With the adoption by the 6th Special Session of the General Assembly in 1974 of its resolution on the New International Economic Order, the subject of co-operation among developing countries assumed a special significance. The General Assembly Resolution 3202 (S-VI) envisaged inter alia measures to be taken by developing countries "to promote collective self-reliance among them and to strengthen mutually beneficial international economic co-operation with a view to bringing about the accelerated development of developing countries." The Lima Declaration and Plan of Action on Industrial Development, adopted in 1975, attaches particular importance to co-operation among developing countries and has indicated a number of specific measures including establishment of appropriate machinery for co-operation, co-ordination of efforts among developing countries in the acquisition and utilization of foreign technology and the conclusion of long-term agreements on industrial specialization.

2. The Mexico Conference on Economic Co-operation among Developing Countries held in 1976 has outlined guidelines and requested relevant international agencies to initiate action. In this context, the first Round Table Ministerial Meeting on Industrial and Technological Co-operation, to be held in New Delhi from 4 to 8 January 1977, is of great significance. The main objective of the meeting is to explore, in a concrete way, avenues and mechanisms of co-operation among developing countries so as to contribute substantially to the goals set forth by the Lima Declaration and Plan of Action, namely to achieve the target of at least 25% of world industrial production originating in the developing countries by the year 2000.

3. The fundamental principle which underlines technical co-operation among developing countries is that technical assistance among these countries is to be conceived neither as a substitute for nor a competitor to present bilateral and multilateral programmes. The overall objective, therefore, is to find the means to expand the total resource flows, not simply change their proportions. Further, the efforts of the international community are to be dedicated to the much needed improvement of information flow among developing countries and the tapping of unused resources for development activities. The resolutions adopted in the international forums, both inside and outside of the United Nations as well as discussions in regional and international meetings, have brought out a number of points of consensus. The concept of self-reliance is not an expression of a desire for isolation or autarchy, but an essential dimension of a new inter-related system of global relationships. Firstly, it provides greater opportunities for progress through co-operative efforts rather than through individual endeavours. Secondly, in view of the fact that the third world countries today are at different levels of development, possess different endowments, both natural and human, and have different productive capacities, opportunities for meaningful and mutually beneficial co-operation are vast. Thirdly, the United Nations system has been urged to promote such co-operation and provide effective assistance in strengthening co-operation at sub-regional and inter-regional levels. Fourthly, every effort has to be made to provide an operational content to the subject of co-operation among developing countries. Fifthly, towards this end, specific programmes of action need to be developed and more particularly a mechanism be established to foster and facilitate such co-operation.

4. The purpose of this paper is primarily to elaborate on the last point above, namely to suggest specific programmes of action and various approaches for the establishment of appropriate mechanisms to guide, for the initiation of relevant programmes, for the provision of resources and for the review of progress in order to promote industrial and technological co-operation among developing countries.

II. POLICIES AND OBJECTIVES

5. It should be recognized that co-operation among developing countries as such is not new, except that it is undertaken in an ad hoc manner. With the aim of evolving systematic and continuous programmes of co-

operation in the fields of industry and technology, it is necessary to identify broad areas of co-operation as well as appropriate mechanisms for their implementation. The identification of programmes and mechanisms should be based on a pre-conceived strategy aimed at providing comprehensive, coherent and integrated action in this field. This inter alia, should be governed by the following objectives:

- Harmonization of policies and action to achieve **the 25%** target set by Lima following redeployment of productive capacities from developed to developing countries and the creation of additional capacities;
- Co-operation in the field of industrial technology with a view to improve the identification and use of technologies already available in the developing countries, including technical know-how and skills; machinery and equipment; design, consulting and construction capabilities etc.;
- The creation of co-operative programmes concerning applied research and development activities in specific sectors, drawing heavily upon machinery and capabilities already available in the developing countries;
- The development of concrete plans for encouraging the use of engineering and consultancy capabilities available within the **developing** countries as viable alternatives to those offered by industrialized nations;
- Establishment and strengthening of the institutional framework at the national and regional level, to sustain industrial and technological development, and to promote joint investment projects;
- To promote collective action for negotiating and bargaining for technology acquisition by the developing countries.

6. The objectives outlined above will have to rely on the political will and appropriate support from all governments concerned and on the introduction of adequate mechanisms for its implementation. UNIDO could play a central role in fostering and co-ordinating this programme

and could as well provide analytical and direct assistance as needed. Moreover, it should be envisaged that the work and activities to be undertaken under this programme would have to rely upon adequate information and experience which is already available within the countries, but so far not properly utilized.

7. In an increasingly complex and interdependent economic society no group of countries can afford to cut themselves off from the main stream of international technological progress; however, developing countries cannot continue to be the recipients of production techniques that are often unsuitable, supplied at inflated prices and under restrictive conditions. It is therefore essential that the New Delhi Round-Table Ministerial Meeting should give some attention to this problem in order that within the context of the meeting new perspectives and new institutional arrangements could be developed. While this would be the subject of discussion and exchange of views, it was considered useful to supplement this documentation by a brief review of UNIDO's initiatives in the promotion of co-operation.

III. CURRENT AND PROPOSED CO-OPERATIVE PROGRAMMES

8. The documentation prepared by the Indian Government relates to its experience in three specific sectors, namely (a) engineering industry, (b) small- and rural industry and (c) institutional framework to sustain industrial production and technology development; and suggests areas of co-operation among developing countries in these sectors. This was done to enable the Round-Table Ministerial Meeting to examine, in a concrete way, specific areas of co-operation. These include availability of the Government of India's experience in connexion with the setting up of industrial institutions of all types, consultancy services, co-operation in setting up projects, supply of know-how and skills, training of personnel, etc.

(a) Industrial Co-operation Among Developing Countries

9. UNIDO's systematic efforts to promote co-operation among developing countries were initiated after the Industrial Development Board adopted its Resolution 36 (VII) on this subject in May 1973. UNIDO, taking into account the limitation of appropriate financial resources for undertaking extensive work in this area, has mobilized available finances and allied resources and has started a modest, but effective programme in this important field of activity.

10. As a first step UNIDO undertook a survey in 1974/1975 of existing and potential capacities of developing countries and possibilities of sharing their experience and capabilities with other selected developing countries with respect to their identified needs. Based on the response from the countries, a programme was initiated by UNIDO with a view to

- increase the awareness of the developing countries of their abilities to initiate co-operation, as well as their awareness of the existence of industrial services and goods which could be appropriately utilized by other developing countries on mutually favourable terms;
- promote implementation of concrete co-operative projects between two or more countries.

11. The results of the survey were published and distributed to all developing countries, and governments were invited to formulate proposals for bilateral or multilateral co-operative arrangements. A number of specific proposals for co-operative projects was submitted to governments in late 1975 and early 1976. In addition, agreements in principle were also reached on initiation of a number of co-operative projects during the Fifth Regional Seminar on UNIDO operations held in New Delhi in January 1976, which was organized primarily for the benefit of the least developed countries of Asia.

12. From January 1974 up to now, UNIDO has approved a large number of projects specially designed to promote co-operation among developing countries. The funds approved by UNIDO for these projects amount to approximately \$680,000. The largest share of these funds came from UNIDO's General Trust Fund. It is difficult to quantify the value of these projects in monetary terms as in most cases the donor or host country(ies) contribute largely in kind and in services. On the other hand, UNIDO's contribution varies and in some cases it is limited to the payment of the international travel involved, in other cases it covers travel, per diem and other expenses, particularly in the case of least developed countries.

(b) Harmonization of Policies

13. The Lima Declaration and Plan of Action, and the General Assembly Resolution 3362 (adopted at the Seventh Special Session) called upon UNIDO to establish a system of consultations in the field of industry at the global, regional and inter-regional sectoral levels between developed and developing countries and among developing countries themselves. The basic aim of the system would be to increase the share of developing countries in world industrial production through a world-wide deployment of industrial production and by the creation of new industrial capacities. This is to enable the developing countries to achieve the target of at least 25 per cent of world industrial production by the year 2000 as recommended in the Lima Declaration and Plan of Action. UNIDO is also called upon to serve as a forum for the negotiation of agreements in the field of industry at the request of the governments concerned.

14. The activities of UNIDO in the sphere of consultation have so far been restricted to promoting or paving the way for industrial co-operation agreements between developing and developed countries. Also action has been initiated for the preparation of the first Consultation Meetings on Fertilizers as well as Iron and Steel Industries (which are to be held in Vienna on 17 - 21 January and 7 - 11 February 1977, respectively). During 1977, additional consultation meetings are planned for the agro-based industry sector. In the biennium 1978 - 1979, it is foreseen that the following sectors will be the subject of consultations:

- Agricultural Machinery
- Pharmaceuticals
- Building Materials Industry
- Capital Goods.

15. It will be realized that, unlike consultations which have taken place in commodities under the aegis of UNCTAD, industrial sector consultations have no precedent in world economic relationships. Their success, so crucial to the goal of developing countries in achieving economic self-reliance, hinges upon careful and meticulous preparation of the issues to be raised and discussed at the sectoral consultation meeting. These issues would take stock of the requirements of the

developing countries for obtaining the necessary financial resources, acquiring technology and know-how, up-grading and forming new technical skills and exploring for new raw materials. These are basic prerequisites to enable a particular sector to contribute effectively to the achievement of the 25 per cent target. Another crucial factor is that the developing countries develop an awareness and appreciation regarding the objectives and the expected outcome of the consultation meetings. The outcome should lead to specific proposals for agreement related to expanding productivity in a particular sector, or to redeployment of industrial capacities to developing countries.

(c) Co-operation in the field of industrial technology

16. Recent thinking, both at the national and the international level, has shown that transfer of technology is only one element, although important, in the process of building the technological capability of a country. Many of the developing countries are now thinking in a much broader perspective consisting of the following major elements:

(i) preparation of a technology plan in addition to, or to supplement, the economic development plan; (ii) the development of a technology policy and a legal framework as major instruments; (iii) institutional framework to provide basic infrastructure to adapt, develop and sustain technology requirements of industries; (iv) software technology in the form of information on technological alternatives for both large and small industries; (v) inventory of available and usable technologies; (vi) acquisition of know-how and appropriate contractual arrangements, and (vii) promotion and co-ordination of actual research programmes aiming at the development and adaptation of technology for use in local industry.

17. While UNIDO's activities broadly cover these areas, some interesting approaches and instruments have been developed by UNIDO to particularly bring about the co-operation among developing countries in the field of technology.

18. Following the International Seminar on Transfer of Technology, organized jointly by the Government of India and UNIDO, an agreement was signed in December 1972 with a view to making available the Indian industrial and technological experience to other developing countries in

a spirit of partnership between the Government of India, UNIDO and the participating developing countries. The main activities undertaken under this agreement relate to the organization of country exchange visits, sectoral meetings and training programmes. So far, **seven exchange visits, a number of sectoral meetings and several training programmes** have been completed. Based on the current experience, UNIDO organized a visit of senior officials from the Andean Group of Countries. **Based on their findings, an agreement of co-operation was signed amongst** the Government of India, UNIDO and the Secretariat of the Andean Group of Countries so as to develop mutual co-operation on an inter-regional basis in selected areas of technology and promote selected industrial sectors. Also, **a Note of Understanding was signed** between UNIDO and the Government of India in April 1976 with a view to enlarge the role of co-operation in the light of the mandate given to UNIDO by the Lima Declaration and Plan of Action. The purpose of the country exchange visits was initially to foster technology familiarization in the respective areas of interest, discuss mutual technological assistance and co-operation and provide a follow-up, as required, as a tripartite arrangement between UNIDO, the host country and the participating countries. This programme was financed by UNIDO providing the cost of international travel, **and the host government being** responsible fully for all local costs.

19. In addition to these exchange visits, a series of sectoral meetings was organized to provide an opportunity for sharing regional know-how and experience with the recipient entrepreneurs in the developing countries. The meetings were organized with a view to providing opportunities for consultations on subjects of interest and also establishing link-ups between the host institutions, or an industry, and their counterparts in the recipient countries. Some of these meetings were specifically designed for the benefit of the least developed countries. The experience of UNIDO, so far, has been quite rewarding and it has resulted in the mobilization of resources in the participating countries. The responses from the developing countries have been such that UNIDO has been requested **to expand the scope of such programmes. At the same time, interest has** been expressed that UNIDO continue to be the partner in matters of follow-up, in the role of technical adviser, in clarification of procedure, **and also as expediter in cases of bureaucratic difficulties. It may be noted**

in this connexion that the co-operation thus developed has been more effective in the public sector undertakings, as it has been found easier to provide, without extra cost, the available technical know-how which the host country has developed, particularly in high-depth technical areas such as engineering, machine-tool and pharmaceutical industries. Co-operative arrangements have also been developed in the field of manufacture of leather products, processing of vegetable oils, packaging and building materials. The Government of India has named the Council of Scientific and Industrial Research of India as the focal point, and participating organizations have similarly named their respective organizational units to facilitate future co-operative arrangements.

20. UNIDO has also initiated agreements with the Governments of Yugoslavia and Romania so as to be the focal points in specific sectors, i.e. agro-industries and chemical and petrochemical industries. Through these specialized centres it has been possible to make full use of the available expertise, technical know-how and the possibility of providing equipment to other developing countries. Through the good offices and expressed will of the donor countries, it has thus been possible to provide timely assistance in special situations such as those of the Sudano-Sahelian Zone, and of some of the least developed countries in Africa.

21. UNIDO has also been able to draw on the experience of several developing countries in evaluating specific technological experience so as to make it available generally to all interested developing countries in such fields as utilization of solar, wind and biogas energy, scaling down of plants in such fields as cement, fertilizers and agricultural machinery, and promotion of technologies for the utilization of locally available raw materials, including medicinal herbs.

(d) Establishment of Industrial and Technology Institutes to Serve Common Needs:

22. It is generally recognized that an adequate industrial infrastructure is necessary to sustain the industrialization efforts. UNIDO, through its technical assistance programme, largely financed by UNDP, has been responsible for the establishment and operation of over 50 national industrial and technology institutes in developing countries. These

institutes have been established at the request of the developing countries to meet their specific needs. They can be broadly classified into general purpose institutes and specialized institutes. The general purpose institutes provide facilities for raw material testing, metrology, product development, standardization and general advisory and information services. The specialized institutes are primarily geared to support industrial sectors such as iron and steel, leather, textiles, cement, building materials, petro-chemicals etc. In addition, there are also institutes which are linked to industrial planning functions of the governments: undertake feasibility studies, appraise projects and offer guidance on the choice of investment etc. The degree of excellence has been dependent not only on the quality of the expertise provided by UNIDO but also on the quality of their infrastructural facilities, the standard of technical personnel available in the country etc. UNIDO has also been instrumental in assisting regional institutes in the field of agricultural machinery, fertilizers, plastics, standardization and quality control etc.

23. An evaluation of the existing institutes in developing countries indicates that there are a number of high-level and successful technology institutes in specialized areas such as iron and steel, food products, leather, petro-chemicals etc. They have the potential capacity and technological excellence to serve as points of reference on technological matters, provide competent advice on all technical aspects of the given industry and initiate training programmes. They could be the necessary nucleus of technology institutes to meet the regional and inter-regional demands and serve the common needs of many developing countries, provided that co-operative agreements would be made between the host country and the participating developing countries. This will also require the allocation of appropriate finances specially for expansion in those areas where services can be adequately provided. UNIDO's efforts to regionalize existing selected institutes have not met with unqualified success, partly because of lack of resources. However, every effort should be made to up-grade them rather than to establish new regional institutes. It is estimated that 15 to 20 million dollars would be needed to adequately establish and operate a regional or inter-regional institute if it has to qualify itself as a "centre of excellence". Perhaps such an estimate can be considerably reduced by the upgrading of the existing specialized institutes. This is one

area where considerable thought needs to be given as it would require a commitment on the part of the developing countries, not only to contribute to such an institution, but also to agree to develop effective co-operation in the technological field.

(a) Co-operation in the Productive Sector

24. UNIDO's main approach in this area is primarily to respond to specific requests in selected industrial branches. While this has been one of the most difficult areas to tackle, particularly if it involves the establishment of joint ventures, UNIDO's involvement has been primarily to advise the parties concerned on the potential areas of co-operation and, more particularly, to provide technological advice within established procedures of technical assistance. UNIDO, e.g. has been involved in the manufacture of a small 18 horse-power riding tractor in Swaziland; establishment of machine-tool industry in selected countries; and a cement plant for the benefit of two African countries. A more recent example relates to the role of UNIDO in the establishment of an Arab pharmaceutical company to supply the Arab markets with pharmaceutical products through the establishment of specialized production units in different countries based on the available local resources, technological capacity etc.

25. While this area poses a number of problems, it is also one in which opportunities for co-operation are unlimited. The existing joint ventures between developing countries, in most cases, still follow the pattern of the traditional joint ventures between the developed and developing countries. Presently a joint venture linking public sector industries from developing countries provides a greater scope than the normal commercial type of joint venture. Also, opportunities for collaboration are better within a framework designed to identify and exploit multinational combinations of natural resources, technology, management, finance and markets. Joint productive enterprises based on factor complementarity would facilitate diversification of production, economies of scale and specialization. The role of UNIDO could be invaluable if it could successfully bring such joint ventures to the mutual benefit of the co-operating countries.

(f) Training

26. A special situation exists with regard to training. Although it is recognized that training can be most effective if provided in the context of actual experience in the developing countries themselves, there are not many countries which have the adequate training infrastructure to cater to the requirements of other developing countries. In UNIDO's experience, a few developing countries have, despite their financial constraints, undertaken to provide specialized training programmes which offer an opportunity for other developing countries to secure specialized training at low cost. However, the demand for such training has been somewhat below expectation largely due to the "attitudinal barriers". It should however be said that these barriers are not insurmountable as the existing results have shown that the training programme has been well worthwhile, but it takes time for such experience and information to percolate at the responsible levels in the developing countries themselves.

27. The resource constraint is however more serious. In view of the fact that training is highly capital intensive and time consuming, and unless the host training institutions in the developing countries are adequately strengthened with financial resources, it will be difficult to bring about an effective co-operation amongst developing countries with beneficial results. There is also a problem in the types of training, which so far have been largely confined to training in technological skills. A gap exists with regard to training in areas such as preparation of contracts, types of collaboration arrangements, negotiations with foreign firms etc. Training in such matters can be adequately given in countries which have been engaged in these matters and have developed special capabilities as a result of their own experience in establishing and operating industrial plants.

IV. SOME SUGGESTIONS FOR ACTION

28. The New Delhi Round-Table Ministerial Meeting is historic. It is the first high level meeting specifically concerned with industrial and technological co-operation among developing countries. It is natural that it would be concerned with elaborating programmes in

operational terms and devising mechanisms to sustain co-operation among developing countries and make necessary recommendations for action to UNIDO as well as to other developing countries wishing to promote and strengthen co-operation. This may not, however, be done satisfactorily in one meeting only. Perhaps consideration could be given to regularizing round-table ministerial meetings to deal with this important subject on a continuous and systematic basis. Such round-table meetings could take place in other developing countries at intervals of about twelve months and could be organized on the same basis as the New Delhi meeting; and UNIDO would, if requested, take the initiative of organizing them in co-operation with interested governments. Also, it could, in co-operation with host governments, act as a secretariat in not only organizing the round-table meetings but also undertake the necessary investigation, research and promotional activities bearing on the recommendations of this meeting; or implement the plan of action, if any, on the assumption that it would have access to additional resources other than the ones now available. The periodic ministerial round-table meetings could be supplemented by meetings of officials of selected interested governments in the intervening period if attention has to be given in depth to selected topics. The officials' meetings could possibly consider a plan of action in sectoral areas such as engineering and capital goods, pharmaceuticals, textiles, etc. A second group may wish to consider a plan of action in regard to co-operation in any one of the areas mentioned in the paper. Such an approach is not meant to replace existing mechanisms but only to supplement them so as to make the entire programme operational and, at the same time, provide a focal point through UNIDO for such action.



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